76th Congress
3d Session } SENATE COMMITTEE PRINT

INVESTIGATION OF CONCENTRATION OF ECONOMIC POWER

TEMPORARY NATIONAL ECONOMIC COMMITTEE

A STUDY MADE FOR THE TEMPORARY NATIONAL ECONOMIC COMMITTEE, SEVENTY-SIXTH CONGRESS, THIRD SESSION, PURSUANT TO PUBLIC RESOLUTION NO. 113 (SEVENTY-FIFTH CONGRESS), AUTHORIZING AND DIRECTING A SELECT COMMITTEE TO MAKE A FULL AND COMPLETE STUDY AND INVESTIGATION WITH RESPECT TO THE CONCENTRATION OF ECONOMIC POWER IN, AND FINANCIAL CONTROL OVER, PRODUCTION AND DISTRIBUTION OF GOODS AND SERVICES

MONOGRAPH No. 37

SAVING, INVESTMENT, AND NATIONAL INCOME

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Printed for the use of the
Temporary National Economic Committee

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MONOGRAPH NO. 37

SAVING, INVESTMENT, AND NATIONAL INCOME

BY

OSCAR L. ALTMAN

ACKNOWLEDGMENT

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.

The status of the materials in this volume is precisely the same as that of other carefully prepared testimony when given by individual witnesses; it is information submitted for Committee deliberation. No matter what the official capacity of the witness or author may be, the publication of his testimony, report, or monograph by the Committee in no way signifies nor implies assent to, or approval of, any of the facts, opinions, or recommendations, nor acceptance thereof in whole or in part by the members of the Temporary National Economic Committee, individually or collectively. Sole and undivided responsibility for every statement in such testimony, reports, or monographs rests entirely upon the respective authors.

(Signed) JOSEPH C. O'MAHONEY,
Chairman, Temporary National Economic Committee.

TABLE OF CONTENTS

PART IV

PART V

SCHEDULE OF TABLES

APPENDIXES

PREFACE

In May 1939 one question dominated the T. N. E. C. hearings underlying this study—why the United States continued to have idle men and idle machinery, why the United States did not reach out for the economic security, the personal opportunity, the health, and the standard of living that were within reach.

That question has been changed. Millions of Americans now ask whether we have enough idle men and enough idle machines to produce planes, ships, guns, and other military requirements without reducing our standard of living. The question is posed currently in terms of butter and guns. Can we produce both guns and butter, or must we sacrifice butter to guns? And if sacrifice is called for, to what extent is it the result of the fear that after the defense program has ended swords will be beaten into plowshares and factories designed for guns will produce too much butter?

This study discusses the interrelationships of savings, investment, and the level of national income. It points out that the United States is a high-savings economy. Concentration has helped make it so. The distribution of income, the distribution of wealth, the incidence of the tax structure, the pattern of saving habits, the institutional if not automatic character of much of individual saving, and the large amount of saving by corporations result in a large volume of savings at high levels of national income. To preserve the level of national income that makes this large volume of savings possible, it is indispensable that current savings be invested or otherwise offset. The amount of income not currently spent for consumption—the amount of income saved—must currently be returned to the income stream. During the twenties a large volume of offsets to savings was forthcoming. By the end of the twenties many of these outlets were contracting, and the depression followed. By the end of the thirties a multitude of inconspicuous changes and technological advances, unheralded by fanfares of stock speculation and nonproductive security flotations, had raised the level of consumption to a new high, but the failure to develop offsets to saving in the volume required by our savings potentialities meant that our peak of consumption was reached without full employment.

The intoxication of a national defense program must not obscure the fact that the United States did not solve this peacetime problem. The problems of attaining full employment, an unbroken circulation of income, and a stabilized, high level of economic activity have been shelved, not solved. They will reappear. They may reappear under more dangerous political conditions. They will have to be solved. In the meantime, this study may perhaps contribute something to understanding whether we can have more guns and more butter and at what point it is necessary to decide between one and the other.

The body of this study was originally designed for publication in the form of chapters on savings and on investment in the summary report of the T. N. E. C. These chapters were rearranged and somewhat expanded on short order into this monograph. Some of the peculiarities of arrangement and some of the inadequacies of treatment may be explained on these accounts.

Herbert Goodman was of great assistance in the collection and analysis of data. Mrs. Marguerite Coker typed the manuscript.

Oscar L. Altman.

PART I

SAVING, INVESTMENT, AND NATIONAL INCOME

The Problem

Saving and investment are two of the most important factors determining the level of national income, the volume of production, and the amount of unemployment. The range of questions involved in these problems is suggested by the following list:

A. With respect to the flow of national income:

1. Why must all current income be spent for consumption or capital goods, and why do the amounts so spent affect the level of national income and employment?
2. Do hoarding and bank credit affect the level of national income and employment? How?
3. Does full employment depend upon an expansion of investment?

B. With respect to saving:

4. How much of the national income is saved and by whom?
5. Has taxation changed the volume and source of saving?

C. With respect to the flow of savings toward investment:

6. Through what channels do savings flow toward investment? What is the function of the capital markets?
7. Into what reservoirs and institutions do individual savings flow? Are these reservoirs and institutions concentrated? How are they controlled?
8. How much do corporations save? To what extent does their expansion depend upon tapping the savings of others through the capital markets?

D. With respect to investment:

9. How much is invested year by year for the economy as a whole, and in what directions?
10. Was the great depression brought on by a decline in investment? Was the recovery from 1933 to 1937 and after 1938 accompanied by an expansion of investment? What kind of investment?
11. What factors govern the level of investment? Has the rate of investment declined? If so, in what fields? Are the causes temporary or permanent?
12. How can opportunities for investment in private enterprises be expanded? How can opportunities for public investment be expanded?
13. Should the proportion of the national income used for purposes of consumption be increased? How?

The Materials

The Temporary National Economic Committee collected a large amount of material bearing on these questions. Witnesses before the committee testified that a large volume of investment was necessary, with present income levels and savings practices, to achieve a high standard of living and to eliminate unemployment. They discussed both the type and the advisability of changes in fiscal, monetary, and business policies needed to reduce the amount of investment required for full employment. There was a considerable body of testimony dealing with conditions affecting saving and investment in specific sectors in the economy. There was testimony, for example, on the effect upon the capital markets of savings by large corporations; upon the extent of concentration of savings through financial institutions, particularly life insurance companies, and upon the effects of this concentration; upon the economic results of the present legal requirements governing the employment of the assets of savings institutions; and upon the effects of concentration through the functioning of large business enterprises, the patent system, and various types of trade practices.

The materials bearing on saving, investment, and national income in the T. N. E. C. record were supplemented by some of the special studies prepared for the Committee. The studies of taxation, concentration of incomes, profits, life insurance, and financial characteristics of industry should be mentioned in this connection.[1]

Despite the large amount of information contained in the hearings and monographs, many important questions bearing upon the subject of this study remain almost untouched. For example, little is known of the criteria that in day-to-day business operations govern investment decisions. Data on the amount saved by individuals at different income levels are indispensable for any study of the concentration of savings; but the existing data need extension and refinement. The effects of taxation in increasing or decreasing concentration of income and wealth within the past two decades call for intensive investigation.

But perhaps the greatest difficulty in dealing with the relationships of saving and investment to national income and employment is reflected by the controversies that have buffeted the subject. Disagreement over alternative recovery and expansion policies, whether based on rational or irrational grounds, on knowledge or ignorance, has muddied the waters of analysis. The extent of this difficulty is not reduced because the words commonly used to discuss the problem are used in many different senses. For example, we think that buying a bond has the same effect upon employment as building a house (we call both investment). We too often imply that a business enterprise invests when it buys (or builds) plant and equipment, but that a government that does the same thing only spends; that individuals can save but governments cannot; and that hoarding by some does not result in the unemployment of others.

[1] Temporary National Economic Committee monographs: No. 3, Who Pays the Taxes? by Gerhard Colm and Helen Tarasov; No. 4, Concentration and Composition of Individual Incomes, 1918–37, by Adolph J. Goldenthal; No. 12, Profits, Productive Activities, and New Investment, by Martin Taitel; No. 15, Financial Characteristics of American Manufacturing Corporations, by Charles L. Merwin, Jr.; No. 20, Taxation, Recovery, and Defense, by Dewey Anderson; and No. 28, Study of Legal Reserve Life Insurance Companies, by Gerhard Gesell and Ernest Howe.

The Flow of Income

The modern economy is a money economy. It is characterized by an elaborate division of labor and the organization of economic activity through business enterprises, principally corporations. Capital goods—factories, railroads, machines, roads—play a dominant role. The economy draws upon large amounts of power and energy from coal, oil, and water.

The economic result of the interaction of these factors is the national income. The national income, which was approximately $74,000,000,000 in 1940, may be regarded both as the value of our productive activities and as the value of our claims against the results of these activities.

The majority of the claims to the national income were paid out in cash, in the form of wages, salaries, dividends, interest, rent, royalties, and entrepreneurial withdrawals; but several million individuals, farmers and hired hands, for example, received some of their income in kind, in the form of food and shelter; while some claims against the national income, some incomes, rested in the hands of business enterprises in the form of retained earnings. The sum of all these claims was equal to the value of all the goods and services produced during the year, minus the value of all raw materials and of capital equipment consumed in the process of production. Allowances for the consumption of capital equipment by wear and tear, depreciation, depletion, and, to some extent, obsolescence, are deducted in the calculation of the national income. Part of the flow of funds to business enterprises for their products is retained to cover these capital consumption charges, and the spending of these funds depends upon business decisions. The value of the goods and services produced, minus the value of all raw materials consumed, but before the deduction of depreciation and depletion allowances, is the gross national product.[2]

These incomes—individual, business, and governmental—are claims against all the goods and services produced. Ralph W. Manuel stated the relationship generally in these words:

> The money in our pay envelope and in our dividend check that we are accustomed to think of as payment isn't final payment at all, of course. It is only incontrovertible evidence of our right to claim in the markets final and absolute payment in useful goods and services. Our money economy—or perhaps I should say our device of distributing the product through money income—rests squarely upon the presumption that the recipients of that money income or those to whom they give or trade or lend it will bring it back in due course into the markets to claim their product. It is unworkable on any other basis.[3]

What does the average John Smith do with his income? Most of it is quickly spoken for. In the average family, rent, food, clothing, medical care, education, and recreation account for all the money that comes in. Income is quickly spent; nothing is saved. In 1935–36, for example, the 59 percent of all American families with incomes of less than $1,250 on the average spent more than they earned. The difference was accounted for by gifts, loans, and trenching upon past savings. All that Smith earns is used to employ labor

[2] These concepts are discussed in the Bureau of Foreign and Domestic Commerce, Income in the United States, 1929–35, Washington, 1936, pp. 1–20; Simon Kuznets, National Income and Capital Formation, 1919–35, New York, National Bureau of Economic Research, 1937, pp. 1–7; and Studies in Income and Wealth, vol. I, New York, National Bureau of Economic Research, 1939.

[3] Hearings before the Temporary National Economic Committee, Part 9, p. 3709.

and buy materials; and his income circulates and turns up in the pay envelopes of others.

But what of wealthier families? What does a wealthier John Smith II do with his savings out of a larger income? He may keep more dollars in his pocket; he may deposit them in a bank; he may pay an insurance premium; he may buy stocks and bonds; he may buy a house, or he may have a new house built; he may pay off his debts. When Smith II builds a new house or improves his old house or farm, he invests his savings himself. This results in the employment of men and in the payment of incomes to others in exchange for goods and services. But when Smith II places his savings in a bank, or pays an insurance premium, or in some other way transfers his cash savings to someone else, the investment of those savings ceases to be John Smith's problem and becomes the problem of our savings banks, our life insurance companies, and our other financial institutions.

In the United States today, the family that saves is generally not the family that invests. Though the amount of direct investment by individuals in farms, homes, and small enterprises is substantial, the bulk of their savings is transferred to savings or financial institutions. A larger proportion of individual savings is transferred to institutions now than before 1929. These, in turn, transfer them to others for investment.

Business enterprises retain substantial claims against the gross national product, partly labeled depreciation and depletion allowances and partly labeled retained earnings or undistributed profits. Those business savings that are invested are, for the most part, invested directly.

Government savings, in some periods, have been substantial, but they are quickly spent for public construction, i. e., invested, or they are transferred to others in the community through a retirement of debt.

How may income be used? In general, current income may be spent currently for goods and services, it may be locked away and hoarded, or it may be used to pay off bank debts. (Paying off any other kind of debt merely transfers the income from one person to another, presenting the second person with these three alternatives, but paying off bank debts reduces the volume of bank deposits.) When current income is currently spent—whether for consumption goods or for investment goods, for baby bottles or gas stations—the economy proceeds on an even keel. But if income is hoarded or used to pay off bank debts, deflationary forces start to operate. For "anyone who saves a part of his income and locks it away, thereby withdrawing it from circulation, to that extent exercises a depressing influence on prices, even though it may be infinitesimal as regards each individual." [4] This depressing influence extends to employment and output.

When Lauchlin Currie analyzed this problem in his testimony before the T. N. E. C., he said:

> If we think of the national income as a stream of goods and services, all represented by their dollar equivalents, we can take the next step and consider the factors that tend to keep the stream going uninterruptedly, and the factors that tend to obstruct and divert the stream. When a person earns wages and spends

[4] Knut Wicksell, Lectures on Political Economy, vol. II, New York, Macmillan, 1935, p. 11.

them for living expenses as rapidly as he receives them, there is no interruption. When a corporation takes in money in exchange for the goods it produces and disburses it at the same rate for wages, materials, power, and dividends, there is no interruption.

When, however, a part of the wages received or of money realized for sales is not disbursed but is retained by the individual either in the form of cash or of deposits, or is used to pay off debts, or even if it is invested in securities, there may be an interruption in the even flow of the money stream. Whether there is or is not depends on whether the money thus withdrawn is kept idle, or hoarded, or whether it is returned to the stream through disbursement for new plant and equipment, or for renovation or enlargement of existing plant, or offset by the expenditure of an equal amount.[5]

There is a close relationship between an even circular flow of money and full employment. An economic system that is operating at full employment can remain there if income recipients will currently buy what is currently produced. This is not an impossible condition; it does not require that housewives may not change from Ivory soap chips to Chipso, and that children may not turn from scooters to bicycles. Unless people are forced to buy whatever is produced—for example, by paying them in claim checks which must be traded against goods in a given time—there will always be some dislocations, there will always be too much of some commodities and too little of others at going prices. But these changes in demand can be met and solved with relatively minor price readjustments and redirections of output.[6] The difficulty in maintaining full employment, once it has been reached, is rather that at times income recipients prefer not to buy any new goods. They prefer to hoard or to pay off bank debts. To complicate the matter, the prices of many of the goods that are most difficult to sell at such times are inflexible; while the expectation that any price reduction will be followed by another and yet another puts additional pressure upon flexible prices. As a result, more income may be hoarded, or more income may be used to pay off bank borrowings. A deflationary spiral has been set in motion.

The preceding discussion has been in terms of the flow of income through the community. An unobstructed and continuous flow of income will maintain any level of employment. But only at high levels of income will an unobstructed and continuous flow maintain full employment.

The explanation of this difference revolves about those uses of income suggested by the terms saving and investment. These terms will need definition, however, since they are commonly used in more than one sense. Saving may be taken as the difference between all income (including depreciation funds) arising from production, and the amount spent for consumption: for the Nation as a whole, savings would therefore be equivalent to gross national product minus consumers' outlay. Investment may be taken as all outlay other than consumers' outlay. To define savings and investment further it is necessary to specify what particular kinds of goods and services, what particular kinds of outlays, fall in each class.

Both investment and consumption involve spending—spending for pencils, turbines, movies, vocational training, factories, and spinach. There is obviously no hard and fast line between consumption and investment. All of the distinctions assume that human beings are the end and not the means of economic activity. We do not commonly consider false teeth an investment, yet in a slave economy

[5] Hearings before the Temporary National Economic Committee, Part 9, pp. 3521-3522.
[6] Cf. D. H. Robertson, Banking Policy and the Price Level, London, King, 1926, pp. 6-18.

false teeth for a laborer might be considered no less an investment than an automatic stoker for a coal furnace. For many families the purchase of household furniture represents the largest single investment they ever make, yet the most exhaustive study of savings ever made in this country classifies such outlays as consumption.[7] The distinctions between consumption and gross investment are thus partly logical, partly purposive, and partly conventional.

For the purposes of this study, following the studies of Simon Kuznets, it is convenient to make the term gross investment include—

Flow of finished producers' durable commodities—buildings, dynamos, trucks, etc.; in general, commodities that, without marked change and retaining their essential physical identity, are ultimately employed by business agencies in the process of production more than 3 years.

Flow of residential buildings.

Net change in stocks of commodities in the hands of enterprises, including raw materials, semifinished products, and finished commodities.

Net change in gold and silver stocks.

Net change in claims against foreign countries.[8]

This definition of gross capital formation is the one most generally followed, but from some points of view it is clearly too narrow. It disregards the fact that "the most important investment of all is investment in the health, intelligence, and character of the people." [9] From the point of view of postponing expenditures, it should occasionally be broadened to include such consumers' durable goods as furniture, jewelry, passenger cars, and the like.[10]

In general, however, gross capital formation (investment) so defined includes the bulk of the outlays in modern society that are regarded as readily postponable, or that are subject to some degree of profit calculations.

By defining investment, and therefore consumption, in this way, one very rough and general distinction appears. Consumers' goods, on the whole, will be purchased whenever individuals have adequate incomes. If families have incomes they will buy food, clothing, and entertainment, and they will pay their rent. But investment or capital goods will not necessarily be bought even if families and business enterprises have adequate incomes.

The difference between the gross national product and gross capital formation (investment) represents consumption. Accordingly, the difference between current income before deduction of depreciation and depletion allowances (whether paid out or retained in business enterprises) and outlays for consumption represents saving. But though, according to these definitions, saving is equal to investment—as in an accounting sense it must be—the important question in considering the level of income and employment is at what level the two are equal. The two are equal when the level of national income is $40,000,000,000—and there are 15,000,000 unemployed—and they would be equal if the level of national income were $100,000,000,000—when no one would be unemployed.

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[7] National Resources Committee, Consumer Expenditures in the United States, 1935–36, Washington, 1939, p. 22.

[8] National Income and Capital Formation, 1919–35, New York, National Bureau of Economic Research, 1937, pp. 34–39. Cf. the discussion by M. A. Copeland and by Walter Salant in Studies in Income and Wealth, New York, National Bureau of Economic Research, 1939, vol. III, pp. 295–300, 309–311.

[9] A. C. Pigou, Socialism versus Capitalism, New York, Macmillan, 1939, p. 138.

[10] The life of a piano, for example, may be many times longer than that of a machine tool. But the length of time for which a present outlay prepays services is surely not a sufficient criterion of investment. If it were, should not outlays for vocational training be classified as investment? On the other hand, even if outlays for consumers' durable goods are considered as investment, a substantial part of the funds used to pay for them is ad hoc and would not be available if the outlays were not to be made.

How saving is at all times kept equal to investment determines whether income and employment are increasing, decreasing, or just holding their own. Suppose an individual does not spend all of his income on consumption but keeps part of it in cash. This individual, from his own point of view, is saving. But unless this income is used to purchase investment goods and services, from the point of view of the economy the individual is hoarding. Since the community's current income is just large enough to take the current output off the market—though in many cases individuals may not know exactly how large their incomes for the year will be after taxes and the like—a decrease in expenditures through hoarding makes it impossible to sell the output at current prices. Business enterprises have to reduce output, or prices, or both. Employment is curtailed. The rate of operations is decreased. Many of the persons who are currently saving—those whose savings are being invested as well as those whose savings are being hoarded—find that with the changed conditions their income falls. They find that the saving they had expected to realize with their previous income must now be curtailed. The reasons why savings should be affected in these ways are clear. Business enterprises take inventory losses. Profits decline or turn into losses. The incomes of wage and salary workers are reduced. Unemployed workers and bankrupt and other business enterprises are forced to sell their possessions, thus absorbing a good part of the savings made by more fortunate individuals. Many people go into debt to pay for food, rent, clothing. In these ways the amount of new saving decreases, while an increasing amount of new saving is canceled by debts or by drawing upon old saving. The process of contraction, in other words, is not a voluntary one. The process of contraction will, in fact, continue until the whole community is forced to reduce its saving to an amount that can currently be absorbed. Saving decreases both in dollar amount and in proportion to national income. Thus depression forces people to reduce their saving by the poverty and distress it creates.[11]

A certain amount of income always goes into hoards. There is always a certain amount of income which for the time being is subtracted from current income. Yet there have been times when the community has operated at very high levels of employment and output. How may this be explained? In the first place, hoarding changes greatly in relative importance during the business cycle. At some stages of the business cycle current hoarding may be more than offset by dishoarding. But more important is the fact that there has been in the past an important counter-force to hoarding: the creation of new money by the banking system. Some individuals may have been reducing the income stream by putting money into hoards, but others were adding to the income stream by spending the new money they persuaded the banks to create for them.

In some periods whatever hoarding takes place is exactly offset by the creation of new money. The income stream remains unchanged, and subject to the minor economic dislocations which always occur, the economic machine continues to operate at its current level. But bank credit and hoarding do not usually maintain such a nice balance.

[11] See J. M. Keynes, The General Theory of Unemployment, Interest, and Money, New York, Harcourt, Brace, 1936; Oskar Lange and F. M. Taylor, On the Economic Theory of Socialism, Minneapolis, University of Minnesota Press, 1938, pp. 108–109.

When bank credit increases during the upswing, it tends to be greater than hoarding. When the new money (bank credit) more than offsets hoarding, the income stream swells, and the level of economic activity rises. The volume of investment increases, and the volume of savings increases correspondingly. In a situation of this type it is precisely the injection of new purchasing power into the system that makes it possible for hoarders to subtract current purchasing power without throwing the economic machine into lower gear. But the fact that hoarding goes on reduces the stimulative effect of the bank credit.

This is not the place for any extended discussion of the role of bank credit.[12] The subject is mentioned here because without it no discussion of saving and investment can be complete. Bank credit—new money—may offset hoarding in some periods, maintaining the continuity of the income stream. The community pays a high cost, however, for its bank credit mechanism. Its motor is erratic. On the one hand, it may throw deflation into a power dive. For the bank credit mechanism may, and in periods of downswing does reinforce hoarding. Part of the current income stream is diverted to pay off bank loans, and the supply of money decreases. The balance of current income cannot take all the currently produced output off the market at current prices. Prices fall. Output decreases. Credit requirements become increasingly stringent. The first cycle is repeated; and the economic recession becomes a rout. On the other hand—and this is more important at the present moment—it may accelerate the climb into rising prices and inflation. Financing both public and private expansion with bank credit swells the income stream, increasing the volume of funds directed to consumption and to investment. At first this will expand output, and produce more butter and more guns. But if the increasing national defense efforts prevent a corresponding expansion of the output of consumption and the usual investment goods such as construction, equipment, and inventories, prices will rise. The price rise will become serious if credit is used after full employment is reached. The remedy at that point will be to prevent the increases in the income stream resulting from defense outlays from expanding consumption and private investment. This may require heavier taxation, stimulation of the volume of savings to be exchanged for Government securities, and rationing.

Consumption, Investment, and National Income

All the witnesses before the Temporary National Economic Committee agreed that savings must be returned to the income stream—spent for investment goods or in other ways offset—if the level of national income is to be maintained. Alvin H. Hansen stated this fundamental proposition as follows:

> It is highly essential that all that part of the current flow of income which is not expended on consumption goods, namely that part which is saved, shall be expended either directly by the saver himself or indirectly through a borrower on new plant and equipment of some sort. If the amount which is saved is large, as

[12] See, for example, D. H. Robertson, Banking Policy and the Price Level, London, King, 1926; Hearings before the Temporary National Economic Committee, Part 9, pp. 3706–3726 (testimony of Ralph A. Manuel) and pp. 4066–4079 (testimony of A. A. Berle, Jr., with respect to the possibility of using bank credit, through capital credit banks, to achieve both full employment and useful investment); and, with respect to one possible direction of banking reform, Henry Simons, A Positive Program for Laissez-Faire, Public Policy Pamphlet No. 15, University of Chicago Press, 1934;

it is likely to be at a high income level, it is necessary that equally large outlets be available for these savings in equipment and plant expansion, and in residential and public construction.[13]

But the witnesses went further. They pointed out that the most important factors that govern the rate of saving—the level of national income, the distribution and concentration of income, the incidence of the tax structure, the level of interest rates—bring forth large volumes of savings in good years. If a high level of national income is reached, a large volume of savings will arise, and this will have to be currently invested or offset to realize and maintain both the level of national income and savings. In view of these relationships it is clear that, with given patterns of saving in relation to national income, a large volume of investment or other offsets is required to attain full employment.

The rate of saving at any given level of national income may have changed since 1929. In 1928 and 1929, for example, the extraordinary profits, both realized and unrealized, that were being made in the stock market induced many people to withdraw large sums from their brokerage accounts for consumption purposes, and encouraged many to save less out of their current income. The rising stock market both reduced the initial volume of saving and transformed the savings of some into the consumption of others.[14] Consumption expenditures from these sources may have increased (and savings therefore decreased) by as much as two or three billion dollars. This shift probably did much to sustain prosperity after some of the basic investment outlets had begun to shrink toward the close of the 1920's.[15]

The amount of savings in proportion to national income has probably increased since 1929, moving in the direction of the pre-boom relationship. Higher personal and corporate income taxes have tended to decrease the volume of savings; but pay-roll taxes to finance the social security program, the high rate of internal financing, especially by large business enterprises,[16] and the absence of spectacular stock market booms have had the opposite tendency.

It is important to determine the effect of these factors on the rate of saving. If "we save a larger proportion of our income, we would have to have a correspondingly larger volume of saving-offsetting expenditures. If we save a smaller portion of our income, we will have to have a smaller volume of saving-offsetting expenditures." [17]

Many weapons may be used simultaneously to increase the volume of employment and national income when they are low.[18] They include stimulating investment, increasing consumption, and speeding the flow of savings toward investment. An analysis of saving and investment does not inevitably call for a larger program of investment. Analysis merely attempts to describe how saving and investment affect the flow of income and employment. Public policy

[13] Hearings before the Temporary National Economic Committee, Part 9, p. 3501.

[14] J. M. Keynes has suggested that "with a 'stock-minded' public, as in the United States today, a rising stock-market may be an almost essential condition of a satisfactory propensity to consume." The General Theory of Employment, Interest, and Money, New York, Harcourt Brace, 1936, p. 319. The New York Times has commented that "any slump in the stock market makes itself felt in the same evening at night clubs" (November 23, 1937).

[15] Hearings before the Temporary National Economic Committee, Part 9, p. 3537.

[16] This is discussed, infra, pp. 50–58; see the comment by J. M. Keynes, The General Theory of Employment, Interest, and Money, New York, Harcourt Brace, 1936, p. 128.

[17] Hearings before the Temporary National Economic Committee, Part 9, p. 3537.

[18] J. M. Keynes, The General Theory of Employment, Interest, and Money, New York, Harcourt Brace 1936, pp. 313–332.

requires full employment, but there is grave doubt whether in normal times it requires such a large and relatively inflexible pattern of saving.

Saving and investment have been singled out for so much discussion in recent years because they isolate two of the most dynamic factors that preserve, obstruct, or facilitate the flow of income and the volume of employment. But saving and investment are not the only factors that are involved. Price controls, cost-price relationships, fiscal and monetary policies, the structure and inertia of the bureaucracy in both business and government, and other factors affect the level of employment and output. To use an analogy suggested by Gerhard Colm, saving and investment resemble the gasoline mixture fed into an automobile motor: the more gas, the more power. But whether the motor operates efficiently or not depends upon whether the motor is well made, whether the spark gaps are of the right length, and whether the parts are in good working order.

PART II

VOLUME AND COMPONENTS OF SAVING

Gross saving and gross investment are equal to the difference between the gross national product and consumption; net saving and net investment are equal to the difference between the national income produced—gross national product minus the value of capital used up in the process of production—and consumption.

Though the amount of saving is equal to the amount of investment, and may ideally serve as an independent calculation of the latter, estimates of saving have a more important function. They tell us who saves, in what form savings are made, and what paths savings must take to travel into investment.

Different parts of the savings stream are more important in analyzing some problems than others. "In some studies, the matter of primary interest is the relation between individual income and individual saving; in others, it is the total amount of savings, which includes, in addition, business savings and savings of public authorities. For the study of capital formation as a whole, it is the net total of all savings that is important. For the problem of the price of credit, it is of special importance to have information regarding the stream of money passing through the capital market; while for the study of capital formation as a whole, the total of funds available for investment, including funds not passing through that market may be of more interest." [1] Clearly, there are numerous savings problems that require study, but the available data and space permit examination of only a few of the more important ones.

The chief difficulties in determining the volume of savings are the lack of continuous data and the scattered character of the data that are available. Many savers do not keep records of current income or of consumption expenditures. Corporations in general keep relatively good records, but the reported savings shown by their accounting methods are likely to show great distortions during periods of depression and rapid price changes. The data on savings by Federal, State, and local governments have been extended in recent years, but still leave much to be desired. The data on savings by family households were greatly improved by the National Resources Committee's studies of consumer incomes and expenditures in 1935–36,[2] but further data are required. For example, intensive studies are needed of the savings in high income brackets, of changes in savings patterns through the business cycle, and of savings and dissavings separately. Another recent study has supplemented the National Resources Committee's income-expenditure approach by

[1] League of Nations Committee of Statistical Experts, Statistics Relating to Capital Formation, Geneva, 1938, p. 8.

[2] Consumer Expenditures in the United States, 1935-36, Washington, 1938. This master study is being supplemented by regional studies, some of which have already been published.

analyzing the volume and components of savings with a balance sheet approach, that is, estimating savings from changes in the assets and liabilities of different classes of savers.[3] Despite all the recent work that has been done on savings, however, it is clear that estimates of savings leave much to be desired.

Furthermore, the character of the data does not permit adequate adjustment for such distortions as capital gains, capital losses, and other revaluations. These do not reflect current saving or dis-saving; they only record changes in the valuation of capital goods embodying past savings. But while capital gains and capital losses must be eliminated in calculating the volume of savings, they may nevertheless affect the current rate of saving. For example, in a period when stock and bond prices are rising and there is a substantial volume of capital gains (realized or unrealized), current income may be spent more freely. The existence of capital gains under such conditions may raise the proportion of current income that is spent for consumption.

Volume of Saving

The volume of saving may be investigated at different levels of "grossness":

First, the study may distinguish between those who save and those who do not. Some save, others draw upon past savings, while others go into debt. The amount saved by the community is the algebraic sum of these savings and dis-savings, and this amount is significant as a measure of what the community is able to set aside. But the savings and the dis-savings of relatively homogeneous groups are necessary for a better understanding of savings trends, redistributions of the ownership of various types of property—farms, for example[4] — and differential movements of various types of interest rates. Particularly in times like the present, savings and dis-savings patterns help to explain the currents of purchasing power and price movements.

Secondly, the study may analyze gross or net savings, regardless of whether it distinguishes between savers and dis-savers. Estimates of gross savings, i. e., estimates before allowances for depreciation and depletion, are more accurate than estimates of net savings. The latter are subject to all the errors and limitations of the former plus those additional ones involved in estimating the amount (and the significance) of depreciation and depletion. Estimates of gross savings are more significant than those of net savings. For some groups the concept of net saving is a logically defensible but not a very useful one. Families and, to a lesser extent, governmental bodies are not interested in depreciation and net savings separately. They are rather interested in the volume of funds available after consumption and ordinary expenses. The total of these funds, not depreciation and net savings taken individually, influence expenditure policy.

Gross savings are more significant than net savings so far as the flow of national income and the level of economic activity are concerned. The volume of gross savings indicates how much is being subtracted from the current flow of national production, how much is not being spent for consumption goods. It states how much must

[3] R. W. Goldsmith, with the assistance of Walter Salant, "Volume and Components of Saving in the United States, 1933-37", Studies in Income and Wealth, New York, National Bureau of Economic Research, 1939, vol. III, pp. 215-315.

[4] See J. C. Ellickson, "Savings in Land Ownership," Land Policy Review, November 1940.

be spent on other than consumption goods if the level of national income is to be maintained.

The available data permit analysis of both gross and net savings, but, except for corporations, they do not permit analysis of savings and dis-savings separately.

The gross savings in the United States during the past two decades are best measured by the amount of gross capital formation (gross investment). Savings measured in this way represent the end result for the community as a whole of individual, business, and governmental decisions to withhold income from consumption, to hoard, and to expand bank credit.

The volume of gross capital formation, as estimated by Simon Kuznets, was 20.3 billion dollars in 1929. This amount was 1.8 billion dollars less than the 22.1 billion dollars saved in 1920, but 1.8 billion dollars greater than the 18.5 billion dollars saved in 1940.[5] (See table 1.) These amounts are in dollars of different purchasing power. Adjustment for price indicates that real gross capital formation in 1929 was one-third greater than in 1920 and perhaps 10 percent greater than in 1940.

TABLE 1.—*Gross national product and capital formation, 1919–40*

[In billions of dollars]

Year	Gross national product	Gross capital formation		Year	Gross national product	Gross capital formation	
		Amount	Percent of gross national product			Amount	Percent of gross national product
1919	68.8	19.3	28.1	1930	82.7	13.7	16.6
1920	82.8	22.1	26.7	1931	64.8	8.5	13.1
1921	66.1	11.5	17.4	1932	47.1	3.1	6.6
1922	67.2	13.3	19.8	1933	46.0	3.7	8.0
1923	78.2	18.2	23.3	1934	55.2	5.5	10.0
1924	79.8	15.2	19.0	1935	61.6	9.4	15.3
1925	83.4	19.2	23.0	1936 [1]	72.7	13.8	19.0
1926	88.8	19.0	21.4	1937 [1]	80.0	17.5	21.9
1927	86.8	18.2	21.0	1938 [1]	70.3	12.7	18.1
1928	90.1	17.8	19.8	1939 [1]	77.0	15.6	20.3
1929	93.6	20.3	21.7	1940 [1]	82.0	18.5	22.6

[1] To date (December 1940) Kuznets has estimated commodity products through 1938 and service outlays through 1935. All later data represent independent estimates.

Source: Simon Kuznets, National Income and Capital Formation, 1919–35, New York, National Bureau of Economic Research, 1937, pp. 8, 40, and Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932–38, New York, National Bureau of Economic Research, 1939.

Gross savings, as measured by the volume of gross capital formation, fluctuate sharply. They reached low points of $3.1 billions in 1932 and $3.7 billions in 1933; the high in 1929 was six and one-half times as great, and the high in 1940 was six times as great as the low in 1932.

The volume of gross saving varies with the amount of gross national product, but it is a larger proportion of that product at high levels than at low. In 1929 gross capital formation was 21.7 percent of a gross national product of $93.6 billions; in 1932 it was 6.6 percent of a product of $47.1 billions; and in 1940 it was 22.6 percent of a product of $82.0 billions.

[5] The components of gross capital formation are set forth in appendix XV. Kuznets has not yet published estimates of gross capital formation for 1939 and 1940. Estimates for those years used here were prepared independently.

A large volume of gross savings is thus associated with a high level of gross national product, and the proportion of income saved tends to increase with an increase in income. The years of prosperity in the twenties, however, show a significant deviation from this pattern. A relatively stable volume of gross capital formation in those years was associated with increasing levels of gross national product, indicating that the proportion of income consumed was increasing.

Somewhat different measurements of these magnitudes were submitted to the T. N. E. C. by Lauchlin Currie, who testified with respect to those expenditures that provide an outlet for or offset to savings.[6] Currie's measurements (see table 2) indicate that offsets to saving vary with gross national income and that "the proportion of income saved tends to increase with an increase in income." [7] His measurements indicate that in 1923–28 consumption was apparently increasing relative to income, suggesting that the rising stock market "was a force in the late twenties tending to hold down saving relative to income, or increase consumption relative to income." [8]

TABLE 2.—*Relationship between offsets to saving and national income, 1921–39*

[Amounts in billions of dollars]

Year	Offsets to savings [1]	Adjusted offsets to savings [2]	Gross national income [3]	Percent of adjusted offsets to national income	Year	Offsets to savings [1]	Adjusted offsets to savings [2]	Gross national income [3]	Percent of adjusted offsets to national income
1921	9.5		63.8		1931	8.4	9.5	63.9	14.9
1922	11.9	10.9	64.3	17.0	1932	2.3	4.7	47.4	10.0
1923	17.0	14.9	74.8	20.0	1933	2.9	2.6	46.2	5.7
1924	13.3	14.8	75.2	19.6	1934	5.6	4.5	55.8	8.0
1925	17.0	15.5	79.7	19.5	1935	10.0	8.2	61.7	13.4
1926	16.8	16.9	84.8	19.9	1936	14.3	12.6	[4] 71.4	17.6
1927	15.3	15.9	82.7	19.2	1937	14.3	14.3	[4] 79.4	18.0
1928	16.0	15.8	86.2	18.3	1938	[5] 8.2	[5] 10.6	[4] 70.8	15.0
1929	18.0	17.2	90.0	19.1	1939	[5] 14.6	[5] 12.0	[4] 75.7	15.9
1930	11.3	14.0	79.8	17.5					

[1] This series is a measure of the outlets for or offsets to savings. The components of the series are given in appendix XVI. The rationale of the components, and the sources of the data are more fully described in Hearings Before the Temporary National Economic Committee, Part 9, pp. 3520–3538 and 4010–4018.

[2] Consists of 60 percent of the offsets of the current year plus 40 percent of the offsets of the preceding year.

[3] The composition of this series is explained in Hearings Before the Temporary National Economic Committee, Part 9, p. 4018: "Figures for 1921 to 1935 are derived from data published in National Income and Capital Formation, by Simon Kuznets of the National Bureau of Economic Research. From the published figures of gross national product was deducted imputed rents and gross savings of Government, so as to make them comparable with the 'income-producing expenditures' series. Figures for 1936 to 1939, inclusive, are estimates based on the national income data of the Department of Commerce."

[4] Estimated independently.

[5] Preliminary.

Source: Hearings Before the Temporary National Economic Committee, Part 9, p. 4122. Prepared by Lauchlin Currie.

[6] His figures, like those of Kuznets', are gross in that they include all outlays on plant, equipment, and residential construction, regardless of whether these outlays may be considered as replacement or expansion. They represent estimates by George Terborgh and others. Currie's offsets include four other series: Change in inventories, net foreign balance, change in consumer credit, and net Government contribution to purchasing power, which measures the difference between the outlays of public bodies that add to disposable cash income and the receipts that represent drafts upon disposable cash income. (The character and sources of the series are given in appendix XVI.) Increases in the volume of consumer credit, and public borrowing for other than investment purposes, represent dis-saving (and hence, offsets to savings). Hence Currie's offsets to savings series, by including both gross savings in certain areas (i. e., the consolidated gross savings of savers and dis-savers) and dis-savings in other areas (savings that are offset) conceptually measure savings on a higher level of "grossness" than could be attained with outlays for gross capital formation alone.

[7] Hearings before the Temporary National Economic Committee, Part 9, p. 3537.

[8] Hearings before the Temporary National Economic Committee, Part. 9, p. 3537.

Components of the Savings Stream

Data on the components of the savings stream, which must be estimated directly, are subject to much wider limits of error than those on over-all savings, which may be estimated indirectly from over-all investment. Dangers in using data on savings components arise from three sources: difficulties in calculation, in the use of residuals, and in interpretation. Some of the difficulties in calculation arising from the inadequacy of the data and the presence of distorting revaluation entries have already been mentioned. Errors on these accounts are not compensating; and indeed, since residuals must be used somewhere in the calculations, such errors become particularly troublesome. Finally, the interpretation of results, even with the best data, raises problems. For example, shall unincorporated enterprises be considered as individuals or as business enterprises? Both choices are unsatisfactory. The same question arises with small corporations. The following results are therefore presented as nothing more than a rough approximation.

Three major components of the gross savings stream may be distinguished: business enterprises, governments, and individuals and others. Savings by the first two components have been calculated directly; savings by individuals and others are the difference between gross savings (Kuznets' estimates of gross capital formation) and savings by business enterprises and governments. The calculations themselves appear in appendices I and II; the results are as follows:

In the period 1925–29, gross savings averaged 18.9 billion dollars per year. Business enterprises accounted for 36 percent of these savings, governments for 10 percent, and individuals and others for 54 percent. Since the great depression the relative importance of governments and individuals has changed. In 1935–39, gross savings averaged 13.8 billion dollars per year. Business enterprises accounted for 35 percent, and individuals and others for 66 percent. Governments dis-saved slightly.

Concentration of the Components of the Savings Stream

Each of the components of the savings stream is highly concentrated. In each of the savings components—individuals, trusts, business enterprises, and governments—a very small proportion of the units is responsible for the major part of the savings.

There is no acceptable, detailed over-all picture of the concentration of savings sources. There is, unfortunately, no simple way of determining the concentration of the total savings stream from the concentration of each of its sources, since many persons are found in more than one component. The available data, however, do indicate roughly that individuals in the higher income brackets, who are responsible for the major part of the savings by individuals, are also the beneficiaries of (though they may not in all cases be charged with) the bulk of the savings by trusts and business enterprises. In short, as Carl Snyder has remarked, our economic and social system has placed "capital accumulation [saving] largely in the hands of a relatively few individuals." [9]

[9] Capitalism the Creator: The Economic Foundations of Modern Society, New York, Macmillan, 1940, p. 7.

Savings are concentrated because incomes are concentrated; and incomes are concentrated principally because the income from property is highly concentrated. On the average the difference between a medium-sized income and a large one does not arise from work—salary; but from property—dividends, interest, rents, etc., and the advantages that these make possible. The conclusions of A. C. Pigou, though drawn for Great Britain, are equally applicable to the United States: "Unequal distribution of incomes from property makes for unequal distribution of incomes as a whole, not only directly through its existence, but also indirectly through its effects on other incomes"; and that, furthermore, "inequality of income in one generation is * * * also a cause of inequality in the next generation." [10]

CONCENTRATION OF SAVINGS BY INDIVIDUALS

The concentration of individual saving within the higher income brackets is so striking that it needs no extended discussion. The most complete, and, fortunately, the most recent study of consumer incomes and expenditures, indicates that in 1935–36 the consumer units (families with one or more individuals) with incomes of less than $1,250 per year—59 percent of all American units—on the average did not save.[11] Families with incomes of less than $1,250 per year consumed more than they earned, the difference being accounted for by debts, trenching upon capital, and gifts. Above this point savings increased rapidly. At $1,750–$2,000 per year savings represent 5 percent of income; at $4,000–$5,000, 21 percent of income; at $15,000–$20,000, 40 percent of income. Above the level of $20,000 per year the study indicates that 51 percent of income was saved. The 110,000 families and individuals with incomes of $20,000 and more contributed 40 percent of the total savings of $6 billions.[12] And the 927,000 families and individuals with incomes of more than $5,000 contributed 79 percent of the total savings of $6 billions. (See table 3.)

The amount that families (including single individual families) save varies with the amount of income they receive. For example, in 1935–36 the 110,000 families with incomes of $20,000 and more saved, on the average, 50 percent of their income; but if the proportion of families with very high incomes in this group had been greater, the average percentage of income saved by the group would likewise have been greater. Similarly, if the average income in the group were unchanged, but the number of people and therefore the aggregate income in the group increased, the amount saved would have been larger.

[10] Socialism versus Capitalism, London, Macmillan, 1939, pp. 17, 21–22. See also the testimony of Robert H. Jackson in hearings before the Senate Committee on Finance, 74th Cong., 1st sess., on the Revenue Act of 1935, pp. 177–182, and Josiah Wedgwood, The Economics of Inheritance, Harmondsworth, Penguin, 1939.

[11] This applies to all consumer units, except that it excludes residents in institutional groups. One-individual families begin to save at incomes less than $1,250: men, above incomes of $1,000; women, above incomes of $750. National Resources Committee, Consumer Expenditures in the United States, 1935–36, Washington, 1939, pp. 81–82.

[12] These conclusions for incomes of more than $20,000 must be interpreted with caution, since, as the National Resources Committee explained, "the number of schedules for high income families was very small" and it was necessary "to rely almost entirely upon extrapolations based on data for the lower income groups." Consumer Expenditures in the United States, 1935–36, Washington, 1939, p. 55, and appendix B, pp. 136–137.

TABLE 3.—*Aggregate income and savings of American consumers* [1] *by 15 income levels, 1935–36*

Income level	Number of families and single individuals	Aggregate income (millions)	Savings		Percent of total savings
			Amount (millions)	Percent of income	
Under $500	6,710,911	$2,061	−$800	−38.8	−13.4
$500–$750	5,771,960	3,615	−382	−10.5	−6.4
$750–$1,000	5,876,078	5,130	−254	−4.9	−4.3
$1,000–$1,250	4,990,995	5,589	−97	−1.7	−1.6
$1,250–$1,500	3,743,428	5,109	95	1.9	1.6
$1,500–$1,750	2,889,904	4,661	196	4.2	3.3
$1,750–$2,000	2,296,022	4,214	245	5.8	4.1
$2,000–$2,500	2,958,611	6,572	587	8.9	9.8
$2,500–$3,000	1,475,474	4,005	482	12.0	8.1
$3,000–$4,000	1,354,078	4,599	742	16.1	12.4
$4,000–$5,000	464,191	2,045	434	21.2	7.2
$5,000–$10,000	595,908	4,092	1,218	29.8	20.4
$10,000–$15,000	152,682	1,747	679	38.9	11.4
$15,000–$20,000	67,923	1,175	473	40.2	7.9
$20,000 and over	110,135	4,645	2,360	50.8	39.5
All levels	39,458,300	59,259	5,978	10.1	100.0

[1] Includes all families and single individuals but excludes residents in institutional groups.

Source: National Resources Committee, Consumer Expenditures in the United States, 1935-36, Washington, 1939, table 8, p. 48.

Individuals in the savings brackets do in fact receive more income in prosperity than in depression.[13] This is one reason why savings increase faster than national income on the upswing. A. J. Goldenthal has studied the percentage of individual income received in the upper income brackets with the help of Federal income tax data. He found that the percentage of total individual income (including net capital gains and losses) received by the highest 1 percent of income recipients, rose from 13.0 percent in 1923 to 19.3 percent in 1928 and 18.5 percent in 1929, and stood at 13.3 percent in 1937 after having fallen sharply during the depression.[14] The percentages do not show any significant trend over the two decades. Goldenthal noted, however, that they had a cyclical pattern, and that "income concentration increased during periods of business expansion and declined during periods of business contraction." [15]

If the percentage of total income received by the highest 1 percent of income recipients is adjusted for capital gains and capital losses,[16] which affect the upper income groups in largest measure, the cyclical pattern becomes blurred. The highest 1 percent, on this calculation,

[13] Though the amount of income received in the upper income brackets increases, the composition of national income does not change. Employee compensation (salaries, wages, work-relief wages, social security contributions of employees, and other labor income) constitutes about two-thirds of income paid out, with little regard to movements of the business cycle; while interest and dividends likewise remain steady, constituting slightly less than one-sixth of income paid out. See the national income studies published from time to time in the Bureau of Foreign and Domestic Commerce, Survey of Current Business (for example, the issue of June 1940).

[14] Temporary National Economic Committee Monograph No. 4, Concentration and Composition of Individual Incomes, 1918–37, p. 16. Because of changes in the reporting of capital gains and losses, 1937 is overstated in comparison with earlier years. The level of these percentages is understated because the data on the higher incomes are not corrected for nonreporting or under-reporting of income. Whether this understatement is consistent from year to year, or whether it changes with the amount of income subject to tax (which is allied to the business cycle) and with the amount of tax liability cannot be determined. Cf. Goldenthal's opinion that the understatement is consistent, and that it does not diminish the value of the data for the analysis of year-to-year data. Ibid., p. 15.

[15] Temporary National Economic Committee Monograph No. 4, Concentration and Composition of Individual Incomes, 1918–37, p. 18.

[16] Goldenthal's calculations are based upon a definition of income which includes capital gains and losses because these "do influence the shares of the Nation's output of goods and services which individuals may claim and constitute a source from which many individuals may be said to acquire additions to their other income." Temporary National Economic Committee Monograph No. 4, Concentration and Composition of Individual Incomes, 1918–37, footnote 3, p. 10.

received an average of 14.2 percent of total income in 1927–29, compared with a maximum of 12.8 percent in the period 1918–1924 and 12.2 percent in 1934 and 1935 (table 4). The percentages shift from year to year in accordance with the business cycle, but the increases in prosperity and the decreases in depression are not large enough to be statistically significant.

TABLE 4.—*Amount of income and share of total individual income received by the highest 1 percent of income recipients, 1918–37*

[Income in billions of dollars]

Year	Income including capital gains and losses [1]		Income excluding capital gains and losses [2]		Year	Income including capital gains and losses [1]		Income excluding capital gains and losses [2]	
	Amount	Percent of total	Amount	Percent of total		Amount	Percent of total	Amount	Percent of total
1918	$7.2	12.8	$7.1	12.1	1928	$15.3	19.3	$11.1	14.3
1919	8.6	13.4	8.1	12.3	1929	15.0	18.5	11.4	14.0
1920	8.4	12.4	8.0	11.6	1930	10.0	14.6	9.9	13.5
1921	7.2	13.6	7.0	12.6	1931	7.4	13.7	8.1	13.3
1922	8.2	14.2	7.6	12.8	1934	6.3	12.7	6.5	12.2
1923	8.7	13.0	8.1	11.9	1934	6.5	13.0	6.5	12.2
1924	9.6	14.2	8.6	12.5	1935	7.3	13.4	7.0	12.2
1925	11.9	16.4	9.6	13.2	1936	9.3	14.5		
1926	12.1	16.2	10.2	13.5	1937	9.7	13.3		
1927	12.8	17.2	10.6	14.1					

[1] From Temporary National Economic Committee Monograph No. 4, Concentration and Composition of Individual Incomes, 1918–37, by A. J. Goldenthal, table 1, p. 16. For a discussion of reasons for the inclusion of realized capital gains and losses, see ibid., footnote 3, p. 10.

[2] Computed from ibid., table 10, p. 37, and table 12, p. 39, by eliminating net capital gains and losses from both total individual incomes and the incomes of the highest 1 percent.

Source: Temporary National Economic Committee Monograph No. 4, Concentration and Composition of Individual Incomes, 1918–37, by A. J. Goldenthal. The income figures used represent "economic" income and "closely approximate what is commonly regarded as the total income of an individual less strictly business expenses" (p. 10). The data including capital gains and losses for 1935–37 are overstated relative to earlier years because of changed reporting methods: the first entry for 1934 is comparable with earlier years, the second with later ones.

What type or types of income account for the concentration of individual incomes? Martin Taitel has noted that "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 these incomes." [17] As incomes increase, a larger and larger proportion of successive additions, on the average, flows from dividends. In 1936, for example, 16.5 percent of the difference between average gross incomes of $2,411 and $5,000 was represented by dividends; but 61.2 percent of the difference between average gross incomes of $100,000 and $150,000 was accounted for by dividends; while no less than 75 percent of the difference between average gross incomes of $500,000 and $1,000,000 was accounted for by dividends.[18] The inclusion of property income in other forms (interest, rents, and royalties, etc.) with dividends would account for substantially all of the difference between incomes of different sizes in the higher income brackets.

[17] Temporary National Economic Committee Monograph No. 12, Profits, Productive Activities, and New Investment, p. 52.

[18] Temporary National Economic Committee Monograph No. 12, Profits, Productive Activities, and New Investment, by Martin Taitel, table X, p. 53.

CONCENTRATION OF SAVINGS BY TRUSTS

The adoption of a separate income tax form for fiduciaries for 1937 (Form 1041), by resulting in separate tabulations in Statistics of Income, has made possible a fairly accurate analysis of savings by trusts for the first time.[19] In order to determine the amount saved by trusts, it was necessary to supplement the reported gross income of all trusts with an estimate of the relatively small amount of non-reported wholly and partially tax exempt income.[20]

There were 183,000 income tax returns filed by fiduciaries in 1937,[21] including taxable and nontaxable returns, and returns with balance net income as well as those with no balance net income. Approximately 26 percent of the balance net income received by fiduciaries—including estimated nonreported tax exempt income, and including statutory capital gains and losses—was saved; if capital gains and capital losses are excluded from gross income, fiduciaries saved 20 percent of balance net income (table 5). The 183,000 fiduciaries saved at least $249 millions in 1937 ($352 millions including capital gains and losses). This was more than 36,700,000 American families with incomes of less than $3,000 (93 percent of the total number of families) saved in 1935–36. (The percentages of income saved by fiduciaries with different balance incomes are tabulated in appendices III and IV.)

TABLE 5.—*Savings by all fiduciaries in 1937*

[Millions of dollars]

	Savings, with statutory capital gains and losses included in income	Savings, with statutory capital gains and losses excluded from income
1. Gross taxable income (excluding partially taxable income)	$1,516	$1,413
2. Partially and wholly tax exempt income [1]	101	101
3. Compiled gross income	1,617	1,514
4. Total deductions [2]	260	260
5. Compiled balance income	1,357	1,254
6. Distributed to beneficiaries	1,005	1,005
7. Amount saved	352	249
8. Percentage of compiled balance income saved	26	20

[1] The partially tax exempt income reported in gross taxable income was eliminated from line 1 and transferred to line 2. Includes an estimated 20 million dollars of wholly and partially tax exempt income not reported for balance deficit trusts and for trusts with balance incomes of less than $5,000. Does not include estimated income below the exemption limit of interest of $5,000 of principal.

[2] After an estimated division of the deductions reported on Form 1040 returns between distributions (line 6) and other deductions. This allocation affects only the percentage saved, not the amount saved.

Source: Bureau of Internal Revenue, Statistics of Income, 1937, Part 1, tables 12 and 13, pp. 173–178.

The concentration of income received from fiduciaries in 1937 is suggested by the income tax statistics. Of the more than 6,300,000 tax returns filed by individuals in 1937, less than 3,400,000 were tax-

[19] A more accurate analysis will be possible for 1938. Many trusts in 1937 filed on Form 1040, which was designed for the use of individuals, and which was used by fiduciaries until 1937. Form 1040 masked distributions to beneficiaries. The Bureau of Internal Revenue announced that some 1938 returns were made on Form 1040, but that it adjusted the majority of these returns for distributions to beneficiaries. (Press Service No. 21-79, August 7, 1940).

[20] Such income received by balance deficit trusts and by trusts with balance incomes of less than $5,000 was not tabulated in Statistics of Income, but was very conservatively estimated at 20 million dollars. (Balance income is equal to net income before distribution to beneficiaries; and it is therefore equal to total income, not including tax exempt income, minus total deductions.) No estimate was made of the amount of tax exempt income below the exemption limit of the interest of $5,000 principal amount of tax exempts.

[21] On Form 1040 and Form 1041.

able. Only 159,572 individuals reported income from fiduciaries. Thirty-eight percent of these reporting individuals had net incomes of $6,000 and more, and they reported 81 percent of the fiduciary income (table 6). All of these individuals fell within the highest 1 percent of income recipients in 1937.[22] If the claims to undistributed fiduciary income were in proportion to fiduciary income receipts, the individuals with net incomes of $6,000 and more had an equitable interest in an additional $200,000,000 of income saved for them in 1937 (excluding their share of capital gains and losses). If this income had been distributed, the aggregate income of the highest 1 percent of income recipients would have been increased by approximately 2 percent in 1937, and the concentration of income in that year would have, therefore, been slightly greater.

TABLE 6.—*Fiduciary incomes reported by individuals with net incomes of more than $6,000 and by those with incomes of less than $6,000 in 1937*

	Number reporting	Amount of fiduciary income reported
1. All individuals reporting income from fiduciaries	159,572	$830,772,000
2. Individuals with net incomes of less than $6,000 reporting fiduciary income	99,026	$156,266,000
Percentage of total	62	19
3. Individuals with net incomes of more than $6,000	60,546	$674,506,000
Percentage of total	38	81

Source: Bureau of Internal Revenue, Statistics of Income, 1937, Part 1, table 7, pp. 133–137.

CONCENTRATION OF SAVINGS BY BUSINESS ENTERPRISES

It has been indicated that business enterprises in good years are responsible for somewhat less than two-fifths of the country's gross savings. These gross savings are represented by retained earnings plus allowances for depreciation and depletion.[23] As such they are conservative estimates of the volume of gross saving.[24]

[22] In 1937 any individual with a statutory net income of $6,075 and more fell in the highest 1 percent of income recipients. See Temporary National Economic Committee Monograph No. 4, Concentration and Composition of Individual Incomes, 1918–37, by A. J. Goldenthal, p. 26.

[23] The criticism has been made that the sum of retained earnings plus depreciation and depletion allowances overstates gross savings and the volume of funds available for financing replacement and expansion. George O. May criticized the testimony on savings and investment before the Temporary National Economic Committee on this point, arguing that in many cases book entries for depreciation "may be regarded as a recognition of an unpleasant fact or as an idle gesture—they will certainly produce no money for replacement if the company has no income from which a depreciation provision can be set aside." "The Relationship of Depreciation Provisions to Replacement," Journal of Accountancy, May 1940, p. 343. He explained that 46 percent of the total depreciation and depletion charges claimed on corporate income tax returns for the 7 years ending with 1935 were claimed by corporations which had no net income; and that these no-net income corporations constituted 64 percent of the total number of corporations. Id.

It is, of course, true that the amounts of depreciation and depletion charged to current income are not necessarily earned. Nor are they available for investment unless they are earned. But in the above calculation of business gross savings and funds available for investment, retained earnings are added algebraically to depreciation and depletion allowances. If any enterprise shows a loss, or if it distributes more in dividends than it has earned, retained earnings are negative, and the total amount available to it from internal sources is less than its allowances for depreciation and depletion. If its net loss or negative retained earnings are greater than its charges for depreciation and depletion, it has negative business savings.

In the above calculations the negative savings, i. e., the unearned depreciation and depletion allowances, of some enterprises were subtracted from the positive gross savings of other enterprises. Hence the total of retained earnings, depreciation, and depletion used for all enterprises is a net figure; and this total was available for investment.

It should be noted that the calculation of business gross savings for all enterprises as a group, though correct for the calculation of the amount of savings, minimizes both the difficulties involved in transferring savings through the capital markets and the economic significance of the results. (This point is discussed in Part III, infra.) The funds available to the General Motors Corporation and represented by its gross savings are not reduced because 1,000 corner grocery stores use up their capital funds and go out of business. It is, therefore, more important to investigate the distribution and the concentration of business gross savings than to know what the algebraic total of savings for all enterprises is.

The fact that gross savings computed as described were available for investment does not mean that these savings were invested. Gross savings may be used to build up cash or pay off liabilities as well as to pay for plant and equipment. Cf. Eliot Janeway's book review of Idle Men, Idle Money in The Nation, August 24, 1940.

[24] Undistributed gross income is understated for three principal reasons:

(1) In many cases business expenditures for machines, implements, dies, small tools, and other plant additions are charged directly to the income account. (In comparing estimates of business gross saving

In 1923–29 business net savings constituted one-third of business gross savings, and depreciation and depletion constituted the remaining two-thirds. In recent years the relative importance of depreciation and depletion in the total has increased. (See appendix V.)

It is doubtful, however, whether the components of business gross savings, taken separately, have any great economic significance. Accounting practices vary as among corporations: some charge relatively low rates of depreciation and compensate by retaining a high percentage of their earnings; others charge relatively high rates of depreciation and pay out substantially all their earnings. There is no airtight wall between gross savings reflected by depreciation and depletion charges. For example, depreciation charges by public utility operating companies taken for Federal income tax purposes have been consistently larger than those shown in reports to stockholders and the public. Although a definitive study of such practices is yet to be made, it seems that in the middle 1920's depreciation charges publicly reported were, on the average, approximately one-half those taken for Federal income tax purposes. This proportion has been increasing gradually. At the present time it seems that depreciation charges taken for public reporting purposes are almost as large as those taken on Federal income tax returns. At the same time it appears that dividends paid represent an increasing proportion of net profits. Both the composition and the total of gross savings has been modified. Though few other industries show such a marked trend, it is apparent that the composition of business gross savings must be interpreted cautiously. The adoption of an undistributed profits tax, of an excess profits tax, and of liberalized depreciation and amortization provisions in connection with defense orders would all tend to increase the apparent importance of depreciation in the total. From the standpoint of savings analysis it is, therefore, more significant to treat business gross savings as a total, leaving to business enterprises the allocation among components that seems best.

The concentration of gross savings for enterprises of various sizes can be stated only for corporations. In 1937, the latest year for which data are available, all nonfinancial corporations reported gross savings of $2,837,000,000, approximately half the amount reported

with estimates of business gross capital formation, it is important to know whether given items are included in estimates of business capital formation and whether they are charged by business enterprises to capital account or to income account. Kuznets does not reduce his estimates of business gross capital formation because enterprises may charge some items to income account. Terborgh attempts to include in outlays for business durable goods only such as are normally charged to capital account, but there is no indication how well he has succeeded in doing so.) As May suggests, the line between depreciation and maintenance is to some extent indefinite and arbitrary. "The Relationship of Depreciation Provisions to Replacement," Journal of Accountancy, May 1940, p. 344.

(2) The establishment of contingency and other reserves, when charged to current income, reduces current undistributed profits or business savings. For example, when a reserve is set up in connection with a portfolio of market securities, or with accounts receivable, and these reserves are charged to current income, the profits of the business enterprise are reduced, but the enterprise has as much funds after the bookkeeping reduction of net profit as before.

(3) A very important source of understatement, particularly in periods of business recession and price decline, is the current accounting treatment of inventory. Inventory write-downs in such periods are substantial; they present no important problem in periods of prosperity and increasing prices. When prices remain constant or increase, goods are charged in and out at cost; and inventories at year-end are not revalued, because they are valued at cost or market, whichever is lower. During periods of falling prices, however, the application of the same accounting principle of cost or market, whichever is lower, has quite different results. Inventory charged out at one price may be replaced by inventory purchased at a lower price, but at the end of the fiscal year all of the inventory is revalued. All of the goods purchased at higher prices are revalued down to the prevailing price level. The amount of gross saving is not decreased, however, when inventory bought in the preceding fiscal year is marked down, for example, from $1,000,000 to $800,000 and the difference of $200,000 is charged to current profit and loss. Nor are the gross funds available from current receipts decreased because inventory purchases within the fiscal year are revalued at the end of the year.

in 1929. These gross savings in 1937 may be allocated as follows (in millions of dollars):

Source	By all nonfinancial corporations	By nonfinancial corporations	
		With net income	Without net income
Undistributed profits	−762	827	−1,589
Depreciation	3,078	2,323	756
Depletion	521	412	109
Gross savings	2,837	3,562	−724

(For the composition of gross savings by net income and no-net income groups, see appendix V.)

Which corporations were responsible for these gross savings? This question can be answered for the 318,000 nonfinancial corporations that filed balance sheets with their income tax returns in 1937. These corporations reported gross savings of $2,869,000,000. (The nonfinancial corporations that did not file balance sheets reported negative gross savings of $32,000,000.) These savings were largely concentrated in the larger corporations:

7.6 percent of the corporations (those with assets of more than $500,000) reported 92.9 percent of the gross savings.

4.2 percent of the corporations (those with assets of more than $1,000,000) reported 87.5 percent of the gross savings.

1 percent of the corporations (those with assets of more than $5,000,000) reported 69.8 percent of the gross savings.

0.1 percent of the corporations (those with assets of more than $100,000,000) reported 30.4 percent of the gross savings.

The 189,000 corporations (59 percent of the total) with assets of $50,000 and less had negative gross savings.

The concentration of gross savings in the largest corporations is even more pronounced in bad years than in good. In 1933, for example, the nonfinancial corporations (submitting balance sheets) with more than $50,000,000 of assets reported 74.5 percent of the gross savings, compared with the 39.4 percent reported in 1937. (See appendix VI.) During the period 1931–37 the group of corporations with more than $50,000,000 of assets never had a net loss, while those with less than $50,000 of assets never had a net profit. During the period 1931–37 the group of corporations with more than $50,000,000 of assets had negative gross savings in only 2 years, 1931 and 1932—and then only because they elected to pay out part of their depreciation and depletion allowances as dividends; while the group of corporations with less than $50,000 of assets had negative gross savings every year—because their net losses were greater than their depreciation and depletion allowances.

In the preceding discussion, all corporations have been considered as a group, whether they had net profits or net losses. But it has been suggested that this procedure unduly simplifies the analysis of savings:

> To deduct the deficits or losses of one group of corporations from the profits of another group of corporations is to assume that the corporate universe is a closed system in which the operating profits of one group of corporations—profits which may be used for industrial expansion—may be diminished, can-

celed, or converted into deficits by the losses of another group of corporations. This assumption is hardly realistic, for the successful corporations still have their profits.[25]

Which nonfinancial corporations, then, among those earning a net profit were responsible for the gross savings of the group? This question can be answered for the 139,440 that filed balance sheets in 1937: [26]

11.3 percent of the corporations (those with assets of more than $500,000) reported 85.2 percent of the gross savings.
6.4 percent of the corporations (those with assets of more than $1,000,000) reported 79.5 percent of the gross savings.
1.6 percent of the corporations (those with assets of more than $5,000,000) reported 63.1 percent of the gross savings.
0.12 percent of the corporations (those with assets of more than $100,000,000) reported 29.3 percent of the gross savings.
On the other hand, 54.3 percent of the group, those with assets of $50,000 and less, accounted for only 2.6 percent of the gross savings.

The gross savings by nonfinancial corporations are highly concentrated; and the gross savings by financial corporations are even more highly concentrated. Consequently, during 1931–37, the only years for which data are available, concentration of gross savings among the larger corporations is greater for all corporations as a group than for nonfinancial corporations alone. In 1937, nonfinancial corporations with assets of more than $50,000,000 reported 39 percent of gross savings by the nonfinancial group; but all corporations with assets of more than $50,000,000 reported 45 percent of the gross savings by all corporations.[27]

Who are the beneficiaries of these savings by corporations? The corporation stockholders who are the legal as well as the beneficial owners of the profits distributed as dividends are the beneficial owners of the undistributed profits.[28]

If all corporation net income were paid out as dividends (or its equivalent), the bulk of what would otherwise be retained as undistributed profits would go largely to the highest income groups. Corporation stock ownership in the major corporations is highly concentrated,[29] and dividend receipts are correspondingly concentrated.[30]

Rough calculations will indicate the amount of additional income that would accrue to the highest 1 percent of income recipients in 1937

[25] Temporary National Economic Committee Monograph No. 9, Taxation of Corporate Enterprise, by Clifford J. Hynning, p. 17.

[26] The gross savings of nonfinancial corporations, filing balance sheets, are tabulated by asset classes for net income and no-net income corporations separately in appendixes VII and VIII.

[27] The gross savings of all corporations filing balance sheets are tabulated by asset classes for net income, no-net income, and both classes of corporations in appendixes IX, X, and XI.

[28] This was the rationale of the proposal in 1936 to repeal the corporation income, capital stock, and excess profits taxes: force the distribution of net income through a high undistributed profits tax; and tax dividends fully under the personal income tax. See Hearings before the House Ways and Means Committee on the Revenue Act of 1936, 74th Cong., 2d sess., p. 3.

[29] See Temporary National Economic Committee Monograph No. 29, Distribution of Ownership in the 200 Largest Non-Financial Corporations, by R. W. Goldsmith, R. G. Parmelee, J. C. Gorham, and others. The concentration of stock holdings in major petroleum companies was discussed before the Temporary National Economic Committee. In no case did the 100 largest stockholders of record of the major oil companies own less than 21.0 percent of the total number of outstanding common shares. The 100 largest stockholders of record owned 24.0 percent of the Texas Corporation, 47.3 percent of Standard Oil Co. (New Jersey), and 84.9 percent of Sun Oil Co. Hearings before the Temporary National Economic Committee, Part 14A, pp. 7713–7714, 8003–8042. Mr. Gorham's study indicates that going behind the stockholders of record to the beneficial owners shows increased concentration within any corporation; and that a consolidation of beneficial interests in all corporations shows yet higher concentrations. This is what one would expect. The Mellon interests in Mr. Gorham's 200 corporations were found in many corporations; they had aggregate holdings of $500,000,000 in the $30,000,000,000 of stock in his sample of corporations.

[30] Cf. Edward D. Kennedy, Dividends To Pay, New York, Reynal & Hitchcock, 1939.

(those with minimum statutory net incomes of $6,075) if their beneficial interests in undistributed profits were considered as income. Undistributed profits of corporations earning a net income in 1937, after all taxes, were 1.3 billion dollars. Individuals with statutory net incomes of more than $6,000 in that year received approximately three-quarters of the total of 3.5 billion dollars of dividends reported by individuals. If the share of these individuals in the undistributed portion were the same as that in dividends distributed,[31] their share would be approximately 975 million dollars. This sum was approximately 10 percent of the income received by the highest 1 percent in 1937; and it represented saving for that group by corporations. It should be noted that saving in this form receives advantages under the present personal and corporation income tax laws in comparison with savings out of statutory income.[32]

CONCENTRATION OF GROSS SAVING BY GOVERNMENTS

During the past 20 years there has been a reversal in the pattern of governmental saving. All governments taken as a group—Federal, State, and local—saved during the 1920's, but with the exception of 4 years they dis-saved or had negligible saving in the 1930's.

The meaning and magnitude of governmental saving has already been touched upon. It is advisable, however, to indicate in greater detail what governmental saving is.

Saving is the difference between current income and current expenditure, or, alternatively, the net increase in assets or net decrease in liabilities, exclusive of gains or losses from the revaluation of assets. If a governmental body collected $10,000,000 in taxes, built a water supply system costing $1,000,000, and spent the balance for operating expenses, it saved $1,000,000. If this governmental body spent $500,000 for the water system, $500,000 for debt retirement, and $9,000,000 for operating expenses, it saved $1,000,000. But if this governmental body raised only $9,000,000 from taxes and borrowed $1,000,000 to finance its plant outlay and debt retirement, its current income and current expenditures were $9,000,000, and it saved nothing. Governmental gross saving, therefore, equals capital outlays plus decreases in debt (or minus increases in debt).[33]

During the decade of the 1920's the Federal Government spent an average of $250,000,000 per year for the construction of buildings, roads, harbors, and other capital improvements. Investments in machinery and equipment are not included in this sum, since outlays for these purposes are not readily available. This investment of $250,000,000 per year was financed with taxes; and at the same time the Federal Government reduced its debt. The cash (rather than the budgetary) receipts and expenditures of the Federal Government,

[31] It may not unreasonably be expected that the beneficial interest of the highest 1 percent of income recipients in undistributed profits would be larger than their interest in dividends paid out. To the extent that the highest 1 percent control dividend policies, they may find it advantageous to minimize personal income taxes by paying out a lower than average proportion of net profits as dividends.

[32] Twentieth Century Fund, Facing the Tax Problem, New York, Twentieth Century Fund, Inc., 1937, pp. 160–164.

[33] In computing savings each government must be treated as a consolidated basis: transfers to trust funds, etc., must be adjusted for. Goldsmith and Salant use the following formula for computing Federal gross saving: (*a*) Current receipts equal total receipts minus (i) capital receipts and (ii) seigniorage; (*b*) current expenditures equal total expenditures minus (i) public works, including grants for public works, (ii) loans, (iii) subscriptions to capital stock and paid in surplus, (iv) debt retirements, (v) capital outlay of Work Projects Administration, Civil Works Administration, and Civilian Conservation Corps; (*c*) current receipts minus current expenditures represent saving; (*d*) saving under trust accounts, increments on gold, etc. "The Volume and Components of Saving in the United States, 1933–37," Studies in Income and Wealth, vol. III, New York, National Bureau of Economic Research, 1939, p. 290.

taken on a consolidated basis, constitute the most convenient statement of its over-all operating and investment activities. During 1921–29 net cash income on the average exceeded net cash outgo by $280,000,000 per year.[34] Gross Federal savings on this basis therefore averaged $530,000,000 per year during the period.

State and local governments during 1921–29 spent an average of $1,800,000,000 per year on construction. On the average, they borrowed $800,000,000 per year, equivalent to 44 percent of construction expenditures.[35] On balance, State and local governments had average gross savings of $1,000,000,000 per year.

Federal, State, and local gross savings during 1921–29 averaged 1.5 billion dollars per year, with the Federal Government accounting for one-third of the total. The concentration of savings among the remaining 180,000 governments in the United States has never been determined, although it clearly is substantial.[36]

Since 1929 the distribution and character of governmental savings have changed. The States and localities continued to save each year, in considerable part with the aid of Federal funds, but the Federal Government did not. State and local gross savings ranged from $700,000,000 in 1932 to $2,000,000,000 in 1934; in 1939 they were $1,500,000,000. The Federal Government saved only in 1937—a year marked by one of the sharpest business recessions on record. The decline of Federal savings, however, has decreased the concentration of governmental saving.

Concentration, Taxation, and Saving

The volume of saving in the United States is principally a function of four factors: the level of national income, the concentration of income, the prospective rate of return on savings (the rate of interest, the rate of profit), and the amount of taxes collected and the incidence of those taxes.

The relationship between the volume of saving and the amount and concentration of national income was suggested in preceding sections. First, when national income increases, the *amount* of income received by those who account for the bulk of individual savings increases, and their savings increase. Secondly, when the national

[34] Calculation of savings on this basis, instead of on the basis of gross, net, or otherwise adjusted debt, allows for transfers to trust and pension funds and other noncash outlays. (See appendix II.)

[35] Moody's Investors Service has prepared a series of "productive" capital issues. This series contains all capital issues whose proceeds were used for "productive" purposes—for investment. During the period 1921–29 Moody's tabulations indicate that all issues by State and local governments were productive issues. See the convenient summary of these results in H. G. Moulton, G. W. Edwards, J. D. Magee, and Cleona Lewis, Capital Expansion, Employment and Economic Stability, Washington, the Brookings Institution, 1940, pp. 27–29 and 349–354.

[36] One indication of concentration would be the character of construction outlays. In 1928, for example, total public construction was divided as follows (in milions):

Highways	$1,270
Sewerage disposal and water supply	300
Public educational buildings	390
Nonresidential buildings, excluding educational	248
Naval and military	42
Conservation and development	72
Miscellaneous	167
Total	2,499

Hearings before the Temporary National Economic Committee, Part 9, p. 4065. The most important construction categories are widely scattered. Of the $1,270,000,000 of highway expenditures, 42 percent were made by States, 23 percent of counties, 18 percent by cities with a population of more than 500,000, 3 percent in cities with a population of 300,000 to 500,000, 6 percent in cities with a population of 100,000 to 300,000, 4 percent in cities with a population of 50,000 to 100,000; 1 percent in cities with a population of 30,000 to 50,000, 6 percent in smaller cities, and 1 percent in rural incorporated areas. Bureau of Foreign and Domestic Commerce, Construction Activity in the United States, Washington, 1938, pp. 72–78. There appears to be some slight overlapping in these figures.

income increases, the *proportion* of that income received by those who account for the bulk of individual savings may increase—at least, that proportion clearly does not decrease—and this may tend to increase further the amount saved. Thirdly, when the national income increases, undistributed profits increase (both in amount and in proportion to the national income); in the main, the beneficial interest in these savings accrues to those who are responsible for the bulk of individual savings. The distribution of wealth affects the volume of saving mainly by concentrating the distribution of income, though it may also affect the disposition to save at given income levels.

The prospective rate of return on savings (rates of interest, rates of profit, depending upon the peculiar opportunities available to the saver) probably has only a very slight effect upon the volume of savings. This question has been discussed at length in economic literature; and one widely accepted theory holds that the greater the monetary compensation for saving, the more people will save. It is sometimes assumed that saving (refraining from current consumption) is painful, and that consequently no one will save unless he is paid for it. Whatever validity these propositions may once have had, they appear to have little at the present time. As F. H. Knight explained:

> The increase in wealth is to a large extent an end in itself as well as a means to the increase of income, and this also again to a rapidly increasing degree as the standards of life are advanced. Men work "to get rich" in a large proportion of cases, not merely in addition to, but in place of, consuming larger amounts of goods. It is a grave error to assume that in a modern industrial nation production takes place only in order to further consumption. It is true to a great and ever-increasing degree that consumption is sacrificed to increase production. Whatever our philosophy of human motives, we must face the fact that men do "raise more corn to feed more hogs to buy more land to raise more corn to feed more hogs to buy more land," and, in business generally, produce wealth to be used in producing more wealth with no view to any use beyond the increase of wealth itself.[37]

The volume of saving is affected much more by a change in the national income than by a change in interest rates. There is always more saving with a high level of national income and low interest rates than with a low national income and high interest rates. The last few years have indicated that even substantial declines in interest rates at levels of national income characterized by considerable amounts of unemployment have been unable to effect any decline in the rate of saving.

Even with any given national income, concentration of income, and tax structure, it must not be assumed that savings increase as rates of interest increase. It may be true that some individuals will save more at a given level of income when interest rates rise, but others who have agreed to save through life insurance and other contractual plans may unnoticeably be finding themselves saving less. On the other hand, as interest rates fall, dividends on life insurance contracts decrease, and policyholders are expected to increase their premium payments. It is unlikely that these increases in premium payments are offset in full by decreases in other forms of saving.

The larger the stake in such contractual forms of saving, the harder it is to decrease saving when rates of interest fall. So far as

[37] Risk, Uncertainty, and Profit, reprinted in London by the London School of Economics, 1935, p. 319.

life insurance is concerned, there is every pressure upon the policyholder to maintain his policy in force. Practically all attempts by the policyholder to do otherwise involve some loss of savings or risk of not being able to replace insurance protection. The life insurance companies rely upon the fact that those whose policies are of several years standing have a vested interest in continuing to save, even though interest rates decline, for the decline in interest rates appears not to have affected all policyholders equally. One indication is that the older premiums (say the tenth or the fifteenth annual premium) have increased relatively more than the earlier ones. Another indication is that the branches of the life insurance business which have grown most rapidly in the past decade, despite the fall of interest rates, are those where the savings element is greatest: annuities and investment of balances.

Insofar as saving does vary directly with its reward, it is essential to note that there is no one interest rate throughout the community. Saving takes place at many different interest rates. The market for savings is a discontinuous and separated one.[38] It is a paradox that those with small incomes, who find it hardest to save, receive the smallest net returns upon their savings. Any comparison of the cost of industrial insurance with that of ordinary life insurance makes this cost differential painfully obvious. Those with the largest incomes, those who find it easiest to save, those whose saving is to some degree automatic, receive the highest rates of return upon their saving not only because they employ low cost methods but because they have access to the best information and the high yield opportunities.

The effect of Federal, State, and local taxes upon the volume of saving by individuals deserves but has not yet received a comprehensive theoretical and historical study.[39] Certain facts, however, seem clear.

The combined American tax structure is regressive in the lower income brackets. The Twentieth Century Fund reported that the combined tax structure was regressive for the lower income groups (up to about $2,000 per year), and distinctly progressive for the upper income groups.[40] A study of the tax structure in 1938–39 by Colm and Tarasov indicated that the incidence was regressive at the lower income levels. The percentage of taxes borne to income was higher on those with incomes up to $500 than on those with incomes of $5,000 to $10,000.[41]

The effect of changes in the composition and the weight of the tax structure is much less clear. Colm and Lehmann concluded that the net effect of changes in the Federal fiscal system between 1932 and 1936 would be a decrease in total savings in an average year by 4 to 7 percent.[42] These changes would have modified the components of

[38] Even in life insurance the discounted net cost for 10 years of a $1,000 whole life policy, age 25, varied among the 26 largest companies from $55.93 to $87.04, i. e., by more than 50 percent. See Hearings before the Temporary National Economic Committee, part 10–A, pp. 300 ff.

[39] How taxes affect the total volume of individual, business, and governmental savings depends upon how governments spend their tax collections.

[40] Facing the Tax Problem, New York, Twentieth Century Fund, 1937, ch. 17, especially pp. 233, 236–237.

[41] Temporary National Economic Committee Monograph No. 3, Who Pays the Taxes?, p. 6. The percentages varied only slightly between the $500–$1,000 level and the $5,000–$10,000 level, being 18.0 percent in the former and 17.9 percent in the latter. The low point was 17.3 percent in the $1,000–$1,500 class. In view of the character of the data and the methods of calculation, these slight differences must be interpreted cautiously.

[42] Economic Consequences of Recent American Tax Policy, New York, New School for Social Research, 1938, p. 42.

savings. The conclusion with regard to the net effect of these fiscal changes was in part based upon the existence of an undistributed profits tax; without this tax the net effect might have been a smaller decrease or perhaps a slight increase in the volume of savings. Henry S. Dennison estimated that Federal, State, and local taxes fell 73 percent upon consumption and 27 percent upon savings in 1936.[43] With the same methods, it appears that the tax structure in 1938 and 1939 fell upon savings with approximately the same weight as in 1936.[44] It appears, however, that the proportion of their income paid in taxes by the highest 1 percent of income recipients in 1936 and 1937 was almost double that paid in 1928 and 1929 (13.4 percent and 11.2 percent compared with 6.0 percent and 5.5 percent).[45]

It remains to be seen whether higher taxes in recent years have affected the volume of saving in relation to national income. It is just as important, however, to distinguish the effects of taxation upon savings in various forms and from various sources.

[43] H. S. Dennison, Lincoln Filene, R. E. Flanders, M. E. Leeds, Toward Full Employment, New York, McGraw Hill, 1938, p. 187.

[44] Tax yields as reported in Commerce Clearing House, Tax Systems, 8th ed., Chicago, 1940, p. 315; calculations by the writer.

[45] Temporary National Economic Committee Monograph No. 4, Concentration and Composition of Individual Incomes, 1918–1937, by A. J. Goldenthal, p. 61.

PART III

THE FLOW OF SAVINGS

The Flow of Savings Through Capital Markets

THE ROLE OF CAPITAL MARKETS

Savings may move toward the financing of capital formation directly or indirectly. They move directly when they are spent for capital goods by the saver. They move indirectly when they are spent for capital goods by someone other than the saver.

The indirect movement of savings into investment involves the transfer of savings from the saver, through one or a series of intermediaries, to the investor.[1] A simple case may involve only the placing of mortgage money through a local real estate broker, or the deposit of funds with a building and loan association which lends these funds on mortgage. A more complex movement may involve two or more intermediaries. The saver pays a premium to his life insurance company; the life insurance company buys bonds newly issued by a business enterprise or a governmental body and offered through an investment banker or sold directly by the issuer.

The transfer mechanism through which the process functions is often referred to as the capital market. This term is a convenient one if it does not obscure three important facts: that the capital market consists of not one but many markets, distinguished with respect to area, type of security, and character of borrower; that the connections among these markets are tenuous in many instances, and reflect in many cases a marked degree of imperfect competition; and that corresponding to these more or less separated markets are many interest rates rather than a uniform interest rate. Furthermore, the capital markets not only function to dispatch savings toward investment, but to exchange or convert old securities.

The major savings or financial institutions in the capital market, as described by Donald H. Davenport, are the life insurance companies, the mutual savings banks, the commercial banks, the postal savings system, building and loan associations, investment trusts, and corporate and individual trustees. In recent years substantial amounts of savings have been accumulated through such other institutional processes as the social security funds, the Federal, State, and other pension and retirement funds, and the United States savings ("baby") bonds.[2] The principal auxiliary mechanisms in the capital market are the stock exchanges, security brokers and dealers, and the investment bankers.

To the individual saver the indirect movement of savings into investment offers many advantages. It means greater diversification,

[1] See the discussion by D. H. Davenport of the mechanisms and processes by which savings travel toward investment. Hearings before the Temporary National Economic Committee, Part 9, pp. 3726–3734.

[2] Hearings before the Temporary National Economic Committee, Part 9, p. 3727.

greater security, greater liquidity. To the investor, the indirect movement of savings into investment opens the possibility of obtaining funds in larger amounts and on a variety of terms. To the community the mobilization and allocation of savings through the capital market may result in their most profitable employment and expenditure. Savings in large and small amounts flow into savings reservoirs, and it is expected that they are there assembled and auctioned off to the highest bidders. To the extent that savings really go to the highest bidder (taking into consideration the risk involved) and to the extent that the greatest rate of return corresponds with the greatest social need, savings are thus placed in their most effective employments.

The direct movement of savings into investment, where the saver invests his own savings, though involving no transfer expenses, may not result in the most efficient use of savings. Net profits not paid out as dividends, i. e., income saved for corporation stockholders, may be invested directly by managements to yield a low rate of return in the same business. The interests of the management and the stockholders are dissimilar in part, and the decision to save is largely independent of the stockholders. Stockholders' savings may, therefore, be used by the management to purchase securities, to acquire high cost business, to push expansion, or to finance other activities which stockholders would not finance with the savings they would individually make from the corporation profits if these were all paid out as dividends.[3] Complaints were made during the 1920's that growing corporate financial self-sufficiency was freeing investment policy from the "testing" of the capital markets.

Whether the movement of savings, directly or indirectly, is toward the highest yield investments depends upon two major factors: first, whether the capital market mechanism operates without bias and in the full light of day; and secondly, whether concentration disturbs the competitive functioning of the markets.

Various congressional investigations since 1931 have indelibly established the proposition that the unregulated markets of the boom era did not operate without bias. But the facts disclosed by the hearings on the sale of foreign bonds or securities in the United States,[4] on utility corporations,[5] on railroads, holding companies, and affiliated companies,[6] on stock exchange practices,[7] on protective and reorganization committees,[8] and on investment trusts and investment companies[9] have had their effect. The enactment of the Securities Act of 1933, the Securities Exchange Act of 1934, the Public Utility Holding Company Act of 1935, the revisions of bankruptcy and reorganization procedures, and the Investment Company Act of 1939, have done a great deal to remove the abuses of the boom era and to

[3] See, for example, the interesting colloquy on the possible disadvantages to old policyholders (there are no stockholders in a mutual life insurance company) of writing new business (Hearings before the Temporary National Economic Committee, Part 4, pp. 1255–1257).

[4] Hearings on the sale of foreign bonds or securities in the United States, pursuant to S. Res. 19, 72d Cong., 1st sess., 1932.

[5] Hearings on utility corporations, pursuant to S. Res. 83, 70th Cong., 1st sess., 1927.

[6] Investigation of railroads, holding companies, and affiliated companies, pursuant to S. Res. 71, 74th Cong., 1st sess., 1935.

[7] Hearings on stock exchange practices, pursuant to S. Res. 84, 72d Cong., 1932; Report of Committee on Banking and Currency on stock exchange practices, pursuant to S. Res. 84, 72d Cong., and S. Res. 56 and 97, 73d Cong., Rept. 1455, 73d Cong., 2d sess., 1934.

[8] Reports on protective and reorganization committees, by the Securities and Exchange Commission, pursuant to sec. 211 of the Securities Exchange Act of 1934.

[9] Reports on investment trusts and investment companies, by the Securities and Exchange Commission, pursuant to sec. 30 of the Public Utility Holding Company Act of 1935.

make the capital markets function more nearly as they are theoretically supposed to. It is probably true that the principles of full disclosure and adequate information—the indispensable conditions of a properly functioning market—are more thoroughly observed now than ever before.

The hearings before the Temporary National Economic Committee considered the functioning of the capital markets from the point of view of concentration rather than that of disclosure. Though disclosure has been stimulated, though the spotlight of publicity now searches many of the corners which were dark during the 1920's, the fact remains that disclosure and publicity are not enough. Financial institutions concentrate savings; and concentration creates control, bias, and power that may seriously disturb the free and competitive functioning of the capital markets. The Temporary National Economic Committee therefore focused attention upon concentration of resources, of savings, of investment decisions, and of investment policies.

SAVINGS THROUGH FINANCIAL INSTITUTIONS

Financial institutions are now the dominant factor in the security markets, and their relative importance is increasing. Their assets have more than doubled since 1922. In 1922, the assets of the principal savings institutions[10] totaled 30 billion dollars; in 1929, 55 billion dollars; and in 1938, 65 billion dollars (appendix XII). In 1937–39, the average annual increase in the assets or funds in these institutions was greater than in 1927–29 (table 7). Since the average national income in 1927–29 was higher than in 1937–39, the ratio of the increase of assets or funds in financial institutions to national income increased almost one-third, from 4.5 percent in the earlier period to 5.9 percent in the later.

These data indicate that a larger proportion of American savings flows to institutions now than in the 1920's. Savings flowing to life insurance companies—whether measured by premium income, total income, or increase in assets adjusted for change in policy loans—were substantially higher in proportion to national income in the 1930's than in the 1920's.[11] Though these facts suggest the efforts of the American people to save, even during the deepest depression on record, they suggest even more eloquently the automatic character of much of this saving, a substantial part of which could be discontinued or reduced only at some loss.

An analysis of the forms of saving by individuals in the period 1933–37 illustrates this situation in another way. From 1933 through 1937 individuals saved 10.9 billion dollars.[12] This was the final result of saving 16.1 billion dollars in some forms, and of drawing upon 5.2 billion dollars in other forms. Individuals reduced their holdings of securities by 2.1 billion dollars, and their ownership of homes, automobiles, and household property by 3.1 billion dollars.

[10] Assets of life insurance companies, time deposits of commercial banks, assets of mutual savings banks, assets of building and loan associations, governmental pension and trust funds, postal savings, and amount of United States savings ("baby") bonds outstanding.

[11] Hearings before the Temporary National Economic Committee, pt. 9, p. 4055.

[12] R. W. Goldsmith and Walter Salant, "Volume and Components of Saving in the United States, 1933-1937," Studies in Income and Wealth, vol. III, National Bureau of Economic Research, New York, 1939, p. 237.

On the other hand, they saved 16.1 billion dollars through financial institutions.[13] These savings were represented by—

	Billion dollars
An increase in currency and deposits	8. 3
An increase in insurance and pension reserves	9. 4
A decrease in equities in building and loan associations	1. 6
A net increase in all these forms	16. 1

TABLE 7.—*Changes in assets or funds in the principal savings institutions in the United States, 1922–39*

[Amounts in millions of dollars]

Year (as of June 30)	Life insurance assets less policy loans [1] (1)	Time deposits in commercial banks [2] (2)	Mutual savings bank assets [3] (3)	Building and loan association assets [3] (4)	Governmental pension and trust funds (5)	Postal savings deposits (6)	United States savings ("baby") bonds (7)	Total
1922								
1923	750	1, 674	553	600	115	−6		3, 686
1924	753	1, 008	460	823	120	1		3, 165
1925	1, 028	1, 485	548	743	151	−1		3, 954
1926	1, 224	1, 186	509	825	163	2		3, 909
1927	1, 291	866	589	822	181	13		3, 762
1928	1, 341	1, 690	677	860	246	5		4, 819
1929	1, 334	−439	318	679	255	2		2, 149
1930	1, 144	−62	289	129	254	21		1, 775
1931	882	−1, 245	897	−412	250	172		544
1932	225	−4, 321	−58	−667	239	438		−4, 144
1933	199	−3, 170	−167	−773	253	402		−3, 256
1934	732	866	98	−527	247	11		1, 427
1935	1, 310	1, 102	108	−561	290	7	62	2, 318
1936	1, 689	893	236	−264	366	28	254	3, 202
1937	1, 811	943	236	86	1, 451	36	478	5, 041
1938	1, 294	167	−73	−85	1, 144	−16	421	2, 852
1939	1, 689	268	227	46	1, 231	10	606	4, 077

[1] Admitted value basis; includes fraternal insurance. No adjustments have been made for capital gains and capital losses through revaluation and sale of admitted assets. These are increases in the assets of the 306 life insurance companies and of the fraternal orders included in the Spectator Life Insurance Yearbook as of Dec. 31 of the respective years. These increases were converted to a June 30 basis through the use of the percentages of the total life insurance assets which were held by the 49 companies reported on a monthly basis by the Association of Life Insurance Presidents, and published in the Bureau of Foreign and Domestic Commerce, Survey of Current Business.

[2] Excludes postal savings deposits.

[3] No adjustments have been made for capital gains and capital losses through revaluation and sale of assets.

Source: Adapted from hearings before the Temporary National Economic Committee, Part 9, p. 4052. Column 1 is from the Spectator Insurance Yearbooks, Life Volume; columns 2, 3, 4, and 6, from the Bureau of the Census, Statistical Abstract of the United States; column 5, data for 1937 from a study made by the U. S. Treasury Department, with the other years estimated; column 7, from the Annual Reports of the Secretary of the Treasury.

These 16.1 billion dollars of individuals' savings were concentrated through the major savings processes, and they became an investment problem for financial institutions.

The importance of these savings processes may be stated in another manner. The savings represented by increases in the assets of life insurance companies, postal and mutual savings banks, governmental pension and trust funds, building and loan associations, time deposits, and United States savings bonds arise principally from the savings of individuals.[14] During 1927–29 slightly less than half, and during 1936–39 slightly more than half of individual savings flowed through these institutions. The savings represented by increases in life insurance assets and governmental pension and trust funds constitute

[13] A small but not determinate part of these savings was represented by currency hoards; to this extent the total of 16.1 billion dollars flowing to financial institutions should be reduced.

[14] Some savings by business enterprises and governmental bodies is included.

the major components of this flow. The net increase in the assets or funds of the seven processes described was 13.8 billion dollars in 1929–39; but life insurance assets increased by 11.0 billion dollars and governmental pension and trust funds by 5.7 billion dollars. (The growth of each component may be traced in table 7.) The proportion of these assets or funds controlled by life insurance companies has increased sharply since 1924:[15]

Year	Assets or funds of principal savings institutions (millions)	Assets of life insurance companies (millions)	Proportion of life insurance assets to total assets or funds (percent)
1924	$36,445	$9,103	25.0
1927	48,070	12,646	26.3
1930	56,813	16,465	29.0
1933	49,957	17,771	35.6
1936	56,903	21,502	37.8
1939	68,873	26,296	38.2

CONCENTRATION THROUGH FINANCIAL INSTITUTIONS

The flow of savings through financial institutions shows a high degree of concentration, being directed in substantial part to the larger reservoirs in the East.

Geographic Concentration [16]

In 1937, one-third of the life insurance assets, savings bank and time deposits, and building and loan association assets was concentrated in New York; another third in New Jersey, Massachusetts, Pennsylvania, and Connecticut; and the remaining one-third was in the other 43 States. (See table 8.) Life insurance assets show the greatest geographical concentration. Forty-two percent of these assets were controlled in New York State, and 80 percent in the 5 States of New York, New Jersey, Massachusetts, Pennsylvania, and Connecticut. The 25 largest companies had 87 percent of all life insurance assets, and 57 percent of their assets were controlled from New York and Newark, 17 percent from New England, and 4 percent from Pennsylvania. Thus 78 percent of the assets of the 25 major companies were controlled from the financial East. The other savings institutions show similar concentration. Ninety percent of the assets of mutual savings banks are in 5 States,[17] with 54 percent in New York; and 59 percent of the assets of commercial banks are in 5 States,[18] with 29 percent in New York. The value of assets entrusted to corporate and individual trustees is not known with any precision, but Davenport suggested that it may amount to $50,000,000,000, or almost twice as much as the assets of life insurance companies.[19] The control over trust assets rests primarily in New York, Boston, Philadelphia, and a few other cities.

[15] Excluding policy loans of the life insurance companies. Includes fraternal insurance.
[16] Discussed in Hearings before the Temporary National Economic Committee, pt. 9, pp. 3751–3768, 4057–4062.
[17] New York, Massachusetts, Connecticut, Pennsylvania, New Jersey. Hearings Before the Temporary National Economic Committee, pt. 9, p. 4059. For an explanation of this concentration, see Hearings Before the Temporary National Economic Committee, pt. 9, pp. 3770–3771.
[18] New York, Pennsylvania, Illinois, California, Ohio. Hearings Before the Temporary National Economic Committee, pt. 9, p. 4060.
[19] Hearings Before the Temporary National Economic Committee, pt. 9, p. 3729.

TABLE 8.—*Geographical concentration in the control over 4 principal reservoirs of saving, 1937*

[Amounts in millions]

State	Assets of legal reserve life insurance companies	Savings bank and time deposits	Building and loan association assets	Total	Percent
New York	$11,107	$7,306	$379	$18,792	33.29
New Jersey	4,256	1,225	792	6,273	11.11
Massachusetts	2,174	2,581	476	5,231	9.26
Pennsylvania	1,313	2,366	597	4,276	7.57
Connecticut	2,253	909	31	3,193	5.66
Subtotal	21,103	14,387	2,275	37,765	66.89
All other States	5,146	10,107	3,437	18,690	33.11
United States	26,249	24,494	5,712	56,455	100.00

Source: Hearings Before the Temporary National Economic Committee, pt. 9, p. 4062.

Concentration in the Larger Institutions [20]

The flow of savings is largely concentrated in the larger savings institutions. The 308 legal reserve life insurance companies reported admitted assets totaling 26 billion dollars at the end of 1937. The 5 largest companies held 54 percent of this total, as follows:

	Assets (millions)	Percent of total
Metropolitan	$4,720	18.0
Prudential	3,584	13.7
New York Life	2,520	9.6
Equitable	2,106	8.0
Mutual Life, New York	1,349	5.1
Total	14,279	54.4

The size of these companies and the extent of their concentration may be better appreciated from the statement that the Metropolitan is by far the largest business organization in the United States, and the Prudential is nosed out for second place by a mere $400,000,000. In fact, there are only nine corporations in the country as large or larger than the smallest of these five life insurance companies—three industrials, two public utilities, and four railroads.[21]

These five insurance giants, located in New York City and Newark, N. J., are surrounded by a host of companies that seem small only by comparison. For the next 11 companies hold 26 percent (6.8 billion dollars) of total life insurance assets, and the following 9 companies hold 7 percent (1.7 billion dollars). The 25 largest companies hold 87 percent (22.8 billion dollars) of the total; the remaining 283 companies hold 13 percent (3.4 billion dollars).

Other financial and savings institutions show a similar though smaller concentration. The 543 mutual savings banks in 1939 held 11.6 billion dollars of assets, but the 25 largest banks held 42 percent of the total. The 14,000 commercial banks in 1938 held 56.8 billion

[20] Hearings before the Temporary National Economic Committee, Part 9, pp. 3751–3768, 4057–4059.

[21] Assets in 1935 (in millions): Standard Oil Co. (N. J.), $1,895; United States Steel Corporation, $1,822; General Motors Corporation, $1,492; American Telephone & Telegraph Co., $3,998; Consolidated Edison Co. of New York, $1,377; Pennsylvania Railroad Co., $2,863; New York Central Railroad Co., $2,356; Allegheny Corporation, $1,379; and Southern Pacific Co., $1,678. See National Resources Committee, Structure of the American Economy, 1939, pp. 274–276.

dollars of assets, but the 50 largest (being one-third of 1 percent of the total number of banks) held 46 percent of the assets. The building and loan associations are probably the least concentrated of all the savings institutions.

The institutionalization of savings has the following characteristics: on the one hand are millions of persons employing the various savings processes; on the other hand is a relatively small number of savings and financial institutions, in many cases interlocked through common officers and directors, that hold, manage, and control these savings. The extent of the concentration on the latter side has been sketched, and it may be of interest to indicate the extent of the dispersion on the former. In 1937–38 there were, with many duplications, of course, in any class and among classes, 35,000,000 ordinary life policies, 89,000,000 industrial policies, 31,000,000 savings depositors in commercial banks, 14,000,000 depositors in the mutual savings banks, 6,000,000 members of building and loan associations, and 3,000,000 depositors in the Postal Savings System.[22] The interest of millions of people in these savings institutions—even though these interests are themselves highly concentrated [23]—explains why the Federal Government found it necessary during the depression to support both the debt structure of the economy and the solvency of the great financial institutions. As Senator O'Mahoney summarized the situation:

> Those who contend that every institution, the whole system, should have been permitted to go through the wringer, as the phrase has it, are overlooking, are they not, the fact that we are no longer living in an individual economy, but we live in a corporate economy, represented by the aggregation of these tremendous assets by large institutions.[24]

It is equally necessary to recognize that concentration of savings brings power and great responsibility to a handful of individuals. Again in the Senator's words, it may be said that:

> The whole economy of the whole people, and of the whole 48 States, depends upon the skill with which that discretion is carried out by the persons who are directing the investment of these huge savings.[25]

Badly directed investment will distort the directions of economic activity, and failure to invest will lower the level of economic activity.

CONCENTRATION THROUGH MANAGEMENT AND INVESTMENT POLICIES OF LIFE INSURANCE COMPANIES

The Securities and Exchange Commission made an exhaustive investigation of legal reserve life insurance companies for the Temporary National Economic Committee.[26] These companies were the only savings institutions investigated by the Temporary National Economic Committee. It has been pointed out, however, that life insurance companies held 42 percent of the assets or funds of the principal savings institutions in 1938, and that they are absorbing a larger share of the national income now than before the depression. Life insurance companies, therefore, constituted the most important single study

[22] Hearings before the Temporary National Economic Committee, Part 9, p. 4063.
[23] See chapters on "Concentration of Ownership" in the Final Report of the Temporary National Economic Committee.
[24] Hearings before the Temporary National Economic Committee, Part 9, p. 3774
[25] Hearings before the Temporary National Economic Committee, Part 9, p. 3766.
[26] This had been recommended by President Roosevelt in his message suggesting an investigation. See S. Doc. 173, 75th Cong., 3d sess., April 12, 1938. The committee heard 131 witnesses in this connection between February 6, 1939, and March 1, 1940, whose testimony has been published in Hearings before the Temporary National Economic Committee, Parts 4, 10, 10A, 12, 13, and 28.

that could be made of savings institutions. Since they interlock with other financial institutions, particularly the commercial and mutual savings banks, and since life insurance managements seem not untypical of financial managements in general, it is not unreasonable to assume that much of the testimony presented with respect to life companies may be applicable to the other savings institutions.

Management of Life Insurance Companies

Who manage and control the life insurance companies? The affiliations, interests, control, and concentration represented by the directors and officers of life insurance companies have been investigated three times since 1906. They were investigated by the Armstrong committee in 1906,[27] by the Pujo committee in 1913,[28] and by the Temporary National Economic Committee. All have shown that the life insurance industry is managed and controlled by a small number of men, and that the geographical and size concentration within the field is accompanied and accentuated by a concentration of control in the individual companies.

Unfortunately, no adequate study has ever been made of the sociological, educational, and psychological factors characteristic of the management and directors of life insurance companies.[29] In the absence of such a study it is possible only to call attention to various factors which condition the outlook of the persons who are the principal executives of the largest life insurance companies.[30] They are old: of the 44 principal executives of the largest stock and mutual life insurance companies, 33 are between 60 and 80 years of age, and only 2 are under 50. They are not drawn equally from all geographical areas: of the 43 born in the United States, 19 were born in the Northeast and 13 in the Middle West. Their job tenure is not subject to unemployment: of the 36 who stated the number of years they had been principal executive, 22 had held that office (or another closely associated with it) for ten years or more. They went to college: 33 of the 44 went to college, many to graduate schools. Their experience and training have generally been outside the field of insurance: 15 were lawyers, 10 were businessmen, and 5 were actuaries; only 12 had been insurance men other than actuaries. Their other business connections are largely financial: of the 30 reporting business affiliations, 21 were associated primarily with financial enterprises, and 9 primarily with industrial enterprises. Almost without exception they are at the present time in the upper income brackets: the average salary of the principal officers of the 25 largest mutual companies was $53,664 in 1938, with the presidents of the Metropolitan and the Mutual Life receiving $125,000, those of the Prudential and New York Life $100,000, and that of the Equitable $75,000. The average salary of the principal officers of the 25 largest stock companies was $34,364, with 7 of the companies paying $50,000 or more.[31] Less than three-

[27] Report of the Joint Committee of the New York State Senate and Assembly to Investigate the Life Insurance Companies, February 12, 1906.

[28] Report pursuant to H. R. 429 and 504, 1913.

[29] Life insurance companies have made many studies of what makes a good agent, none of what makes a good executive. Little is known of the characteristics of the executive group. See "The 30,000 Managers," Fortune, February 1940. Some specialized groups have been studied, e. g., Leo C. Rosten, Washington Press Correspondents, Harcourt Brace, New York, 1938; A. W. MacMahon and J. D. Millett, Federal Administrators, Oxford, N. Y., 1939; N. N. Gill, the Municipal Research Bureau (a dissertation in progress at the University of Chicago).

[30] The following discussion is based upon data in Who's Who, 1940, and Who's Who in Commerce and Industry, 1939, with respect to the principal executive in each of the major mutual and stock companies. The list of principal executives was compiled by the Securities and Exchange Commission.

[31] For the executive salary scale of the major companies, see Hearings before the Temporary National Economic Committee, Part 13, Exhibit 1346, p. 7011.

tenths of 1 percent of American families have incomes as large or larger than the salaries of these life insurance company executives. They naturally move in the social and economic groups which such incomes make possible: they live in high rent city or suburban areas. They belong to many exclusive town and country clubs. In response to the geographical concentration of the insurance business they live in the East. They may be said to be characterized by an urban outlook.

On the basis of these conditioning characteristics certain highly tentative suggestions may be developed with respect to investment policy. They may be expected to prefer large transactions and investments, apart from the relative costs involved, to small ones; and to prefer security and conservatism in the form of conventional accounting ratios rather than in "character" as the old country banker knew it.[32] These conditioning characteristics may help to explain, too, why insurance executives uniformly opposed liberalization of legal investment requirements, despite the fact that they found great difficulty in investing their funds under present conditions.[33]

Interlocking relationships of officers and directors.—Life insurance officers and directors have varied and far-flung financial and industrial connections. Data presented to the Temporary National Economic Committee indicated the facts with respect to the business affiliations of 135 directors on the boards of the 5 largest insurance companies—Metropolitan, Prudential, New York Life, Equitable, and Mutual Life. This group of 135 directors also served as directors of 100 other insurance companies, 145 banks or other financial institutions, and 534 industrial, real estate, or miscellaneous corporations. Each director of these 5 largest life insurance companies was on the average a director of 6 other corporations.[34] The life insurance directors studied are predominantly directors of the "blue chip" industrials and public utilities.[35]

These 5 life insurance companies are interlocked through common directors with 23 large commercial banks having total assets of almost 16 billion dollars. Their interlocking relationship is particularly strong with the New York City banks. These 5 major insurance companies have 2 or more directors in common with 12 of the largest New York City banks, including the National City, Chase, Guaranty, Bankers Trust, First National Bank, and Irving Trust; and they interlock with practically every large commercial and savings bank in the New York City area. There are 48 interlocking directors between the 5 largest insurance companies and 13 commercial banks in New York City.[36] Furthermore, bank directors fre-

[32] For example, Mr. Thomas D. Buckner testified that his company, the New York Life Insurance Co. usually desired to make an investment in excess of $100,000. Hearings before the Temporary National Economic Committee, Part 28, p. 14754. And the following colloquy involving Mr. John W. Stedman, Vice President of the Prudential Life Insurance Company, is interesting. Hearings before the Temporary National Economic Committee, Part 28, p. 15269. After agreeing that his company would want at least a 10-year certified balance sheet of any industrial company in which investment was contemplated, he was asked:

The VICE CHAIRMAN. Right on that point, will you develop whether or not an indisposition to purchase the securities of a new business venture is controlling?

Mr. STEDMAN. It would not be, in our judgment, suitable for the funds of life insurance: in other words, it is not a trustees' investment.

The VICE CHAIRMAN. Would no other consideration balance against the absence of a 10-year record?

Mr. STEDMAN. I think when we look back over the past 10 years I have to say no.

[33] See infra, pp. 39–42.

[34] Compiled from a questionnaire by the Securities and Exchange Commission.

[35] Including United States Steel Corporation, Bethlehem Steel Corporation, Great Atlantic & Pacific Tea Co., American Telephone & Telegraph Co., Consolidated Edison Co. of New York, Atchison, Topeka & Santa Fe Ry. Co., General Electric Co., and E. I. Du Pont de Nemours & Co. (Data compiled from replies to a Securities and Exchange Commission questionnaire.)

[36] Hearings before the Temporary National Economic Committee, Part 13, p. 7006.

quently occupy strategic positions on insurance company boards through their assignment to the important financial committees which have general charge of the investment of insurance company funds.[37]

Nomination and election of directors.—Life insurance executives and directors constitute a small group that is largely self-appointing and self-perpetuating. The facts may be discussed first with respect to the mutual companies, which control $22,000,000,000 of assets, and, secondly, with respect to the stock companies, which control $5,000,000,000 of assets.

The mutual companies are owned by their policyholders. They are operated on the principle that each policyholder is entitled to one vote regardless of his financial stake in the company and of the amount of insurance he carries. The election mechanism and the legal election requirements make it difficult to nominate or to elect any director who is not sponsored by the management.[38] Though the policyholders are widely scattered, New York State's insurance statutes require that individual nominations be supported by a petition of one-tenth of 1 percent of the number of existing policyholders.[39] In the case of the Metropolitan Life Insurance Co., with its 25,000,000 policyholders, this requires a nominating petition signed by 25,000 policyholders. Securing such a large number of signatures, under the most favorable circumstances, is a difficult and expensive undertaking. No policyholder would be financially justified in doing so.

Furthermore, the companies do not have readily available a complete list of all policyholders, and the Metropolitan and the Prudential indicated that they would find it difficult to prepare one.[40]

Nomination is thus in the hands of the management.

Election of the slate selected by the management is a foregone conclusion. Voting in most cases is a formality.[41] In 1938, for example, the directors of the Equitable Life Assurance Society were elected by 532 votes, which were cast for one-twentieth of 1 percent of the eligible voters. In that year 1.8 percent of the Metropolitan's and 2.5 percent of the Prudential's potential votes were cast.[42] In the case of four elections of the Mutual Life which were examined a majority or all of the votes were cast by company employees who were also policyholders.[43] But even the small number of votes suggested by these illustrations is larger than the number required for election. According to section 94 of the New York insurance law a single vote is sufficient to elect the slate if no independent nomination has been made—and there has been no contested election in New York in 15 years, except in the case of one small mutual assessment company in

[37] Data compiled from replies to a Securities and Exchange Commission questionnaire.

[38] It was indicated before the Temporary National Economic Committee that the Metropolitan first advertised the fact that an election was to take place after the close of the period within which the policyholders might make independent nominations. Hearings before the Temporary National Economic Committee, Part 4, pp. 1297–1298.

[39] Hearings before the Temporary National Economic Committee, Part 4, pp. 1397, 1405–1406.

[40] For the Prudential, see Hearings Before the Temporary National Economic Committee, Part 12, p. 5921. The Metropolitan said that it had a card record of all persons carrying ordinary life insurance policies, and that it could prepare a list from this file. But this would be insufficient. Though ordinary life insurance policyholders in the Metropolitan pay for the bulk of the outstanding insurance, they constitute less than 10 percent of the total number of policyholders. More than 90 percent of the total number of potential voters are industrial policyholders. The home office has no list of industrial policyholders. These lists are decentralized and kept in the various branch agencies charged with the collection of premiums. Ibid., Part 4, pp. 1305–1306.

[41] But data were presented to indicate that even the formalities were not correctly observed. See Hearings Before the Temporary National Economic Committee, Part 4, pp. 1295–1296, 1302–1303, 1313–1369, 1398, 1409–1410, and Part 12, pp. 5924–5925.

[42] Hearings Before the Temporary National Economic Committee, Part 4, p. 1552.

[43] Hearings Before the Temporary National Economic Committee, Part 4, pp. 1391–1392.

1932.[44] Consequently, the mechanical and stereotyped methods used to advise policyholders of their right to vote make little difference in the election results.[45] Some policyholders learned for the first time, as a result of the insurance hearings, that they had the right to vote.[46]

The absence of any effective democratic control within life insurance companies has been noted many times.[47] In 1927, James A. Beha, superintendent of insurance of the State of New York, described it as follows:

> All of the directors of our mutual life insurance companies are men of affairs, men of good standing in their respective communities, and men of honor and ability. They serve on these boards as directors for a nominal fee. They are active in their own special work and undertakings, and can give only limited consideration to the affairs of these life insurance companies.
>
> While nominally elected by the policyholders, they are actually selected by the management of each of the companies themselves. Section 94, which provides for the election of directors, while intended to give policyholders a voice in the selection of directors, nevertheless sets up a plan which is not workable to accomplish its object, and, as already stated, the directors are, for all intents and purposes, selected by the management of the company. It is these directors so selected who in turn elect the officers of the companies and are expected to supervise their management.[48]

The hearings before the T. N. E. C. indicated that the situation described in 1927 prevails today. Indeed, the question may be raised whether, in view of the record of the lack of control by policyholders and the scale and complexity of the operations of the larger companies, effective democratic control by policyholders is possible and if it is, whether it would substantially improve the efficiency of management.

The nomination and election of officers and directors of stock life insurance companies present a different aspect. Stock companies are legally controlled by their stockholders; and special studies by the Securities and Exchange Commission indicate that officers and directors frequently own a majority stock interest, and in almost all other cases, a substantial minority interest. The continuity of management in these companies suggests that such stock interest, coupled with control of the proxy machinery (and in some cases, the use of long term proxies) connotes effective control. On the other hand, policyholders contribute the bulk of the companies' funds. The ratio of policyholders' liabilities to total assets in the seven largest stock companies ranged from 82 percent to 95 percent.[49] Furthermore, six of these seven companies have participating policies outstanding. These policyholders have the right to share in the profits, but determination of the size of that share is the right of the stockholders.

Investment Policies of Life Insurance Companies

In the 10 years from 1929 through 1938 the 26 largest life insurance companies acquired bonds, mortgages, and other assets totaling $26,000,000,000; in 1938, they made investments of $3,600,000,000, an average of $12,000,000 per working day.[50] The volume of funds handled by life insurance companies would by itself require an exami-

[44] Hearings Before the Temperary National Economic Committee, Part 4, pp. 1405–1406.
[45] Hearings Before the Temporary National Economic Committee, Part 4, pp. 1553–1555.
[46] Hearings Before the Temporary National Economic Committee, Part 4, p. 1403.
[47] Hearings Before the Temporary National Economic Committee, Part 4, pp. 1555–1557.
[48] Hearings Before the Temporary National Economic Committee, Part 4, p. 1557, quoting from New York State Insurance Report, 1927, Part 1, pp. 8-9.
[49] Hearings before the Temporary National Economic Committee, Part 10A, p. 101.
[50] Hearings before the Temporary National Economic Committee, Part 10A, pp. 94–95.

nation of their investment policies. But these policies have a qualitative as well as a quantitative significance. The importance of these investment policies is enhanced by the dominant position of insurance companies in present-day securities markets and by the position of leadership of insurance executives and directors in financial matters, a leadership that interlocking relationships facilitates. The choice which life insurance executives make among alternative channels of investment is an extremely important one for the working of the economy. The levels of interest rates, investment, national income, and employment are all determined in part by how and where life insurance funds are invested. In these circumstances it becomes a matter of vital concern to examine the legal restrictions and the investment policies and practices of the life insurance companies.

Legal requirements.—The investment policies of the major savings institutions are circumscribed by law. These legal requirements vary from State to State and from one type of savings institution to another. To simplify the discussion, the situation in New York alone will be described. This may be justified by the facts that the assets of the major savings institutions are to a substantial extent concentrated in New York, and that at least 25 States have modeled their requirements on New York's.[51]

The investments of savings banks and trustees of New York are largely governed by the "legal list." William R. White, Superintendent of Banks of the State of New York, described the legal list as follows:

> The legal list is a document published annually by the New York State Banking Department. It lists the securities which, in the opinion of the superintendent of banks, comply with the standards prescribed in section 235 of the banking law and which are therefore, in his opinion, legal for investment for savings banks and for trustees. The fact that securities are excluded from the list is not to be taken as definitely meaning that those securities are not legal. However, the fact that securities are included in the list affords some protection to savings banks and trustees investing in those securities and, in fact, investment in other securities is barred by savings banks and by trustees unless the instrument creating the trust authorizes investment beyond the list.[52]

White further testified that the great majority of States have legal lists similar to the one in New York, and that some States incorporate by reference the New York legal list without setting up one of their own.[53]

Apart from obligations of the United States, all of which are eligible for investment, the legal list in 1931, the last year the list reflected the predepression situation, consisted of:

Obligations of States	$2, 301, 000, 000
Obligations of municipalities	8, 773, 000, 000
Obligations of railroads	7, 602, 000, 000
Obligations of utilities	2, 166, 000, 000
Total	20, 842, 000, 000

The situation has not changed materially since 1931, except for the railroads. By 1939 less than 1 billion dollars of railroad securities could have met the 1931 standards, though 2.5 billion dollars remained on the list because the statutory requirements had been relaxed.[54]

[51] Hearings before the Temporary National Economic Committee, Part 9, p. 3803.
[52] Hearings before the Temporary National Economic Committee, Part 9, p. 3793.
[53] Hearings before the Temporary National Economic Committee, Part 9, p. 3794.
[54] Hearings before the Temporary National Economic Committee, Part 9, pp. 3794-3795, where the legal requirements are outlined.

In the face of this contraction, the only move to liberalize the scope of the legal list was an amendment to the banking law in 1938 authorizing the State Banking Board, upon application of a group of savings banks, to add to the legal list corporate interest bearing obligations not otherwise eligible for investment. The additions to the list by petition have not been substantial. Since the passage of the amendment the Board has added debentures totaling 577 million dollars.[55]

White was of the opinion that the legal list was unduly restrictive in some respects. He suggested that the securities of other industries—specifically foods, oils, tobaccos, and steel—might be made available for investment.[56] He thought, too, that "there are undoubtedly a substantial number of corporations which fail to meet the technical requirements of the banking law, but whose securities might properly be considered as investments for savings banks or for trustees." [57] He pointed out that the securities which had been on the legal list but had been removed would need a period of reseasoning before they became reeligible. If a railroad or a public utility defaulted on its securities and was then reorganized, its new securities would not be placed upon the legal list, regardless of the future prospects of the company, until at least 6 years had elapsed.[58] It may be interesting to note that the investigation of protective and reorganization committees indicated that municipalities recognized this and frequently went to great lengths to disguise or cure defaults, since they realized that one default might deprive them of their institutional market for many years.[59]

The New York regulations governing the investments of life insurance companies are somewhat broader than those governing the investments of savings banks and trustees.[60] Rather than describe these in detail, it may be more informative to summarize the provisions governing life insurance company investments in 11 States, including the principal States in which the 26 largest companies operate:

> Some of the States are more liberal than others, but in general the legal restrictions are somewhat similar. Generally speaking Government obligations of the United States and its various political subdivisions are eligible for investment and loan purposes, as are the obligations of the Dominion of Canada and its Provinces. Many of the States permit investments in obligations of political subdivisions in Canada, while a few authorize direct investment in Canadian industrials.
>
> Corporate obligations of some companies are legal investments in all States under a wide range of restrictions, limitations, and earnings requirements. Two of the States reviewed, that is, Wisconsin and Iowa, permit the acquisition of corporate shares of any description, while two, New York and Ohio, specifically prohibit investment in common stocks. The other seven States permit investments in common stocks under various limitations.
>
> Loans on mortgages secured by real estate in the United States are generally permitted while some States permit loans on mortgages secured by real estate in Canada.

[55] Hearings before the Temporary National Economic Committee, Part 9, p. 3799. These debentures were issued by the following companies: American Telephone & Telegraph Co., Liggett & Myers Tobacco Co., Mountain States Telephone & Telegraph Co., Socony Vacuum Oil Co., and Southern Bell Telephone & Telegraph Co.

[56] Hearings before the Temporary National Economic Committee, Part 9, p. 3796.

[57] Hearings before the Temporary National Economic Committee, Part 9, p. 3795.

[58] Hearings before the Temporary National Economic Committee, Part 9, p. 3795.

[59] See Securities and Exchange Commission, Report on Protective and Reorganization Committees, Part IV, Committees for the Holders of Municipal and Quasi-Municipal Obligations, 1936, pp. 9–12. Cf. the testimony of Mr. L. Arnold Frye, that in the event of default: "The market for its [the municipality's] bonds is very much limited, and in consequence their value is diminished, because most of the institutions—and they are the largest buyers—whether or not they are required under the statute relating to fiduciaries and trustees and so forth, do in fact usually govern their purchases by the provisions of those acts and do not buy the bonds which are not on the legal list" (p. 10).

[60] Hearings before the Temporary National Economic Committee, Part 9, p. 3805.

Mortgage loans in all cases examined are restricted to first liens and may be made up to various percentages of the appraised value of the real estate at the date the loan is made.

This percentage is 66⅔ percent in all of the 11 States examined except Massachusetts and Iowa, which permit 60 percent, and Wisconsin, which permits loans only to the extent of 50 percent. In New Jersey, while the general provision is 66⅔ percent, under certain circumstances mortgages up to 75 percent of the appraisal value may be made. All States permit policy loans. In every instance, investment in real estate is definitely restricted to the business needs of the company although real property acquired as the result of foreclosure or in satisfaction of debts previously contracted may be held for a limited period.[61]

The Metropolitan and the Prudential, however, have constructed housing projects in accordance with special enabling legislation. The Lockwood Act of 1922 and a similar act in 1938 permitted the Metropolitan to construct two large-scale residential developments in New York City;[62] and the Prudential has entered into a slum clearance project in conjunction with the city of Newark, N. J.[63]

The supply of securities.—With the exception of United States Government securities, the supply of securities available for investment since 1929 has not kept pace with the flow of savings to savings institutions. While the annual flow to these institutions, and particularly to life insurance companies, has continued at high levels, the amount of all securities outstanding and available for purchase, except Federal securities, has decreased. Default and unfavorable earnings have removed $5,000,000,000 of railroad securities from the legal list since 1931. An excess of retirements over new issues of public utility securities decreased the outstanding supply in that field by $739,000,000 from 1933 through 1939. The volume of outstanding State and local securities, and of foreign securities, decreased from 1933 through 1939. Federal securities alone showed an increase during the period, as indicated in table 9.

TABLE 9.—*Net change in the outstanding amount of the principal classes of securities, 1933–39*

[Excess or deficit (−) of new issues over retirements]

[Millions of dollars]

Year	Federal	State and local	Domestic corporate		Foreign	Total
			All	Public utilities		
1933	2,010	−350	−350	−109	10	1,320
1934	4,690	−460	−90	−17	−210	3,930
1935	1,450	40	20	134	−90	1,420
1936	4,340	−20	820	212	−190	4,950
1937	3,200	−90	−490	−628	−230	2,390
1938	3,174	269	242	−34	−30	3,655
1939	3,111	179	−313	−297	−26	2,951
Total, 1933-39	21,975	−432	−161	−739	−766	20,616

Source: Securities and Exchange Commission, Selected Statistics on Securities and on Exchange Markets, 1939, pp. A-1 to A-3. Data for 1938 and 1939 have not yet been published.

In view of the restricted supply of eligible private securities, the increase in life insurance company holdings of cash and Federal securities, and White's testimony as to the undue restriction, in some

[61] Hearings before the Temporary National Economic Committee, Part 28, pp. 14800-14801.
[62] Hearings before the Temporary National Economic Committee, Part 11, p. 5129.
[63] Hearings before the Temporary National Economic Committee, Part 11, p. 5081.

respects, of State regulation of investments, the attitude of life insurance executives toward the desirability of broadening the legal list is particularly pertinent.

The insurance company executives were of the opinion that the existing regulations should be maintained. The president of the New York Life testified that the present restrictions seemed satisfactory, and that his company would like to be able to find more investments in the fields where they already were rather than to extend their investments to other fields. He added that his company had no desire to invest in common stocks.[64] A vice president of the Prudential (a New Jersey corporation) gave the following opinion:

> Mr. GESELL. You would feel then that the present investment laws under which you operate, namely, the laws of New Jersey, are sufficiently liberal for your purposes, and even if they were removed you would probably be still investing in the same field in which you are now investing.
> Mr. STEDMAN. I think that is correct.[65]

A vice president of the Mutual Life testified that "I think that our law [in New York] is liberal enough for us to purchase any sound, high-grade industrial bonds we would consider suitable for our investment purposes." [66]

Specific investment policies and practices.—Within the limitations imposed by legal lists and other legal requirements, the managers of life insurance companies and other regulated financial institutions have wide latitude. The investment policy actually followed depends upon the membership and outlook of the management group and the type of investment standards that group accepts as "sound."

It is impossible in this section to discuss in any detail the composition and year-to-year shifts of life insurance company assets.[67] It is sufficient at this point to note that during the period 1929–38 the composition of the assets of the 26 largest legal reserve life insurance companies domiciled in the United States changed markedly.[68] Cash and bank deposits, Government bonds, and real estate became relatively larger constituents in total assets; farm and urban mortgages became relatively less important; and policy loans and private securities (railroad, public utility, and other stocks and bonds) retained approximately their relative positions.[69]

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[64] Hearings before the Temporary National Economic Committee, Part 28, p. 14753.

[65] Hearings before the Temporary National Economic Committee, Part 28, p. 15278.

[66] He added that he thought great care should be exercised in liberalizing laws and lowering standards because, as he explained, "It is not that I have fear in strong companies. It is the weak companies that would take advantage of that liberality." (Hearings before the Temporary National Economic Committee, Part 28, p. 15306.) This opinion is interesting in the light of the testimony by Mr. Alfred Best, editor of some of the best known insurance statistical publications. Mr. Best discussed the 19 life insurance company failures in 1930–38. In his opinion, the general cause of these failures was the holding of too much home office real estate, except that in one case it was the holding of too much stock in other life insurance companies, and in another it was an investment in a speculative real estate scheme in the Texas grapefruit area. Hearings before the Temporary National Economic Committee, Part 28, pp. 15383–15414.

[67] These matters are discussed in detail in Temporary National Economic Committee Monograph No. 28, Study of Legal Reserve Life Insurance Companies, by Gerhard Gesell and Ernest Howe.

[68] The 26 companies to which the discussion in this section is confined are as follows: Metropolitan Life Insurance Co., the Prudential Insurance Co. of America, New York Life Insurance Co., the Equitable Life Assurance Society of the United States, the Mutual Life Insurance Co. of New York, the Northwestern Mutual Life Insurance Co., the Travelers Insurance Co., John Hancock Mutual Life Insurance Co., the Penn Mutual Life Insurance Co., the Mutual Benefit Life Insurance Co., Massachusetts Mutual Life Insurance Co., Aetna Life Insurance Co., New England Mutual Life Insurance Co., the Union Central Life Insurance Co., Provident Mutual Life Insurance Co., the Connecticut Mutual Life Insurance Co., Connecticut General Life Insurance Co., Phoenix Mutual Life Insurance Co., Bankers Life Co., National Life Insurance Co., Pacific Mutual Life Insurance Co., State Mutual Life Assurance Co., Equitable Life Insurance Co. of Iowa, the Western and Southern Life Insurance Co., the Lincoln National Life Insurance Co., the Guardian Life Insurance Co. of America. (Hearings before the Temporary National Economic Committee, Part 10A, pp. III–IV.)

[69] These summaries refer to the 49 major companies covered in the reports of the Association of Life Insurance Presidents. See Hearings before the Temporary National Economic Committee, Part 4, pp. 1518–1519.

1. Cash: The cash holdings of the 26 largest legal reserve life insurance companies increased by more than 500 million dollars from 1929 to 1938, or from 102 million dollars to 665 million dollars; the Metropolitan and the Equitable each held more cash in 1938 than all 26 companies held in 1929.[70] Cash holdings increased approximately 40 percent between December 1938 and August 1940.[71]

These cash and bank balances earned negligible amounts of interest. In 1929 the 26 companies together earned $3,700,000 upon their cash balances; in 1938, only $273,000. In 1929 all of the 26 companies reported interest income on cash balances; in 1938, after the cash holdings of the 26 companies had grown by 650 percent, 7 companies earned nothing, and another 7 earned less than $1,000. The New York Life, for example, reported $43 of interest income during 1938 on cash balances aggregating 50 million dollars. The Prudential reported no interest income during the year on 95 million dollars of cash.[72]

All the executives who were questioned agreed that their cash holdings were greatly in excess of the amount normally required in the business. They explained that they held excess cash because they were unable to find investment outlets.[73] There was no evidence that their inability to find investments, even in low-yield, short-term governments, was the result of any concerted investment policy. It should be pointed out, however, that the companies, even apart from their recent increases in cash, are probably more liquid than ever before by reason of their large holdings of governments. It would be to the advantage of any one company to invest its surplus cash; and if other companies followed suit, the competition would undoubtedly have a marked effect upon both long and short-term interest rates.

2. Government bonds: Life insurance companies, together with other savings institutions have invested heavily in Government bonds since the depression. United States Government bonds constituted 2 percent of the assets of the 26 largest companies in 1929, 18.6 percent in 1938, and almost 19 percent in 1939.[74] The yield on long-term United States Governments has at the same time fallen sharply, from 3.60 percent in 1929 to 2.36 percent in 1939. The yield of shorter term obligations has declined even more sharply. If the experience of one company discussed during the hearings is any guide, the life insurance companies have made relatively heavy investments in the shorter term maturities, for it was stated that this company in 1937 earned only 1.9 percent on its governments.[75] The witnesses generally agreed that the insurance companies invested in governments because they could not find any higher yield securities elsewhere, and because the decline in the yield on government securities was symptomatic of the decline in the yield of all classes of securities.[76]

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[70] Hearings before the Temporary National Economic Committee, Part 10A, pp. 98–100.

[71] On the basis of reports of 35 companies reporting currently to the Association of Life Insurance Presidents, the cash holdings of these companies were 635 million dollars at the end of 1938, 763 million dollars at the end of 1939, and 888 million dollars in August 1940. See Bureau of Foreign and Domestic Commerce, Survey of Current Business.

[72] Hearings before the Temporary National Economic Committee, Part 10A, pp. 106–7. The Pacific Mutual was the only company to earn a noticeable return on its cash holdings. Of its total cash holdings of 3.9 million dollars, 3.4 million dollars were at interest in California banks in 1938, and earned $39,944 interest, or more than all the other companies except two. Hearings before the Temporary National Economic Committee, Part 28, p. 14824.

[73] Hearings before the Temporary National Economic Committee, Part 28, pp. 14758, 15243, 15247, 15295–15296.

[74] Hearings before the Temporary National Economic Committee, Part 10A, p. 98. Data for 1939 are estimated from the reports of a larger number of companies reported in the Bureau of Foreign and Domestic Commerce, Survey of Current Business.

[75] Hearings before the Temporary National Economic Committee, Part 4, p. 1225.

[76] Hearings before the Temporary National Economic Committee, Part 28, p. 15260, 15295–15298, 15318.

It may be interesting to note, however, that although personal income taxes have increased the relative advantages to individuals of holding tax exempt securities, there has been a narrowing in the spread between interest rates on governments and those on the highest grade private securities.[77] This declining spread is in considerable part to be explained by the acquisition of government bonds by public institutions, and by private institutions to whom tax exemption presents less advantage than to individuals.

3. Corporate bonds and notes: Life insurance companies confine their investments in corporate bonds and notes to the issues of large corporations. With regard to the New York Life, for example, the president was questioned as follows:

The CHAIRMAN. That is to say, your industrial investments are practically confined to the offerings of the large corporations?
Mr. BUCKNER. The large corporations.[78]

Buckner also testified that the minimum investment by his company was $100,000.[79] The testimony with regard to the Prudential indicated that corporate investments were made in sizable blocks. Indeed, the growth of the practice of private placement, i. e., the direct sale of securities by an issuing corporation to one or more insurance companies, indicates the magnitude of investment purchases most clearly.[80] A vice president of the Prudential did describe the efforts of his company to make "small industrial loans," explaining that even in this class "we didn't want to go much below one hundred thousand, possibly fifty." In this range, certainly not the range of "small business," the Prudential found that it could make only two loans in 18 months through the efforts of one full-time man.[81]

4. Policy loans: A policy loan is a loan made by a life insurance company to a policyholder secured by his policy. Policy loans are the safest and highest-yield type of investment of life insurance companies. In 1932, when policy loans were 17.5 percent of total assets, they were responsible for 22.8 percent of total investment income. In 1938, when policy loans were 11.6 percent of total assets, they were responsible for 18.7 percent of total investment income. The 26 companies averaged a return of 5.79 percent upon their policy loans in 1938, in comparison with 4.95 percent upon stocks, 4.74 percent upon mortgages, and 3.47 percent upon bonds.[82]

The high interest rates charged on policy loans are not based upon compensation for risk, since there is no risk, in this type of investment. Policy loans constitute a riskless investment—safer even than United Government bonds:

Mr. LUBIN. And is there any other type of investment an insurance company could make that would be as sound as such a loan?
Mr. HOWE. There is no possibility of loss involved in a transaction of that sort so long as the thing is accurately handled mechanically.

* * * * * * *

[77] In 1925 the spread between the average yield on Moody's Aaa corporate bonds and the average yield on long-term United States Government bonds was 1.02 percent; in 1929, 1.13 percent; in 1933, 1.18 percent; in 1938, 0.63 percent. (Yield on Moody's Aaa corporates from the Bureau of Foreign and Domestic Commerce, Survey of Current Business, 1940 Supplement, p. 51; yield on long-term governments from Secretary of the Treasury, Annual Report of the Secretary of the Treasury, 1939, p. 486.) The spread shown by the Treasury's current indexes, published in the Treasury Department Bulletin (discussed in the issue of July 1939, p. 20), as of January, is as follows: 1937, 0.62 percent; 1938, 0.52 percent; 1939, 0.49 percent; 1940, 0.51 percent.

[78] Hearings before the Temporary National Economic Committee, Part 28, p. 14755.

[79] Hearings before the Temporary National Economic Committee, Part 28, p. 14754.

[80] This is discussed infra, pp. 61–65.

[81] Hearings before the Temporary National Economic Committee, Part 28, p. 15270.

[82] Hearings before the Temporary National Economic Committee, Part 10A, pp. 8–10, 102.

Mr. LUBIN. So in reality, the return is largest on the safest investment you can make.

Mr. HOWE. That is right.[83]

The interest rate on policy loans is set forth in the policy contract. The contract rate was 6 percent until 1937, when a few of the major companies reduced the contract rate of interest on new policies to 5 percent. A year later some of them extended the privilege of loans at 5 percent to old policyholders.

Even with these reductions, the decline in the rate of interest on policy loans was much less than the decline in the rate of interest on any other type of investment. Life insurance company executives offered no clear explanation of this differential. Considerations of safety would have reduced the differential in favor of policy loans. The expense of making such loans is not great and cannot by itself account for the bulk of the differential.[84] No witness mentioned the fact that it might be necessary to keep the rates high merely to discourage borrowing, though Thomas D. Buckner indicated that policy loans were frequently followed by surrender of the policy.[85] No evidence was introduced to the effect that life insurance companies might have agreed on a uniform interest rate, though a large amount of testimony indicated the presence of inter-company agreements with respect to rates, surrender charges, and other important aspects of the business.[86]

The question may be asked why policyholders, in view of these differentials, did not borrow from commercial banks, assigning their policies as collateral. (They had to make such assignments in borrowing from insurance companies.) The answers to this question are revealing:

(1) Though such loans presented practically no risk, they were not of the traditional commercial loan type that banks cared to make.

(2) Though interest rates fell during the 1930's, they fell very unevenly. The rates on term loans to the larger corporations fell drastically; the rates on the better type of mortgage loans fell appreciably, in considerable part because of the activity of Government lending agencies. The rates on personal loans, however, fell least. For several years, therefore, there was no great advantage in borrowing money from a commercial bank rather than a life insurance company. Since 1936 or 1937 the further decline in interest rates and the increasing pressure of excess reserves have increased the willingness of commercial banks to make policy loans. For the first time one now sees advertisements of the willingness of commercial banks to make loans on life insurance policies at 4 percent.[87]

(3) There may have been one other factor in the situation, illustrated by the attempt by a $50,000 a year advertising executive to borrow $20,000 upon a policy which had a cash surrender value of more than this amount. A life insurance agent acted on behalf of the assured in attempting to obtain the loan from a New York City

[83] Hearings before the Temporary National Economic Committee, Part 28, p. 14808.

[84] The cost as nearly as could be ascertained was said to be one-half of 1 percent per year. (Hearings before the Temporary National Economic Committee, Part 28, p. 15524, correcting hearings before the Temporary National Economic Committee, Part 28, p. 14739.) There are, of course, costs involved in making other investments.

[85] Hearings before the Temporary National Economic Committee, Part 28, p. 14737.

[86] Generally discussed in Hearings before the Temporary National Economic Committee, Part 10.

[87] Cf. hearings before the Temporary National Economic Committee part 28, pp. 14815.

bank. The bank did not make the loan, and wrote the insurance company that—

As you know, we find it difficult to obtain good loans today, but nevertheless do not feel that we should take policy loans away from the insurance company where the business rightfully belongs.[88]

The life insurance company reproved the agent, explaining that—

This company has very close relations with many of the large banks in New York City and elsewhere. Some of these banks for reasons of their own do not look with favor upon life insurance policies as collateral, and some of them out of regard for the life insurance business decline at least to solicit this type of business.[89]

In discussing the case, an officer of the company added that bankers had inquired whether their making policy loans would be objectionable to the company, but that—

It has been communicated to me by my superior officers, and time and time again I have told inquiring bankers that we certainly had no objections whatsoever to their making loans on life insurance if they thought that was good business.[90]

5. Urban mortgages: At the end of 1938 the 26 major companies held 3.9 billion dollars of urban mortgages. On the average, 60 percent of all urban mortgages were concentrated in 10 metropolitan areas,[91] with 32 percent of the total in New York City and 8 percent in Chicago.[92]

Some of the New York City companies show a high degree of concentration in the New York City area. Almost one-half of the Metropolitan's urban mortgages are on property there. Frederick H. Ecker gave several reasons why the Metropolitan's urban mortgage investments were so concentrated:

In the first place, I think you will find with almost all corporations, that they ordinarily have a very sizable percentage of their loans in the immediate area. It may run from 40 to 50 percent, some place in there. Now the reason is obvious that if it is a good area to lend in and there is a demand for money there, because it is the most readily supervised, your best people, that is your people at the top of the organization are more familiar with values close by than elsewhere.[93]

The mortgage holdings of the New England Mutual indicate that this explanation does not always apply, since only 9 percent of its urban mortgages are on property in the home office city, and the largest metropolitan concentration is in Chicago (almost 25 percent of the total).[94]

The Mutual showed the highest degree of concentration, with 89 percent of all its urban loans on New York City property. A member of the company's real estate department testified that—

Mr. McLaughlin. * * * From the beginning the Mutual has favored New York City loans, and they have proven to be very successful. Now, we have not made residential or farm loans since the latter nineties, and the reason for that is because of the losses we sustained in farm loans and residences that were made in the eighties and the latter seventies.

Mr. Gesell. You have made no residential or farm loans since before 1900?

Mr. McLaughlin. Yes; that is right—no; that isn't correct. We have made residential loans; no farm loans.

[88] Hearings before the Temporary National Economic Committee, Part 28, p. 15232.
[89] Hearings before the Temporary National Economic Committee, Part 28, p. 15232.
[90] Hearings before the Temporary National Economic Committee, Part 28, p. 15232–15233.
[91] New York, Chicago, Philadelphia, Los Angeles, Detroit, Washington, Cleveland, San Francisco, Boston, and Buffalo.
[92] Hearings before the Temporary National Economic Committee, Part 10A, pp. 201–206.
[93] Hearings before the Temporary National Economic Committee, Part 28, p. 15141.
[94] Hearings before the Temporary National Economic Committee, Part 28, p. 15082–15089.

Mr. GESELL. Residential loans have been rather slight, have they not?
Mr. MCLAUGHLIN. In comparison with the whole, very light; yes.[95]

The Mutual's concentration in the New York City area is so great and so long-continued that it has no organization to make urban loans in other areas.[96]

Some of the largest companies indicated a general preference for large urban mortgage loans rather than small ones. This was the case with the Metropolitan,[97] the New York Life,[98] and the Mutual, although the latter's post-depression experience has indicated that it may be difficult to dispose of large properties if these loans are foreclosed.[99]

6. Farm mortgages: Farm mortgages show a lesser concentration than urban mortgages, though 55 percent of the total are on property in Iowa, Illinois, Kansas, and Nebraska, with 25 percent in Iowa alone.[1] Less than 10 percent of farm mortgages were for amounts greater than $25,000.[2]

The Prudential owned more farm mortgages than any other company, showing both the widest geographical and size distribution. The company gave three reasons for this investment policy: Its good experience with farm mortgages; its desire to invest premiums in those areas where they are collected; and the findings of the Armstrong investigation in 1906 that concentration in urban mortgages was unwise and that diversification was preferable.[3] But many companies do not take this view of the investment possibilities of farm mortgages. The Mutual has made no farm loans for 40 years, has made no survey of investment prospects in the field for at least 10 years, and has no staff to make such loans.[4] The New York Life for a long time has had only a small investment in farm mortgages, and it explained that it would have to reorganize its staff if it wanted to make any.[5] The New England Mutual explained that the need for an enlarged organization was one element deterring them from farm mortgages.[6]

One explanation given many times during the hearings was that life insurance companies did not make farm mortgage loans in any area unless they had the opportunity of making a sizable number and amount of such loans. Glen E. Rogers of the Metropolitan explained that "in order for an insurance company * * * to lend money at present day rates of interest, we must be able to obtain a volume of loans of considerable size within a relatively small area." Furthermore, "to build a branch office to service loans and to make loans, I believe, that $5,000,000 would be the minimum." [7]

[95] Hearings before the Temporary National Economic Committee, Part 28, p. 15053.
[96] Hearings before the Temporary National Economic Committee, Part 28, p. 15053.
[97] Hearings before the Temporary National Economic Committee, Part 28, pp. 15143–15147.
[98] Hearings before the Temporary National Economic Committee, Part 28, pp. 14751–14752.
[99] Hearings before the Temporary National Economic Commitee, Part 28, p. —. The Metropolitan's experience with its $27,500,000 mortgage on the Empire State Building points in the same direction. The contract rate was set at 6 percent during construction of the building and 5 percent after 1940. The Metropolitan has negotiated a settlement, by which it has been receiving only 2½ percent a year, and it explained that it could not foreclose because the property did not earn even that much. Hearings before the Temporary National Economic Committee, Part 28, pp. 15067–15069.
[1] Hearings before the Temporary National Economic Committee, Part 28, pp. 15171–15182.
[2] Hearings before the Temporary National Economic Committee, Part 10A, p. 172.
[3] Hearings before the Temporary National Economic Committee, Part 28, p. 15037–15038.
[4] Hearings before the Temporary National Economic Committee, Part 28, pp. 15053–15055.
[5] Hearings before the Temporary National Economic Committee, Part 28, p. 14756.
[6] Hearings before the Temporary National Economic Committee, Part 28, p. 15081–15082.
[7] Hearings before the Temporary National Economic Committee, Part 28, p. 14955.

SUMMARY

From 1923 to 1929 individual savings flowing to savings institutions resulted in a growth of their assets and funds at the rate of $4,000,000,000 per year. During the depression the flow of savings declined sharply, but since 1935 has returned almost to the old level. The present flow of savings to these institutions is greater relative to national income than before the depression. If to this flow of savings is added the flow of savings through idle demand deposits in commercial banks, and through trustees, foundations, and investment trusts, it would appear that investment outlets (over and above replacements and refundings) running into large figures, perhaps five or six billion dollars per year, must be found for these reservoirs every year if the savings of individuals are to be put to work.

The major savings institutions must confine their investments largely to other people's debts—bonds, notes, mortgages, and policy and other loans. The institutions are for the greatest part not permitted to invest in stocks or other equities; and what the statutes and the legal list have begun, managerial conceptions of sound investments have completed. Even if investment regulations were broadened it is doubtful whether these reservoirs would soon depart in any substantial measure from established investment patterns.

Security outlets have been difficult to find during the last decade, principally because the economic machine has not been operating at high levels and therefore not creating securities in large volume. Total public and private debt decreased. The Federal Government went into debt, providing one outlet for savings, but other important borrowing segments contracted their debts.

As a result, commercial banks, savings banks, insurance companies, and trustees have increasingly turned to Government bonds as outlets for their funds. In 1921, member banks of the Federal Reserve System held 2.6 billion dollars of Government obligations, or 11 percent of their loans and investments; in 1938, they held 12.3 billion dollars, or 40 percent. In the 1920's, two-thirds of the assets of commercial banks were invested in short-term commercial loans. Today only one-third is so invested. The balance is in governments, real estate mortgages, and other long-term securities.[8] Savings banks show a similar trend to Government securities. From 1931 to 1938, the New York savings banks increased their holdings in governments from 5 percent to 23 percent of their assets.[9] In the same 7 years, the 26 largest legal reserve life insurance companies in the United States increased their holdings of Governments from $347,000,000, or 2 percent of their assets, to $4,500,000,000, or 19 percent. And both trustees and trust companies have been investing more heavily in Government securities, partly because of their unfortunate experiences with many corporate issues in recent years, and partly because the difference between the rate of interest on Government securities and private securities has been decreasing.[10]

The concentration of funds in savings institutions, by sharply reducing the number of persons responsible for investment decisions, has limited and restricted competition in important respects.

[8] Hearings before the Temporary National Economic Committee, Part 9, p. 3748.
[9] Hearings before the Temporary National Economic Committee, Part 9, p. 3801.
[10] Hearings before the Temporary National Economic Committee, Part 9, p. 3800.

Concentration has made it possible to dam off part of the savings stream and divert part of the flow of savings into cash balances—idle cash hoards. This policy applied to both the new savings and the funds reflected by repayments of old securities (through transfer to the Government, repayment out of earnings, or otherwise) has reduced the pressure upon interest rates, and has prevented them from falling to lower and competitive levels. The increase of cash balances has apparently not been necessary to the safe conduct of the insurance business. The insurance executives agreed that their companies have held and now hold too much cash, and bankers would undoubtedly agree with them. An inspection of balance sheets indicates that these enterprises, even without these cash hoards, are more liquid than ever before. Yet cash holdings continue to increase. Is it impossible to find investment outlets for these funds? It is curious to note that many hold the opinion that the unemployed could be absorbed in industry if wages were reduced, but only a few whisper that idle funds could be absorbed if interest rates came down to competitive levels, for a reduction of interest rates to their competitive levels would do two things: on the one hand, it would stimulate the borrowing of funds, partly for refunding, partly for expansion; and, on the other, to the extent that saving does depend upon compensation, it would reduce the volume of savings. For both these reasons a reduction of interest rates, under the conditions which prevailed in the last decade, would have tended to reduce cash hoards.

The gravity of the situation lies in a fundamental paradox. On the one hand, is the necessity for the continuous reinvestment of funds in new enterprises, taking the risks which go with such enterprises. On the other hand, is the quest for security, which means conservative investment involving slight risk.

The lower interest rates fall on "sound" securities, the higher become the net premiums required by insurance companies. Fulfilling their contracts requires sound investment. The lack of such conservative investment outlets increases cash hoards. The growth of cash hoards slows down the rate of economic activity, and thus destroys the base on which all income rests, namely, the continuous operation of the economic system. As long as insurance companies and savings banks were small and their total assets represented only a small fraction of the savings to be invested, this was no problem. When honestly administered these relatively small funds could easily find "trustees' investments." The problem has arisen as the companies have grown and expanded, as savings have become more and more institutionalized.

To solve this problem requires frank dealing with this fundamental paradox. So far as life insurance is concerned it may require a shift away from contracts which require savings to others which will be essentially risk-spreading, and, strictly speaking, insurance contracts.

Internal Financing of Business Investment

Significance of internal financing

It has been indicated that business enterprises were responsible for roughly 36 percent of the country's gross savings in 1925–29 and less than 35 percent in 1935–39.[11] Business gross savings, consisting of funds made available from internal sources, are sufficient to finance

[11] See appendix I.

the bulk of business investments in plant and equipment. The remainder of the funds required to finance outlays for plant and equipment, for inventory expansion, and for other purposes, come from three principal sources. Enterprisers may tap the savings of others through the capital markets; they may obtain funds through the expansion of bank credit; or they may sell or convert some of their assets.[12]

In 1929 business outlays for plant and equipment reached an all time high of $10 billion. Net business savings in 1929 amounted to 2.5 billion dollars (2.3 billion dollars after adjustment for capital gains); depreciation and depletion totaled 5.1 billion dollars; and gross business savings were therefore 7.6 billion dollars, sufficient to finance three-quarters of the business investment in plant and equipment. It thus appears that even in 1929 American business enterprises were able to finance the bulk of their investments in plant and equipment from internal sources. In the period since 1935 the proportion of such investment financed internally has been substantially larger.

The significance of internal financing of business investment was outlined as follows:

Dr. ALTMAN. In years of high business activity, business enterprises draw upon the capital markets, that is, the savings of individuals and institutional investors, but never since 1922 for more than $2,000,000,000 a year. During years of low activity business enterprises do not require any funds from the capital market. Instead, they contribute funds to the capital market, either by paying out dividends in excess of earnings or by converting depreciation and depletion allowances into bank deposits or securities, thus making them available to other types of investors.

Mr. HENDERSON. But in all those years from 1922 to 1937, savings by individuals, either through their own deposits in savings banks or through institutions, continued, did they not?

Dr. ALTMAN. That is right.

Mr. HENDERSON. In other words, as far as the use which the system makes of those savings is concerned, it taps them only in periods of high activity, but just the same, there is the problem of getting those savings employed each one of those years.[13]

The importance and the growth of business internal financing suggests two questions. The first is the extent to which business enterprises in general need to tap the savings of individuals and others through the capital markets by selling stocks, bonds, or notes. The second is the extent to which the larger business enterprises, who have the easiest and cheapest access to the capital markets, need to tap the savings of others. Connected with this question is another direction of inquiry: Whether these larger enterprises are prepared to secure savings through the capital markets by issuing instruments (stocks, bonds, and notes) that financial institutions and individual savers can and will accept. In short, to what extent may blockages in the smooth flow of savings toward investment in plant, inventory, etc., arise because the enterprises that can tap savings don't need them, while those that need savings can't tap them?

INTERNAL FINANCING OF SELECTED CORPORATIONS

A great deal of specific information relative to the internal financing of individual corporations was offered in evidence before the Temporary National Economic Committee.

[12] Funds arising in these ways may be shifted by transfers among business enterprises. For example, a retailer may finance inventory or machinery purchases by an open book account with a wholesaler or dealer, who in turn may borrow from a bank or issue securities.

[13] Hearings before the Temporary National Economic Committee, Part 9, pp. 3696–3697.

Edward R. Stettinius, chairman of the board of the United States Steel Corporation, testified that from 1921 through 1938, his company had invested $1,222,000,000 in plant and equipment. Ninety-six percent of the whole amount came from internal sources—$938,000,000 from depreciation reserves, $192,000,000 from profits retained, $50,000,000 from tax refunds, a grand total of $1,180,000,000.[14] He did not expect that his company would draw a substantial amount of new savings from the capital markets:

Mr. HENDERSON. You are not at any time in the immediate future going to give any great amount of business to underwriting firms; you are not going to tap individual savings very much, isn't that about correct?
Mr. STETTINIUS. That is correct.[15]

Owen D. Young testified that the General Electric Co. now has resources of $322,000,000. Of this, $192,000,000 came from undistributed profits, $92,000,000 came from sales of stocks and bonds for cash, and $38,000,000 from properties acquired in exchange for stock.[16]

Mr. HENDERSON. And so to all intents and purposes your general experience parallels that of Mr. Stettinius' company [U. S. Steel] in that from your internal sources * * * you could do the financing without tapping outside savings.
Mr. YOUNG. That is right.[17]

Mr. Young went on to point out that from 1921 to 1939, the General Electric Co. did not spend as much for plant and equipment as was accumulated in depreciation reserves.[18]

Alfred P. Sloan, Jr., chairman of the board of the General Motors Corporation, testified that his company had earned $2,300,000,000 in the last 18 years. Roughly, 80 percent of this had been paid out in dividends, 20 percent retained in the business.[19] "In the 18-year period there has been substantially no outside financing," he testified.[20] Total funds available from internal sources aggregated $1,010,000,000, with $520,000,000 from allowances for depreciation and $490,000,000 from undistributed profits. Total expenditures on plant were $770,000,000, leaving a balance of $240,000,000 with which to finance subsidiaries, inventories, installment sales, etc.[21]

Mr. NEHEMKIS. Would it be a correct statement, Mr. Sloan, to say that General Motors is in a position today to do most of its internal financing out of earnings, and, in addition to finance the ultimate consumers of your product as well?
Mr. SLOAN. I think that is a correct statement of fact.[22]

Even if the national income should jump to $80,000,000,000, requiring an increased demand for motor vehicles, "I am quite certain," said Sloan, "that we can handle anything * * * from the internal funds without going into the money market."[23] He explained further that in his opinion the present plant investment of the whole automobile industry had the capacity to take care of all normal demands in the future.[24]

F. B. Rentschler, chairman of the board of United Aircraft Corporation, testified that the growth of his company (and of its predecessor

[14] Hearings before the Temporary National Economic Committee, Part 9, p. 4026.
[15] Hearings before the Temporary National Economic Committee, Part 9, p. 3597.
[16] Hearings before the Temporary National Economic Committee, Part 9, pp. 3599, 3615.
[17] Hearings before the Temporary National Economic Committee, Part 9, p. 3620.
[18] Hearings before the Temporary National Economic Committee, Part 9, pp. 3620–3621.
[19] Hearings before the Temporary National Economic Committee, Part 9, p. 3651.
[20] Hearings before the Temporary National Economic Committee, Part 9, p. 3651.
[21] Hearings before the Temporary National Economic Committee, Part 9, pp. 3651–52, 4031–32.
[22] Hearings before the Temporary National Economic Committee, Part 9, p. 3651.
[23] Hearings before the Temporary National Economic Committee, Part 9, p. 3661.
[24] Hearings before the Temporary National Economic Committee, Part 9, p. 3665.

companies) was largely independent of funds secured through the capital markets. During the period 1925–34, the company required approximately $12,500,000 of capital. With the exception of $2,000,000 advanced by a machine tool company and by the founders of the company, these funds were raised internally, through the sale of the company's products.[25] Expansion between 1934 and 1939, following the disassociation of aviation equipment and transport companies, continued to be financed largely from internal sources. Rentschler summarized the experience of his company as follows:

> Our company has demonstrated its ability to expand its operations to meet all requirements and entirely from its earnings. We intend to continue this procedure as a matter of policy. Our company today is owned entirely by its approximate 29,000 common-stockholders, free of any indebtedness whatever, and we believe with adequate working capital for the future.[26]

John W. Barriger III, chief examiner of the Railroad Division of the Reconstruction Finance Corporation, presented figures on the railroad industry as a whole. From 1921 through 1937, Mr. Barriger testified, 72 percent of the expenditures by railroads for plant and equipment were financed from internal sources, 19 percent from new issues of stocks and bonds, 9 percent from reductions in working capital.[27]

O. L. Altman discussed the financing of 58 large industrial companies for the years 1930 through 1939, on the basis of data compiled by A. B. Hersey.[28] The size of these companies is indicated by their $12,000,000,000 of assets in 1938; and the composition of this sample was as follows:

9 steel companies	$3, 600, 000, 000
7 automobile companies	1, 600, 000, 000
11 petroleum companies	3, 500, 000, 000
23 machinery companies	2, 000, 000, 000
4 rubber and tire companies	700, 000, 000
4 tobacco companies	700, 000, 000
58 companies in sample	12, 100, 000, 000

The sample of 58 companies is too heavily weighted with manufacturers of producers' goods to be well-balanced, though it does cover roughly one-fifth of all manufacturing and mining.

The investment and internal financing experiences of these 58 companies is striking. During 1930–39 these companies had gross uses of funds of $5,557,000,000:

Use	Amount (millions)	Percent
For plant and equipment	$4, 751	85. 5
For new investments (net)	365	6. 6
To build up cash and bank deposits	327	5. 9
To retire preferred stock	12	. 2
For miscellaneous purposes	102	1. 8
Total	5, 557	100. 0

[25] Hearings before the Temporary National Economic Committee, Part 9, p. 3638.
[26] Hearings before the Temporary National Economic Committee, Part 9, p. 3637.
[27] Hearings before the Temporary National Economic Committee, Part 9, p. 3571.
[28] These are essentially the same companies discussed in hearings before the Temporary National Economic Committee, Part 9, pp. 3693–3695, for the period 1930–38. Hersey has carried these calculations through 1939; he discussed some of these data, under the title of "Sources and Uses of Corporation Funds," at a round table at the Annual Meetings of the American Statistical Association, December 1940.

The funds for their outlays came principally from their gross savings. Undistributed profits, depreciation, and depletion provided 83 percent of the total. External sources—the issue of stocks and bonds and the increase in current liabilities—provided 10 percent of the total. Conversion of assets provided the remaining 7 percent. These sources may be summarized as follows:

	Amount (millions)	Percent
From gross savings	$4,603	82.9
From issue of common stock	435	7.8
From sale of bonds	73	1.3
From increase in current liabilities	43	.8
From decrease in inventories	19	.3
From decrease in accounts receivable	167	3.0
From decrease in holdings in marketable securities	214	3.9
Total	5,554	100.0

During the period studied, the 2 years of greatest investment were 1930 and 1937. The sample of 58 companies invested 1.3 billion dollars in the former year and 1.5 billion dollars in the latter. How were these investments financed? In 1930 business gross savings provided 40 percent of the funds; conversion of assets—reduction of inventories, accounts receivable, and holdings of securities—provided 40 percent; and the capital markets provided the balance of 20 percent. In 1937 business gross savings provided 57 percent; conversion of assets, 17 percent; and the capital (and credit) markets, the balance of 26 percent. (The year-by-year analysis of the sources and uses of funds for these 58 companies is summarized in appendix XIII.)

The relative importance of business gross savings as the principal source of investment funds is, of course, greater for some types of companies than for other. During 1930–38 the funds available to the 7 automobile companies within the sample of 58 companies discussed, including the General Motors Corporation, were 31 percent greater than all their outlays for plant and equipment.[29] The 9 steel companies in the sample, including the United States Steel Corporation, met 58 percent of outlays for plant and equipment from internal sources in 1930–38,[30] despite the fact that some branches of the steel industry have undergone virtually a technological revolution in the last decade. The 11 oil companies in the sample met more than 99 percent of their outlays for plant and equipment in 1930–38 from funds accumulated from internal sources.[31] Another study of the operations of 11 major oil companies by A. R. Koch covers the period 1921–39.[32] Between 1921 and 1930, these 11 companies met 95 percent of their outlays for plant and equipment from internal sources. Between 1931 and 1939 internal sources were sufficient to meet all such expenditures and permit a retirement of $100,000,000 of long-term debt.

The Bell Telephone system is a striking illustration of the changed situation of many large companies with respect to the capital markets.

[29] Hearings before the Temporary National Economic Committee, Part 9, p. 4047.
[30] Hearings before the Temporary National Economic Committee, Part 9, p. 4048.
[31] Hearings before the Temporary National Economic Committee, Part 9, p. 4046.
[32] The Flow of Funds Through Selected Large Petroleum Companies, 1921–39, and the Resultant Changes in Financial Structure and Capital and Credit Requirements. This study is being prepared for the National Bureau of Economic Research. Findings mentioned here are used with the permission of the author and the National Bureau.

Between 1925 and 1930 total assets of the Bell System increased from $2,900,000,000 to $5,000,000,000, and the book value of telephone plant increased from $2,500,000,000 to $4,000,000,000. The system made large net additions to plant in every year during 1923–30, ranging from $255,000,000 in 1923 to $409,000,000 in 1929; and tapped the capital markets for substantial sums each year. With a lower rate of investment in telephone plant after 1930, the system contributed funds to the capital markets in every year from 1931 through 1937. Only in 1938 and 1939 has the system had occasion again to tap the capital markets. The data for the system for 1923–39 are tabulated in appendix XIV, and are summarized in table 10. It should be noted that the pension fund system of the Bell System has been a significant source of funds for company use—and this as a matter of company policy. The pension fund was established in 1927. In 1939 the fund had $205,000,000 of assets and might have been considered one of the 25 largest insurance companies in the United States. The fund held $154,000,000 of notes and bonds of the Bell Telephone companies.[33]

TABLE 10.—*Summary of the sources and uses of funds of the Bell System, 1923–39*

[In millions of dollars]

	1923–30	1931–37	1938–39
Uses of funds:			
Net addition to plant	2,385	333	201
Cash and temporary investments	272	−255	−3
Investments in affiliated companies	93	12	−13
All other assets	69	−10	−2
Sources of funds:			
Undistributed gross income [1]	852	313	97
Current, accrued, and other liabilities	110	9	18
Net sales of securities to public [2]	1,858	−241	68

[1] Undivided profits, surplus adjustments, depreciation, and notes sold to pension fund trustees.
[2] Includes premiums on security issues. Entries refer to total issues, including premiums, minus refundings and repayments.

Source: Summarized from appendix XIV. Refers to American Telephone & Telegraph Co. and associated companies, consolidated, through 1935; and A. T. & T. and principal subsidiaries, consolidated, after 1935. Data are from the Federal Communications Commission, but were rearranged and condensed.

C. L. Merwin, Jr., studied the sources of funds of many enterprises, both large and small.[34] He found that depreciation allowances were the largest source of funds in practically all cases. With regard to a sample of 525 large corporations in 1935–37 he concluded that—

In general, net income plus depreciation provides enough funds to cover capital expenditures, but there are exceptions to this rule in particular industries in particular years. The capital markets, a relatively minor source of funds in the early phase of the recovery, assumed a more important role in the later years.[35]

[33] See Federal Communications Commission, Investigation of the Telephone Industry in the United States, Washington, 1939, pp 462–466. Data for 1936–39 were supplied by the Commission. The Commission noted that—"When the pension fund was first established in 1927, and for some years thereafter, Bell System companies needed capital to build additional plant. Since the companies viewed the use of the pension fund for plant extensions as an economical means of obtaining needed capital, the trustee was instructed to and did invest a large portion of the pension funds in the unsecured notes of the Bell System companies."

[34] Temporary National Economic Committee Monograph No. 15, Financial Characteristics of American Manufacturing Corporations, chap. 6.

[35] Temporary National Economic Committee Monograph No. 15, Financial Characteristics of American Manufacturing Corporations, p. 174.

He also studied samples of large and small companies in baking, clothing manufacturing, stone-clay products, and machine tools, and summarized his results as follows:

> Sample tabulations indicate that there are industrial differences in the flow of funds patterns for small manufacturing corporations. Although depreciation is the chief source of funds and capital expenditures the principal disposal, these items play more important roles, relatively, in the machine tool and stone-clay industries than in the baking and men's clothing industries. In these latter industries the current items take a particularly important part, while in all five industries studied their influence can hardly be ignored. In general, the current assets are built up during prosperous years at the same time that current liabilities are increased; and the current assets are liquidated during depression years concurrently with a retirement of current debt. The patterns for the small companies are tolerably similar to those for the large firms.[36]

INTERNAL FINANCING BY ALL BUSINESS ENTERPRISES

The extent to which business enterprises in general finance their expansion from internal sources can be stated only very roughly. The analysis of all enterprises considered as one group is much less satisfactory than that of individual companies. The use of aggregate figures for all enterprises, in contrast with those of individual companies, reduces the clarity and increases the difficulty of interpreting the statistical results. Furthermore, the use of aggregate data washes out the flows of funds, within any one industrial group and among industrial groups, that constitute a major source of interest.

Altman presented data to the Temporary National Economic Committee sketching the relative importance of internal and external financing of all business enterprises. From 1923 through 1929 business enterprises invested on the average $8,700,000,000 each year in plant and equipment, and of this, $6,400,000,000 or 74 percent, came from funds accumulated from internal sources: retained earnings, plus allowances for depreciation and depletion. During the 5 years 1935–39, average outlays for plant and equipment were $5,800,000,000 and of this $4,800,000,000, or 83 percent, came from internal sources.[37] (Table 11.)

It is impossible to make a complete analysis of the sources and uses of funds of all business enterprises similar to that already described for individual companies. The data available in Statistics of Income consist of consolidated totals and are inadequate for that purpose. It is clear, however, that funds available internally, from current operations, are understated when they are represented by the (algebraic) sum of retained earnings, and depreciation and depletion allowances, particularly in periods of depression and falling prices.[38] In any case, consolidating the gross savings of all business enterprises simplifies the problem of maintaining the flow of funds through the business segment of the economy. In the calculation of savings for all enterprises the savings (gross or net) of some enterprises are offset by the dis-savings (gross or net) of others. Thus if A corporation

[36] Temporary National Economic Committee Monograph No. 15, Financial Characteristics of American Manufacturing Corporations, p. 174.

[37] Hearings before the Temporary National Economic Committee, Part 9, pp. 3684, 3692. Data there presented have been revised in accordance with later estimates of the National Income Section of the Bureau of Foreign and Domestic Commerce.

[38] See footnote 24, p. 20, supra. Another source of funds for investment, though not arising from current operations, is settlements of insurance claims. Every year business enterprises receive insurance settlements for property that has been destroyed by fire, shipwreck, flood, and other damage. The value of these settlements is not available, but a conservative estimate would indicate that business enterprises receive at least $150,000,000 a year for losses covered by insurance.

has a net profit of $1,000 after provision of $5,000 for depreciation, while B corporation has a net loss of $1,000 after charging $5,000 for depreciation, the aggregate for the two corporations is $10,000 of gross savings and no net savings. The two together must spend $10,000 for new investment goods to prevent contraction of the income stream. If A spends its $6,000 and B spends its $4,000, no transfer of gross savings need take place; but if the respective investments are made in different amounts, or if A and B together do not invest $10,000, some transfers must take place if all savings are to be invested.

TABLE 11.—*Financing business investments in plant and equipment, 1923–39*

[In millions of dollars]

Year	Gross saving			"Productive" security issues [3]	Outlays for plant and equipment [4]
	Net saving [1]	Depreciation and depletion [2]	Total		
1923	2,432	3,190	5,622	1,624	7,902
1924	1,463	3,282	4,745	1,941	7,650
1925	2,851	3,976	6,827	1,824	8,189
1926	2,223	4,551	6,774	1,801	9,126
1927	996	4,487	5,483	1,781	8,777
1928	2,830	4,799	7,629	1,495	8,846
1929	2,390	5,145	7,535	1,787	10,157
1930	−4,954	5,118	164	1,939	8,340
1931	−7,781	4,897	−2,884	796	5,123
1932	−8,446	4,550	−3,896	203	2,799
1933	−2,488	4,354	1,866	106	2,371
1934	−828	4,265	3,437	63	3,436
1935	377	4,291	4,668	94	4,349
1936	1,152	4,414	5,566	379	5,783
1937	946	4,609	5,555	635	7,570
1938	−1,285	[5] 4,350	3,065	417	5,389
1939	829	[5] 4,550	5,379	191	6,135

[1] Refers only to nonfinancial business enterprises. Net saving as reported by the Department of Commerce, Survey of Current Business, June 1940. Data for financial enterprises, and data for 1923-28 are unpublished.

[2] All business enterprises. From Solomon Fabricant, Capital Consumption and Adjustment, New York, National Bureau of Economic Research, 1938, pp. 32-33, 38. Estimates for 1936 and 1937 are preliminary, and are used with permission of Dr. Fabricant and the National Bureau.

[3] Compiled by Moody's Investors Service. "Productive" issues are those adding to capital goods, by aising funds for new construction, additions, improvements, and purchase of new equipment.

[4] Estimates by George Terborgh. See Federal Reserve Bulletin, September 1939, and February 1940.

[5] Estimated.

Source: Adapted from Hearings before the Temporary National Economic Committee, Part 9, p. 4041.

On the one hand, this is merely the mechanism by which society shifts resources (and the distribution of income from these resources) from one use to another; on the other hand, this situation affects the quality and the functioning of the capital markets. The evidence indicates that, to a significant extent, the bulk of business gross savings are made by the larger corporations, which have access to the capital markets by reason of their size and importance.[39] These do not draw greatly upon the savings of others. It is a fair question to ask whether the capital markets are efficiently equipped to transfer funds to smaller enterprises which could make profitable use of them but which have, at best, only limited and high-cost access to those markets.

The growth of internal financing has been pointed out with increasing emphasis since 1920. But its significance was seen only during the late 1920's. Attention was centered upon the large and increasing

[39] Supra, pp. 20-24 and appendixes VI-XI.

volume of new security issues, neglectful of the fact that a larger and larger part of these issues went for "nonproductive," financial purposes—for investment trusts, public utility and railroad holding companies, and for building up "working" capital which might be and often was invested in securities and loans. The expansion of plant and equipment by business enterprises went on during the 1920's, but at a sober pace.[40] The pace was not in step with the trends in security issues, and not greatly dependent upon them.

Internal financing, not security issues, provides the bulk of "venture capital" for American industry. For only in a financial sense and not in a physical sense are depreciation and depletion funds used for replacement. The new building is not the same as the old; and the new machine is the best, the most efficient that can be bought. Funds from all sources—from depreciation and depletion, from retained earnings, from new security issues, and from sale and conversion of assets—are commingled. They become one fund to be spent for the welfare of the business. Both the size and the expenditure of the fund are determined by managerial decision—and in the major corporations, by persons who at best own only a small part of those funds. All investment is financed from this one fund. The steel industry in the past decade has been revolutionized with its four-high strip mills, automatic operations, and shift to lighter steel products. General Motors Corporation has "ventured" in refrigerators, Diesel engines, and Allison liquid cooled airplane motors. E. I. du Pont de Nemours & Co., Inc., stated that 40 percent of their sales in 1937 came from products they did not make in 1928.[41] The Monsanto Chemical Co. reported that products they began to manufacture after 1929 accounted for 39 percent of total sales in 1939.[42] These and countless similar examples are all "ventures"; they were all made possible by investments using "venture capital." But the bulk of the "venture capital" came from internal sources.

Recent Trends in the Capital Markets

The large volume of potential and realized savings; the concentration of individual savings in savings institutions largely restricted to bonds and other debt instruments; the large volume of internal financing, particularly by the larger corporations, even those which had drawn heavily upon the capital markets in the 1920's; and the lower volume of capital formation in the 1930's compared with the 1920's; all these have affected the capital markets. The growth of idle funds has already been described.[43] Some of the changes in interest rates, securities available for investment, commercial banking, and investment should be treated at this point.

INTEREST AND DIVIDEND RATES

Interest rates on all types of bonds and borrowings have fallen within the past few years, though not all classes of borrowers have benefited equally. The yields on long term United States bonds, municipals, and the highest grade corporates each fell by slightly

[40] Infra, pp. 74-76, and appendixes XVII–XX.
[41] Annual Report, 1937, pp. 12–13.
[42] Annual Report, 1939, p. 4.
[43] Supra, p. 44.

more than one-third between 1929 and 1939, so that the spreads among these bonds have decreased (table 12).

TABLE 12.—*Interest yields on long-term United States Governments, high grade municipals, and Moody's AAA corporates, 1929–39*

Average yield	United States Governments	Municipals	Moody's AAA corporates	Average yield	United States Governments	Municipals	Moody's Aaa corporates
	Percent	*Percent*	*Percent*		*Percent*	*Percent*	*Percent*
1929	3.60	4.27	4.73	1935	2.79	3.41	3.60
1930	3.29	4.07	4.55	1936	2.65	3.07	3.24
1931	3.34	4.02	4.58	1937	2.68	3.10	3.26
1932	3.68	4.65	5.01	1938	2.56	2.91	3.19
1933	3.31	4.71	4.49	1939	2.36	2.76	3.01
1934	3.12	3.95	4.00				

Source: United States Governments: Average yield of all outstanding bonds due or callable after 12 years, compiled by the Treasury Department; municipal bonds: yields computed by the Standard Statistics Co.; Aaa corporate bonds: yields computed by Moody's Investors Service. Current figures since 1937 from Board of Governors of the Federal Reserve System's Federal Reserve Bulletin; back figures from its Annual Report 1937, table 80.

Interest rates charged their customers by commercial banks have shown similar or greater declines. Rates charged in New York City declined from 5.88 percent in 1929 to 2.26 percent in 1939, those charged in 8 other eastern and northern cities declined from 6.04 percent to 3.37 percent, and those charged in 27 southern and western cities declined from 6.14 percent to 4.10 percent.[44]

Mortgage rates appear to have shown no such relative declines. The records of the Bowery Savings Bank in New York City indicate that nominal interest rates on their new urban mortgages decreased from 5.93 percent in 1929 to 4.41 percent in 1937.[45] The effective mortgage interest rates charged by savings and loan associations have shown general decreases throughout the country; in Illinois and Wisconsin, for example, they decreased from 7.4 percent in 1931 to 6.4 percent in 1936.[46] Mortgages insured by the Federal Housing Administration result in an effective interest rate, including insurance and costs, of approximately 5.2 percent; and these mortgages now constitute at least one-quarter of the total urban mortgages made.[47] Average interest rates probably reached 6 percent in 1940; and it would seem that the bulk of new urban mortgages are made at rates of 6 percent or less.

Interest rates on farm mortgages have likewise not declined proportionately with those on bonds. In Iowa, for example, they decreased from a nominal rate of 5.5 percent in 1929 to 4.9 percent in 1935, and for the United States as a whole they appear to have decreased from 6.2 percent in 1929 to 5.5 percent in 1935.[48] The average nominal rate of interest on farm mortgages outstanding was approximately 6 percent in 1929–33, and fell to 5 percent in 1939.[49]

[44] Board of Governors of the Federal Reserve System, Annual Report, 1936, table 44, p. 120; Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, July 1939, p. 587.

[45] M. H. Hoffman, "Rate of Return on New Mortgage Loans Made by the Bowery Savings Bank," Association News Bulletin of the Savings Bank Association of the State of New York, vol. XIX, p. 154.

[46] Hearings before the Temporary National Economic Committee, Part 11, p. 5485.

[47] Hearings before the Temporary National Economic Committee, Part 11, p. 5484, supplemented with unpublished and preliminary estimates of the Federal Home Loan Bank Board.

[48] Computed from data compiled by a Nation-wide Works Progress Administration project sponsored by the Bureau of Agricultural Economics. The contract rates charged by 26 major life insurance companies on new loans are tabulated in Hearings before the Temporary National Economic Committee, 10A, p. 163.

[49] D. C. Horton, "Regional Trends of Farm Mortgage Interest Rates, 1910–39", Agricultural Finance Review, May 1940, p. 1. Cf. with estimates in Hearings before the Temporary National Economic Committee, Part 28, exhibit 2270, p. 15498, that the annual interest charges on the estimated farm mortgage debt fell from 5.96 percent in 1929 to 5.59 percent in 1933, to 4.95 percent in 1938.

More impressive than the decline in average interest rates [50] has been the reduction of the wide regional differences in rates existing before 1933. It is not unfair to say that Government lending and refinancing were the indispensable conditions for these interest rate reductions.[51] Without Government intervention, the decline in farm mortgage interest rates would have been much more gradual and much more insulated from money market conditions.[52]

The large flow of funds to savings institutions which must invest in other people's debts, the importance of internal financing, and the increased preference for debts instead of equities by individuals, has led to a decline of yields on bonds relative to stocks. The yield on common stocks, measured by Moody's yields on 200 common stocks, increased by approximately one-half between 1929 and 1940, while interest yields on all types of credit instruments declined.

COMMERCIAL BANKS AND COMMERCIAL LOANS

The traditional field of the commercial banks has always been regarded as the making of short-term, self-liquidating commercial loans. For two decades, however, commercial loans in particular, and short-term loans in general, have steadily been decreasing in importance. In 1921, short-term loans constituted 70 percent of all member bank loans and investments, and commercial loans by themselves constituted 52 percent. In 1929, short-term loans were 63 percent, and commercial loans were 36 percent, of their loans and investments. By 1938, short-term loans were only 34 percent of loans and investments, and commercial loans had fallen to 23 percent of the total.[53]

The growing self-sufficiency of large business enterprises, which has made them less dependent upon both bank credit and the capital markets, has been an important factor in the decline of the commercial and short-term loan. When many corporations paid off their bank debts through the issue of bonds and stock during the 1920's they attacked the field of short-term credit from another side.

As a result the character of commercial banking has changed radically. Two-thirds of all the loans and investments of commercial banks in 1938 represented United States governments, other securities, and real estate loans.[54] In consequence, commercial banks have become primarily holders of fixed interest-bearing securities rather than commercial paper. Banks have openly recognized their function to provide the Nation's money and to furnish bookkeeping services. They have recognized their status as a service agency by instituting systems of service charges for their checking services; and in many cases they have provided space to facilitate the collection of public utility bills. They still provide a host of related trust, safe deposit,

[50] In part this reduction may be accounted for by liquidation of high interest rate mortgages through foreclosure and other distress farm transfers.

[51] D. C. Horton, "Regional Trends of Farm-Mortgage Interest Rates, 1910–39", Agricultural Finance Review, May 1940, pp. 8–10.

[52] Perhaps one important reason for the relatively small decline in farm mortgage interest rates has been the tendency to consider them in a class by themselves. Such an attitude insulates the interest structure on farm mortgages from general money market conditions. There were implications during the Temporary National Economic Committee hearings that there is a "reasonable" rate on farm mortgages removed from the general course of interest rates, and that if farm mortgages would not earn this rate it would be preferable to stop investing in them. There seems to have been, in addition, general reluctance for a life insurance company to take business away from other companies. It appears that the Metropolitan did not go after loans on the books of other companies, and that the Prudential instructed its agents not to "raid" the business of others (Hearings before the Temporary National Economic Committee, Part 28, p. 14979, and Part 4, p. 1224).

[53] Hearings before the Temporary National Economic Committee, Part 9, p. 4056.

[54] Hearings before the Temporary National Economic Committee, Part 9, p. 4056.

and intermediary financial services. They have eliminated interest payments on demand deposits and drastically reduced interest payments on time deposits. The banks have had to uncover new sources of revenue to replace the commercial loan. They have established personal loan departments to make loans which are largely for consumption purposes; they furnish a large part of the working capital of the finance companies, which make similar loans; they have begun to advertise their willingness to make loans on life insurance policies; they have gone into home mortgage financing. They help finance Government lending activities through purchases of Government obligations. Since ad hoc Government corporations made loans on urban and farm real estate, extended intermediate term loans to business enterprises, made crop and production loans to farmers, financed foreign trade, and engaged in other banking activities, commercial banks aided the Government in doing that which they themselves did not care to do, or do on the same scale.

Faced with declining outlets for the profitable use of their funds in short-term commitments, commercial banks have been forced into term loans. Their first term loans bore maturities of 2 or 3 years; soon loans were made for 5 years; and at the present time term loans for as long as 10 or 15 years with serial maturities are not unusual. Such loans are competing with and replacing short-term bond and note issues, which were formerly handled by the investment banking machinery; and they even compete with long-term loans. Four of the 11 oil companies studied by Koch retired long-term bonds with term loans of 3–5 years at rates of interest ranging from 1½ to 3½ percent.[55] Commercial banks recently invaded the prized investment banking field of equipment trust issues by making a 10-year term loan for the purchase of air transports. A survey by the Board of Governors of the Federal Reserve System of 400 reporting banks in 101 cities in April 1939 indicated that approximately 25 percent of their outstanding commercial, industrial, and agricultural loans had a maturity when made of a year or more. About 70 percent of the loans for a year or more had a maturity when made of 3 years or more. The size of these term loans is evidence that they do not represent accommodation for small business. Fifty-six percent were for $1,000,000 or more, 32 percent for amounts ranging from $100,000 to $1,000,000, while the remaining 12 percent were for amounts smaller than $100,000.[56]

INVESTMENT BANKING

In 1929, more than 10 billion dollars passed through the investment banking machinery on their way to business enterprises, of which approximately 1.4 billion dollars represented refundings. The largest part of the balance was used for "financial" purposes, such as the building up of investment trusts, public utility and other holding companies, cash balances, and security portfolios. It has been estimated that less than 2 billion dollars of the total were used for "productive" purposes, that is, spent in ways that provided employment for men and machines (table 13).

[55] A. R. Koch, The Flow of Funds Through Selected Large Petroleum Companies, 1921–39, and the Resultant Changes in Financial Structure and Capital and Credit Requirements. This study is being prepared for the National Bureau of Economic Research. Findings mentioned here are used with the permission of the author and the National Bureau.

[56] Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, July 1939, pp. 560–562.

It would be a grave error, therefore, to exaggerate the role of the investment banking machinery in supplying funds for the expansion of American industry. Investment banking has done its part, but this part has been subordinate to internal financing and direct investment by individuals. Furthermore, investment banking has never financed more than a small segment of American investment. It is not now, nor has it ever been, concerned with the financing of small business enterprises, farms, and small homes. It has played little more than a minor role in the financing of new business enterprises and of building construction. Even in 1929, when the country was most conscious of its investment banking machinery, it is doubtful whether this machinery was directly concerned with providing the funds for much more than one-tenth of the country's total gross investment in plant, machinery, and other capital goods.

TABLE 13.—*New, refunding, and "productive" capital issues by domestic corporations, 1921–39*

[In millions of dollars]

Year	Capital issues			"Productive" capital issues	Year	Capital issues			"Productive" capital issues
	New	Refunding	Total			New	Refunding	Total	
1921	1,701	568	2,269	864	1931	1,551	821	2,372	796
1922	2,211	734	2,945	1,335	1932	325	319	644	203
1923	2,635	530	3,165	1,624	1933	161	219	380	106
1924	3,029	492	3,521	1,941	1934	178	312	490	63
1925	3,604	618	4,222	1,824	1935	404	1,864	2,268	94
1926	3,754	820	4,574	1,801	1936	1,192	3,387	4,579	379
1927	4,657	1,850	6,507	1,781	1937	1,225	1,209	2,434	635
1928	5,346	1,584	6,930	1,495	1938	873	1,267	2,140	417
1929	8,002	1,374	9,376	1,787	1939	382	1,732	2,114	191
1930	4,483	474	4,957	1,939					

Sources: New and refunding capital issues compiled by the Commercial and Financial Chronicle, as reported in Board of Governors of the Federal Reserve System's Annual Report, 1937, and Federal Reserve Bulletin. "Productive" capital issues are compiled by Moody's Investors Service. " 'Productive' issues are those adding to capital goods, by raising funds for new construction, additions, improvements and purchase of new equipment. 'Non-productive' issues comprise those for refunding, for acquisitions and mergers, and for working capital." The small percentage of corporate issues considered "indeterminate" was allocated 50 percent to "productive." Cf. Eddy, "Security Issues and Real Investment in 1929," Review of Economic Statistics, Volume XIX (1937), p. 79.

In recent years even this small share has been diminishing. Corporate financing has tended more and more to bypass the investment banker. More and more the buyers of securities have dealt directly with the issuing corporations.

This process of direct negotiation and direct sale is known as private placement. Life insurance companies are the principal buyers of securities in such transactions, though commercial banks have employed direct negotiation and private placement to some extent.

There have been many analyses of private placement. Insurance companies in general have defended the practice, while investment bankers have contended that private placement weakens or destroys the capital markets. It has been argued that private placement is the outgrowth of the Securities Act of 1933, with its restrictions, liabilities, 20-day waiting period, and burdensome disclosure. It has been contended that private placement destroys the liquidity of security holdings and removes the flow of savings from the "testing" of the markets. It has been concluded that, as a result, there has

been a "log-jam" in the capital markets which retards investment and fosters unemployment.

Amid the welter of claims and counter-claims, certain facts were established in hearings before the T. N. E. C. These facts do not completely describe the practice, though they do illuminate some important aspects of it.

The proportion of corporate bond offerings placed privately has increased sharply in the past 3 or 4 years (table 14). In 1939 almost 38.7 percent of corporate bond offerings were placed privately.[57]

TABLE 14.—*Corporate bonds placed privately and offered publicly, 1934–39*

[In millions of dollars]

Year	Corporate bond offerings			Percentage of total placed privately
	Total	Placed privately	Offered publicly	
1934	510	94	416	18.4
1935	2,594	385	2,209	14.8
1936	4,215	402	3,813	9.5
1937	1,689	423	1,266	25.0
1938	2,160	710	1,450	32.9
1939	1,932	747	1,185	38.7

Source: Revised figures prepared by the Research and Statistics Section of the Trading and Exchange Division of the Securities and Exchange Commission.

Insurance companies are the most important buyers of corporate bonds at the present time, whether these securities are publicly offered through investment bankers, or whether they are privately placed by the issuing corporations. In 1934, 1935, and 1936 the 26 largest legal reserve life insurance companies bought one-quarter of all the corporate bonds and notes issued; in 1937 and 1938 they bought almost one-half of the notes and bonds issued.[58] During the 5 years from 1934 through 1938 the 26 largest legal reserve life insur-

[57] Tabulations by Wall Street investment banking firms show a significantly higher proportion of corporate bonds and notes placed privately:

TABLE 15.—*Corporate bonds and notes issued and placed privately, 1934–40*

[In millions of dollars]

Year	Aggregate corporate bond and note financing	Private placements	Percentage of aggregate privately placed
1934 (estimated)	456	115	25.2
1935	2,117	335	15.8
1936	4,026	287	7.1
1937	1,673	285	17.0
1938	2,043	802	39.3
1939	1,871	818	43.7
1940 (estimated)	2,300	1,300	56.5

Source: Data compiled and estimated "by investment firms in Wall Street" as reported in New York Times, Jan. 1, 1941.

The difference between the tabulations of the Securities and Exchange Commission and those of the investment banking firms would seem, in large part, to be attributable to term loans made by commercial banks, which were included by the latter as corporate notes.

[58] Hearings before the Temporary National Economic Committee, Part 10A, p. 125. The investing importance of the insurance companies is even greater than is indicated by these figures, since not all of the issues of bonds and notes were eligible for insurance company investment.

ance companies purchased privately from the issuing corporation approximately 1.8 billion dollars of corporate bonds,[59] or 90 percent of the amount estimated by the Securities and Exchange Commission to have been privately placed during the period. The 2.8 billion dollars of corporate bonds privately placed during 1934–39 have meant a loss of at least 60 million dollars of gross profit to the investment banking industry.

Private placement is undoubtedly dependent upon, if indeed it is not the direct outgrowth of, the concentration of the flow of savings into savings institutions. If the American Telephone & Telegraph Co. could place an issue of $140,000,000 privately with 14 insurance companies, the explanation must rest upon the size and concentration of funds in these companies.[60] This concentration and the resulting magnitude of the investment problem of the life insurance companies has already been sketched. It should be noted that the major life insurance companies have developed highly specialized investment staffs to cope with these problems. There is not one of the major companies which does not have or cannot have access to a full complement of industrial analysts, statisticians, engineers, economists, accountants, and financial lawyers to handle investment problems.[61] They claim that these staffs are as adequate to evaluate the security, terms, and price of a bond issue as the staffs of investment banking firms. On the other hand, issuing corporations have developed their own staffs, and they are in the position, in today's sellers' market, to obtain the competition of insurance companies, banks, and investment bankers.[62] The need for the technical assistance provided by the investment banker has thus decreased.

In order to supplement the over-all data on the role of savings institutions, and particularly of life insurance companies, in the capital markets, several intensive studies were made of the sale, redistribution, and mechanics of sale of several high-grade bond issues. These studies, together with a comparable study by an investment banking firm, indicated that on the average, sales by the investment banking (distributing) group during the first week after public offering were made as follows:[63]

Buyer:	*Percent of issue*
Banks	46. 5
Insurance companies	38. 1
Charitable and educational foundations	3. 8
Security dealers	5. 1
Individuals	6. 6
Total	100. 0

The institutional character of the buyers market was clearly indicated by these studies. Eighty-eight percent of the first public sales of these publicly issued securities were made to institutions. Furthermore, the major part of the sales to security dealers undoubtedly

[59] Hearings before the Temporary National Economic Committee, Part 10A, p. 132. Five companies accounted for 86 percent of this amount. Hearings before the Temporary National Economic Committee, Part 10A, p. 129.

[60] An issue of debenture 2¾'s of 1970. The Prudential took a block of $59,000,000 and the New York Life took $30,000,000. New York Times, November 28, 1940.

[61] For example, see hearings before the Temporary National Economic Committee, Part 28, pp. 15269, 15290–15294, 15305.

[62] In its discussions with the Equitable in 1937, for example, relative to a reduction of interest rates upon an old private placement, and a new, refunding private placement, the Shell Union Oil Corporation had the advice and aid of Morgan Stanley & Co., Inc. Hearings before the Temporary National Economic Committee, Part 24, p. 12930.

[63] Hearings before the Temporary National Economic Committee, Part 24, p. 13005.

found their way to institutions within a short time. The difference between the distribution effected through public offering and that effected by private placement is blurred when as in the case of one issue, the distributing group sold 74 percent directly to insurance companies and another 19 percent to banks.

Further studies of some of these issues indicated that the banks were only temporary stopping places for these bonds.[64] The banks resold from one-half to four-fifths of their purchases from the distributing group within 3 months, and life insurance companies were the principal purchasers, taking from two-fifths to three-fourths of the total amount resold.[65] In addition, the life insurance companies bought blocks of these issues on the open market and from security dealers, continuing to buy during the period studied (from date of issue to December 1939).

The life insurance companies engaged in a large number of transactions to acquire their holdings. In the case of 2 small issues of 25 and 30 million dollars, each purchasing company on the average made 66.5 separate purchases; and in the case of 2 larger issues of 140 and 130 million dollars, each purchasing company, on the average, made 93 purchases of the first issue and 101 of the second. Most of these transactions were small. In all, the insurance companies made 4,294 separate transactions in connection with the 5 issues studied. There were 32 purchases in $1,000 blocks and 142 in blocks of $2,000. More than one-third of the transactions were in blocks of $5,000 or less. More than three-quarters were in amounts of less than $30,000, though these accounted for only 21 percent of the total purchased.

In the cases studied insurance companies were the largest single group of purchasers, but they were obviously put to much time, effort, and expense to acquire the amounts they did. If one may judge by other evidence, they probably did not succeed in purchasing as much of these issues as they would have liked. Furthermore, if the issues had been privately placed, the probability is that the investment bankers' commission would have been divided between the issuing company and the life insurance buyers, with the former getting more for the bonds and the latter paying less for them.

These facts by no means describe all the elements in the controversy between private placement and public offering. They do indicate, however, that private placement has a solid institutional base derived from the concentration of savings and the coming-of-age of both the insurance companies and the issuing corporations.

[64] See the supplement to the testimony of O. L. Altman in hearings before the Temporary National Economic Committee, Part 24, pp. 13021-13035.

[65] In the case of one issue, the United States Steel Corporation, 3½'s of 1948, the amount resold to insurance companies was only 7 percent of the total. This issue was different from the others, however, because insurance companies had bought only a small part from the distributing group. The explanation for the small insurance participation in both cases was that the issue was regarded by the "trade" as a "banking issue" by reason of the short maturity and the industry involved.

PART IV

VOLUME, DIRECTION, AND CONTROL OF INVESTMENT

Investment, Consumption, and Productive Capacity

INVESTMENT, THE FLOW OF INCOME, AND CONSUMPTION

Investment plays two important roles in the present-day functioning of the economic system.[1] On the one hand, investment is the process by which the national plant, private and public, is maintained and expanded. On the other hand, investment is a principal determinant, as well as a major component, of the national income.

Investment maintains and expands productive capacity. From this point of view investment in general increases the ability of the community to produce consumption goods in the future, at the same time as it changes the kind of consumption goods that will be produced.

In good times investment constitutes approximately 20 percent of the gross national income. In financial and accounting terms, approximately one-half of the gross investment in good years represents replacement, the remainder representing expansion. In the same financial and accounting terms, approximately two-thirds of business investment, excluding net changes in business inventories, represents replacement. This summary division of investment between replacement and expansion must, however, be interpreted with caution. These allocations of investment between replacement and expansion are made in financial terms. They do not necessarily apply to real investment, to investment after adjustment for changes in prices, and in quality and type of product. These adjustments are difficult, complicated, and theoretically unsatisfactory, and the separation of real investment into maintenance and replacement suffers accordingly. In any event the very term replacement in a dynamic economy is misleading. The four-high continuous strip mill is not the same as the two-high discontinuous mill it replaces, nor is the new house the same as the old. The type, quality, and specification tolerances of the steel produced with the new machine, the standard of living and comfort in the new house, are different from the old. Gross investment, rather than net investment alone, changes the direction, tempo, output, and productive methods of the

[1] Investment (gross capital formation) as used in this study, was defined supra, pp. 5–8. It should be noted that the classification of an expenditure as investment, according to the treatment used here, does not depend upon whether the expenditure yields a money income or is self-liquidating. Many a business and philanthropic investment is not designed to yield a money income. Many a private investment, undertaken as self-liquidating, is finally adjudged non-self-liquidating. Though these expenditures do not pay out, they were investments when they were made. Government investment is subject to similar criteria. If a self-liquidating toll bridge is an investment, so is a non-self-liquidating park. That the cost of the toll bridge is recaptured through service charges, while the cost of the park is met through taxes, does not affect the classification of both expenditures as investments. Neither is the classification of an expenditure as investment dependent upon the source of the funds used for payment. Investment may be financed on long-term or short-term, by savings or bank credit. There is no watertight compartment that makes savings finance investment and makes bank credit finance all other types of expenditure. On the contrary, some savings go to finance installment sales, while the banking system, traditionally considered a lender of short-term credit, has played an important function in extending credits that may be used to finance investments.

economy. For many purposes it is impossible, and even theoretically undesirable, to distinguish between replacement and expansion as components of gross investment.

Investment has a second important function. Since investment distributes income in the process of producing capital goods, the curtailment of investment puts millions of people out of the income stream. A reduction in consumption follows the reduction of investment. A rate of current investment equal to the current rate of saving leaves the flow of purchasing power unbroken, and maintains the level of employment, consumption, and national income.

During the short periods represented by business depressions, the income-distributing aspect of investment may well be more important than the capital-goods-production aspect. Considered only in their physical aspects, the postponement of a new road for a year or two would not greatly affect transportation costs, and 1 year's delay in constructing a new refinery would not substantially modify oil output and oil prices. Even the drying-up of investment for 2 or 3 years would not substantially affect the capacity to produce consumption goods. The drying-up of investment does, however, seriously interrupt the flow of income. If $1,000 is saved and invested, the money turns up as income distributed within the community; if $1,000 is saved but not invested, income is decreased, and production and employment follow suit.

In the past two decades the United States has enjoyed a large volume of consumption goods only when it was producing a large volume of capital goods. For example, the 17.5 billion dollars of capital outlays in 1937 were accompanied by 62.5 billion dollars of consumers' goods and services, while the 12.7 billion dollars of capital outlays in 1938 were accompanied by only 57.3 billion dollars of consumers' goods and services. There has been no instance in the past two decades when the United States had to choose between a large volume of consumption and a large volume of investment. The choice has been between large amounts of both capital goods and consumption goods, and small amounts of both capital goods and consumption goods. (See table 16.)

TABLE 16.—*Gross national product, capital formation, and consumers' outlay, 1919–40*

[In billions of dollars]

Year	Gross national product	Gross capital formation	Consumers' outlay	Year	Gross national product	Gross capital formation	Consumers' outlay
1919	68.8	19.3	49.5	1930	82.7	13.7	69.0
1920	82.8	22.1	60.7	1931	64.8	8.5	56.3
1921	66.1	11.5	54.6	1932	47.1	3.1	44.0
1922	67.2	13.3	53.9	1933	46.0	3.7	42.3
1923	78.2	18.2	60.0	1934	55.2	5.5	49.7
1924	79.8	15.2	63.6	1935	61.6	9.4	52.2
1925	83.4	19.2	64.2	1936 [1]	72.7	13.8	58.9
1926	88.8	19.0	69.8	1937 [1]	80.0	17.5	62.5
1927	86.8	18.2	68.6	1938 [1]	70.3	12.7	57.3
1928	90.1	17.8	72.3	1939 [1]	77.0	15.6	61.4
1929	93.6	20.3	73.3	1940 [1]	82.0	18.5	63.5

[1] To date (December 1940) Kuznets has estimated commodity products through 1938 and service outlays through 1935. All later data represent independent estimates.

Source: Hearings before the Temporary National Economic Committee, Part 9, p. 4007. Data there presented were taken from Simon Kuznets, National Income and Capital Formation, 1919–35, New York, National Bureau of Economic Research, 1937, and Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932–38, Bulletin 74, New York, National Bureau of Economic Research, 1939.

This is the usual relationship between the output of capital goods and the output of consumers' goods, but it is not a necessary one. A reduction of consumption need be suffered only in periods of war and large-scale defense programs.[2] Apart from such times the volume of consumption would not decline, even though the volume of capital formation decreased, provided the flow of income were maintained, provided the incomes of those dependent upon turning out investment goods were continued even though the output of investment goods were reduced. If this were done there would be the same output of consumption goods with a smaller output of investment goods. A larger proportion of our effort would be devoted to the output of consumption goods, but a smaller amount of effort would be devoted to the output of all goods. Part of the Nation's capacities would be unemployed.

It is clear, therefore, that if the pattern and volume of saving remains unchanged, consumption can be maintained in only one of two ways. First, a volume of investment sufficient currently to offset the current accrual of savings must go on. This, of course, implies a corresponding growth of debt or equities. Or, secondly, some part of the community must currently go into debt or draw upon past accumulations (dis-save) to an amount sufficient to offset the current accrual of savings. This implies that the net savings of the community are reduced to zero. Investment, or dis-saving, or some combination of the two, must currently offset the current accumulation of savings if the level of consumption is to be maintained. But investment is preferable to dis-saving as a device for maintaining consumption, since it, in addition, keeps men in their jobs and adds to the country's wealth. On the other hand, when the void created by a decline in investment is not counterbalanced by an increase in dis-saving, we set in motion a tragedy that creates millions of idle men, thousands of idle machines, mounting personal insecurities, and widespread waste and disorganization. The Nation comes to have less goods of all kinds. The unemployed suffer the most, but all parts of the community are affected.

GROSS AND NET INVESTMENT AND PRODUCTIVE CAPACITY

In the course of producing the gross national income, including the volume of gross investment, the existing stock of machinery, equipment, buildings, roads, bridges, dams, and other capital goods suffers wear and tear. The value of this wear and tear, or depreciation, represents a consumption of capital, and should be considered a charge against gross investment. Depletion and losses due to fire and similar hazards must similarly be accounted items of capital consumption. Furthermore, decreases in inventories or in net claims against foreign countries represent a decrease of the country's wealth. In financial terms, no addition can be made to the country's wealth unless the total of capital equipment, fixed plant, inventories, precious metals, and claims against foreigners is maintained "intact." [3] Net investment is, therefore, gross investment, minus capital consumption, or

[2] These almost always require the diversion of capacities after full employment has been reached. If expansion of defense effort is required beyond the point where the economy is operating at full capacity, re-direction of productive efforts, at the expense of consumption, becomes necessary.

[3] Cf. A. C. Pigou, Economics of Welfare, London, Macmillan, 1932, 4th ed., ch. 4; Solomon Fabricant, Capital Consumption and Adjustment, National Bureau of Economic Research, New York, 1938, ch. 2.

"the consumption of all durable capital goods utilized in the process of production." [4]

For the economy as a whole, approximately one-half of the gross capital formation in 1929 and again in 1937 represented expansion. During the depression, however, capital consumption exceeded capital formation by $10.4 billions; during 1932 and 1933 alone dis-investment amounted to $8.0 billions (table 17).

TABLE 17.—*Gross and net capital formation, 1919–40*

(Private and public)

[In billions of dollars]

Year	Gross capital formation	Net capital formation	Year	Gross capital formation	Net capital formation
1919	19.3	10.5	1930	13.7	3.9
1920	22.1	11.6	1931	8.5	−.3
1921	11.5	3.7	1932	3.1	−4.5
1922	13.3	5.8	1933	3.7	−3.5
1923	18.2	9.7	1934	5.5	−2.1
1924	15.2	6.8	1935	9.4	1.5
1925	19.2	10.6	1936	13.8	5.5
1926	19.0	9.7	1937	17.5	8.2
1927	18.2	8.9	1938	12.7	[1] 3.6
1928	17.8	8.2	1939	[1] 15.6	[1] 6.3
1929	20.3	10.1	1940	[1] 18.5	[1] 9.1

[1] Estimated.

Source: Hearings Before the Temporary National Economic Committee, Part 9, p. 4008. Data there presented were taken from Simon Kuznets, National Income and Capital Formation, 1919–35, New York, National Bureau of Economic Research, 1937, pp. 40, 48. These data were revised and extended in Simon Kuznets, Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932–38, Bulletin 74, New York, National Bureau of Economic Research, 1939.

NOTE.—Gross and net capital formation apply to producers' durable commodities, residential construction, net change in inventories, net change in gold and silver stocks, net change in claims against foreign countries.

Two-thirds of business investment in plant and machinery in 1923–29 and in 1937 represented replacement; and the remainder represented expansion. On the other hand, business investment during 1931–34 was insufficient to maintain plant and equipment [5] (table 18). The inclusion in these totals of capital formation represented by changes in inventories would make net capital formation fluctuate more widely.

[4] Simon Kuznets, National Income and Capital Formation, New York, National Bureau of Economic Research 1919–35, p. 17. Estimates of net investment are subject to greater error than estimates of gross investment, since they involve additional possibilities of error which would not tend to compensate those involved in estimating gross investment.

[5] Estimates of capital consumption due to depreciation differ from the provisions for depreciation made by business enterprises and others. Business enterprises keep records of depreciation to help them recapture funds invested in capital goods. To do so they charge current receipts for current depreciation. Hence, depreciation is almost always based upon original cost. On the other hand, the subtraction of an allocated part of past investment, in terms of original prices, from present investment in current prices, gives no indication of net investment. To compare gross investment and capital consumption, it is necessary to express both in the same prices.

TABLE 18.—*Business gross capital formation, capital consumption, and net capital formation (excluding inventories), 1919–38*

[In billions of dollars]

Year	Gross capital formation	Capital consumption		Net capital formation	Year	Gross capital formation	Capital consumption		Net capital formation
		Amount	Percent of gross				Amount	Percent of gross	
1919	9.0	6.3	70	2.7	1929	11.5	7.1	62	4.4
1920	9.3	7.3	78	2.0	1930	9.3	6.7	73	2.5
1921	6.1	5.5	90	.6	1931	5.8	6.1	105	−.3
1922	6.6	5.3	80	1.3	1932	3.1	5.2	167	−2.1
1923	8.6	6.0	70	2.6	1933	3.0	4.9	165	−1.9
1924	8.5	5.9	69	2.6	1934	4.3	5.1	119	−.8
1925	9.3	6.0	64	3.4	1935	5.4	5.3	98	.1
1926	10.1	6.6	65	3.5	1936	7.3	5.6	77	1.7
1927	9.9	6.5	65	3.5	1937	9.4	6.2	66	3.1
1928	10.2	6.7	65	3.6	1938	7.1			

Source: Hearings before the Temporary National Economic Committee, Part 9, p. 4008. Data there presented were taken from Kuznets, National Income and Capital Formation, 1919–35, New York, National Bureau of Economic Research, 1937; these data were revised and extended in pp. 40, 48. Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932–38, New York, National Bureau of Economic Research, 1939.

Accounting calculations of the net expansion or the net contraction of business plant and equipment do not necessarily reflect changes in industrial capacity. As A. H. Hansen explained:

It is quite possible that those capital outlays which were made on renewals and replacements, introducing through those capital outlays new techniques and improved machinery, may have left your total capital plant as productive as before, despite the fact that the accounting figures would indicate a decline in the total capital stock.[6]

Changes in prices constitute only one of the factors vitiating any simple inferences. Furthermore, as Hansen noted later:

The expenditures from depreciation and depletion allowances may often have no relation to any specific worn-out machines. Newly built plant and equipment will not need to be replaced for many years and sometimes even decades, yet the annual depreciation allowances on such equipment will be available year by year for expansion.[7]

Volume and Direction of Investment

VOLUME OF INVESTMENT AND OTHER OFFSETS TO SAVING SINCE 1919

In 1923–29 the total volume of capital outlays, according to the calculations of Kuznets,[8] amounted to 128 billion dollars, an average of 18.3 billion dollars per year. In 1935–38 they averaged 27 percent lower, or 13.4 billion dollars per year. Capital outlays reached their peak of 20.3 billion dollars in 1929, fell off sharply to 3.1 billion dollars in 1932, and reached a post-depression peak of 17.5 billion dollars in 1937 (appendix XV). Although the fluctuations in capital outlays were less sharp after correction for price changes—in 1929 dollars,

[6] Hearings before the Temporary National Economic Committee, Part 9, p. 3510. It should be noted that the concept of productive capacity is an elusive one. Some of its aspects are examined by George Terborgh in "The Problem of Manufacturing Capacity," Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, July 1940.

[7] Hearings before the Temporary National Economic Committee, Part 9, p. 3539.

[8] National Income and Capital Formation, 1919–1935, New York, National Bureau of Economic Research, 1937, and Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932–1938, New York, National Bureau of Economic Research, 1939.

from 20.3 billion dollars in 1929, to 3.7 billion dollars in 1932, to 18.2 billion dollars in 1937 (see table 19)—they were still very much greater than the fluctuations in consumers' outlay.[9]

TABLE 19.—*Gross capital formation in current and 1929 dollars, 1929–38*

[In billions of dollars]

Year	Gross capital formation (current dollars)	Gross capital formation (1929 dollars)	Year	Gross capital formation (current dollars)	Gross capital formation (1929 dollars)
1929	20.3	20.3	1934	5.5	6.3
1930	13.7	14.2	1935	9.4	10.7
1931	8.5	9.8	1936	13.8	15.3
1932	3.1	3.7	1937	17.5	18.2
1933	3.7	4.5	1938	12.7	13.6

Source: Simon Kuznets, National Income and Capital Formation, 1919–35, New York, National Bureau of Economic Research, 1937, and Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932–38, New York, National Bureau of Economic Research, 1939.

Lauchlin Currie discussed the volume and the changes in the relative importance of those expenditures that are generally considered to represent the major outlets for or offsets to gross saving, describing these as follows:

1. Expenditures on plant and equipment charged to capital account: These are financed from such sources as depreciation allowances, retained earnings, borrowings, and stock issues.
2. Private housing expenditures: Since the bulk of expenditures on new residential construction is financed by borrowing, and little comes out of current income, it is customary to consider such expenditures as outlets for saving.
3. Value of the change in inventories: An increase in inventories represents an increased value of goods produced but not purchased out of final consumer income. The monetary effect of a change, while it is taking place, is strictly analogous to the effect of plant and equipment expenditures.
4. Net additions to disposable cash income attributable to public bodies: This category is chosen rather than expenditures on public construction because we are here more interested in the dynamics of the flow of income than in the measurement of the addition to the durable goods of the community. Public expenditures that add to disposable cash income more than tax receipts decrease disposable cash income, constitute an offset for an equivalent amount of current saving.
5. Net foreign balance on current account: This represents the excess of payments received by us from foreigners over payments made by us to foreigners on other than capital movements. An excess is a net addition to disposable domestic cash income and hence may be regarded as an offset to domestic saving. It represents goods produced and not sold to domestic consumers and hence, for present purposes, is analogous to plant expenditures.
6. Net change in consumer credit: An increase in this category might either be treated as negative saving or as an outlet for current saving. The latter alternative is adopted here.[10]

Currie testified that a high level of national income is associated with a large amount of offsets to saving.[11] The gross national income of $90 billion in 1929 was associated with $18 billion of offsets; and the gross national income of 75.7 billion dollars in 1939 was associated with 14.6 billion dollars of offsets. On the other hand, the gross national income of 46.2 billion dollars in 1933 was associated with 2.9 billion dollars of offsets to saving (appendix XVI).

[9] See table 16.

[10] Hearings before the Temporary National Economic Committee, Part 9, p. 3533. The calculation of the individual items is described in pp. 4015–4018.

[11] Hearings before the Temporary National Economic Committee, Part 9, pp. 3536–3538. See table 2, p. 14, supra. In order to make the Kuznets gross national product figures comparable with the income-producing expenditures series, Currie adjusted the former by deducting imputed rents and gross savings of Government. Hearings before the Temporary National Economic Committee, Part 9, p. 4018.

DIRECTION OF INVESTMENT AND OTHER OFFSETS TO SAVING SINCE 1919

Major Fields of Investment and Offsets to Saving

The directions of investment have changed materially since 1929. Two constituents of investment in 1937 were relatively more important than they had been in 1923–29: public construction was only slightly more important, for the substantial increase in Federal construction did little more than counteract the decline in State and local construction; and the net accumulation of inventories in 1937 was $3,000,000,000, the largest in any year since 1921. On the other hand, commercial construction lagged, and residential construction was the most depressed segment of investment. The situation may be conveniently summarized (table 20) in the following general categories:

TABLE 20.—*Major components of Kuznets' estimate of gross capital formation, 1923–29, 1929, and 1937*

Item of gross capital formation	Average of 1923–29	1929	1937
Amount of expenditure (billions):			
Business plant and equipment	$9.7	$11.5	$9.4
Net increase in inventories	1.2	2.4	3.0
Residential construction	4.4	3.0	2.0
Public construction	2.6	2.9	2.9
Net foreign investments and increase in gold and silver stocks	.4	.5	.2
Total	18.3	20.3	17.5
Percent of total expenditures:			
Business plant and equipment	53.0	56.7	53.7
Net increase in inventories	6.6	11.8	17.2
Residential construction	24.0	14.8	11.4
Public construction	14.2	14.3	16.6
Net foreign investments and increase in gold and silver stocks	2.2	2.4	1.1
Total	100.0	100.0	100.0

Source: National Income and Capital Formation, 1919-35, New York, National Bureau of Economic Research, 1937, and Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932-38, New York, National Bureau of Economic Research, 1939. Appendix XV contains the detailed tabulations on which this summary is based.

The composition of offsets to saving is a good indicator of the stability of any expansion. An expansion based upon an inventory boom or upon an increase in consumer credit is likely to be more "precarious" and short-lived than one based upon residential construction or plant expansion.[12] Hence, the relative importance of the constituents of offsets to saving is summarized in table 21 for 1925 and 1937, 2 years when the national income was approximately the same, as well as for 1929 and 1939.

Between 1925 and 1929 private housing and non-profit construction shrank from 34 percent of the total offsets to saving to 21 percent, while plant and equipment rose from 48 percent to 57 percent and the net addition to inventories rose from 9 percent to 12 percent. On the whole, the composition of offsets to saving between 1925 and 1929 showed some worsening, with inventories and consumers' credit becoming more important.

[12] Hearings before the Temporary National Economic Committee, Part 9, pp. 3517, 3533.

TABLE 21.—*Composition of income-producing expenditures that offset savings, 1925, 1929, 1937, and 1939*

Type	1925	1929	1937	1939 [1]
Amount of expenditure (millions):				
Plant and equipment	8,189	10,157	7,570	6,135
Private housing and nonprofit construction	5,750	3,761	1,908	2,270
Change in inventories	1,523	2,146	3,072	990
Foreign balance	199	240	−13	781
Government net contribution	529	696	877	3,573
Change in consumers' credit	842	987	891	900
Total	17,032	17,987	14,305	14,649
Percent of total expenditures:				
Plant and equipment	48.1	56.5	52.9	41.9
Private housing and nonprofit construction	33.8	20.9	13.4	15.5
Change in inventories	8.9	11.9	21.5	6.8
Foreign balance	1.2	1.3	−.1	5.3
Government net contribution	3.1	3.9	6.1	24.4
Change in consumers' credit	4.9	5.5	6.2	6.1
Total	100.0	100.0	100.0	100.0

[1] Figures for 1939 are preliminary.

Source: The components of these totals are given, and the series used in the preparation of these totals are described in appendix XVI.

The recovery of 1937, from the point of view of the constituents of offsets to saving, was probably the most "precarious" in two decades. Total offsets were largely dominated by an inventory boom, the largest, both absolutely, in dollar volume, and relatively, in proportion to total offsets to saving, since 1922. Inventories, which had constituted 8.9 percent of total offsets in 1925 and 12.2 percent in 1929, rose to 22 percent in 1937. The net Government contribution to purchasing power was $877,000,000 in 1937, only slightly more than in 1925 and 1929. Larger expenditures were counterbalanced by larger tax collections.[13]

In 1939, the net Government contribution to the community's cash income was 3.6 billion dollars, or 24 percent of total offsets to saving, while the increase in inventories constituted only 7 percent of the total. The Government net contribution was relatively higher, and the net increase in inventories relatively lower in 1939 than in 1925, 1929, and 1937. Relative outlays on plant and equipment and on private housing and non-profit construction lagged the most in 1939 compared with 1925 and 1929.

Plant and Equipment[14]

Plant and equipment outlays by all business enterprises were 10.2 billion dollars in 1929, 7.6 billion dollars in1937, and 6.1 billion dollars in 1939. An analysis of plant outlays and equipment outlays separately indicates that the latter recovered much more completely than the former, as follows:

[In billions]

Year	Plant	Equipment
1929	$4.6	$5.6
1937	2.3	5.3
1939	1.9	4.3

[13] The Federal net contribution was sharply curtailed in 1937. Otherwise the total governmental net contribution would have been substantially higher. The Federal net contribution was 3.7 billion dollars in 1935, 4.3 billion dollars in 1936, 1.1 billion dollars in 1937, and 2.4 billion dollars in 1938.

[14] Terborgh's estimates. They are presented in detail in appendixes XVII–XX.

Equipment outlays for all enterprises of 5.3 billion dollars in 1937 were higher than those of any year in the 1920's except the 5.6 billion dollars in 1929. In view of the decreases in prices and increases in productivity during the period, the equipment outlays in 1937 undoubtedly reflected more "real" investment and substantially more productive capacity than in 1929. Plant outlays followed a different course. The 2.3 billion dollars of plant outlays in 1937 were less than those in every year in the 1920's, and only half the outlay of 4.6 billion dollars in 1929.

The explanation for these divergent trends in plant and machinery outlays is perhaps that increases in productivity, particularly those designated as "managerial," may have reduced the demand for plant in relation to equipment. Following an exhaustive study of changes in productivity, it was reported that—

> In the automobile industry particularly, but in other manufacturing industries as well, improvements in plant lay-out appear to have been greatly stimulated by the depression, with resulting better continuity of the flow of work and savings in direct and supervisory labor, equipment, floor space, and inventories.[15]

For example, in 1934 Packard, through changing its lay-out, cut floor space per unit of output nearly in half, and was left with a vacant building; while when Western Electric substituted straight-line for functional manufacture it reduced its required floor space by 17 percent.[16] At the levels of industrial production which have prevailed in the last decade it has been possible to modernize machinery and equipment without adding substantially to plant floor space.

It is interesting to note that annual expenditures for equipment did not increase greatly from 1923 to 1928. Currie testified that during this period, "despite rapidly increasing production, despite rapidly increasing consumption, and despite the smallness of the increase in equipment expenditures, there was no evidence of any growing strain on our productive facilities." [17]

Plant and equipment outlays in mining and manufacturing, and in agriculture, recovered almost completely between 1929 and 1937. Outlays by railroads and transit companies in 1937 were 63 percent and 75 percent, respectively, of the 1929 totals. The 1929 levels, in both these cases, represented substantial declines from their 1923 peaks. In the electric power and telephone industries, outlays in 1937 were only 52 percent and 57 percent, respectively, of their 1929–30 peaks.

Mining and manufacturing outlays have been closely associated with industrial production since 1920.[18] Increases in productivity and efficiency during the period have tended, however, to reduce the amount of investment associated with given levels of production.

Agricultural outlays for equipment were 14 percent higher in 1937 than in 1929, despite the fact that plant outlays were more than one-third lower. The growing strides of mechanization are indicated by the continued high level or post-depression equipment expenditures: 1936–39 was 6 percent higher than 1926–29, despite the increases in

[15] David Weintraub, Effect of Current and Prospective Technological Developments Upon Capital Formation, Report G–4 of the National Research Project of the Work Projects Administration, 1939, pp. 12–13. (Reprinted in American Economic Review Supplement, vol. XXIX, 1939, pp. 15–32.)

[16] Ibid., pp. 12–13, footnote 29.

[17] Hearings before the Temporary National Economic Committee, Part 9, p. 3524.

[18] See Currie's testimony, Hearings before the Temporary National Economic Committee, Part 9, p. 3520, et seq. Since this testimony, the estimates of outlays have been slightly revised, while the Federal Reserve Board index of industrial production has undergone substantial revision. Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, August 1940.

productivity and the decreases in prices that had occurred in the meantime.[19]

Railroad outlays for plant are far short of the level of the late twenties; the abandonment of trackage is continuing, while the construction of new unified railroad terminals in the twenties did not need to be repeated or extended in the thirties. Equipment expenditures in 1937 were as high as in 1929, though less than half of what they had been in 1923. The volume of carloadings has decreased by one-third from 1926–29, the average number of serviceable freight cars and locomotives has decreased, and the speed and efficiency of railroad transportation have increased.

Outlays by electric power and telephone companies reached their peaks after the depression had begun. In 1929 these utilities were in the middle of long-range expansion programs. It would have been inadvisable and unprofitable sharply to curtail these programs. This factor, rather than a response to public appeals to help combat the depression, determined their investment policies in 1929 and 1930. On the whole, these outlays expanded capacity beyond the then declining requirements, and were probably one factor in depressing outlays in later years. Furthermore, both these fields have shown great increases in productivity in recent years. As a result, in 1937 plant and equipment outlays were only 52 percent and 57 percent of their respective peaks. The decline in plant outlays was much more severe than in equipment outlays.[20]

Residential Construction

The volume of residential construction does not follow the general curve of business activity. It was virtually at a standstill during the World War boom; it did not follow the 1927–29 boom; and it did not follow the 1937–38 recession.

It is clear that residential construction follows long swings. The volume of construction rose from $2 billion in 1919 to a peak of $5 billion in 1925; declined during 1926–28 to $4.4 billion; declined sharply in 1929–30, with 1929 being $1.2 billion below 1928, and 1930 being $1.4 billion below 1929; reached a low of $375 million in 1933; and rose steadily to $2.1 billion in 1939 [21] (table 22). The trend is still upward. The number of nonfarm residential units built each year fluctuates in rough accordance with the dollar volume of investment in housing. The number of units built rose from 247,000 in 1920 to a peak of 937,000 in 1925, and then fell to 509,000 in 1929. It reached a low of 54,000 in 1933. In 1939 the number of residential dwelling units constructed was 465,000.

[19] Hearings before the Temporary National Economic Committee, Part 30, pp. 16922–17081. For a more general treatment, see Bureau of Agricultural Economics, Technology on the Farm, 1940, especially pp. 3–21.

[20] Hearings before the Temporary National Economic Committee, Part 9, pp. 3530–31.

[21] Terborgh's estimates (table 22). Kuznets' estimates (appendix XV) show a similar pattern. The estimates of Peter A. Stone, which were prepared on a different basis, are on a substantially lower level but their pattern is similar to the Kuznets and Terborgh estimates. See Temporary National Economic Committee Monograph No. 8, Toward More Housing, by Peter A. Stone and R. Harold Denton, p. 19.

TABLE 22.—*Expenditures for new residential construction and number of nonfarm dwelling units constructed, 1920–39*

Year	Expenditures	Dwelling units constructed	Year	Expenditures	Dwelling units constructed
	Millions of dollars			*Millions of dollars*	
1920	1,712	247,000	1930	1,824	286,000
1921	2,016	449,000	1931	1,379	212,000
1922	3,414	716,000	1932	515	73,000
1923	4,395	871,000	1933	373	54,000
1924	4,772	893,000	1934	419	55,000
1925	5,141	937,000	1935	813	144,000
1926	4,843	849,000	1936	1,374	280,000
1927	4,645	810,000	1937	1,740	300,000
1928	4,355	753,000	1938	1,618	347,000
1929	3,193	509,000	1939	2,060	465,000

Source: Expenditures represent estimates by George Terborgh, in Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, September 1939 and February 1940.
Dwelling units from Temporary National Economic Committee Monograph No. 8, Toward More Housing, by Peter A. Stone and R. Harold Denton, p. 22.

Relatively more units are provided now, as compared with the twenties, in the form of one-family dwellings: [22]

Units provided by—	Average, 1924–26	Average, 1936–38	1939
	Percent	*Percent*	*Percent*
1-family houses	59	75	76
2-family houses	17	5	5
Apartment houses	24	20	19
Total	100	100	100

Construction in the West and South has shown greater recovery than in the Northeast and North Central areas. In 1939 the South and West were providing residential units at the rate of two-thirds their predepression peaks; while the Northeast was building at one-third, and the North Central area at two-fifths the predepression peaks. Consequently, relatively more of the nonfarm residential units are being built in the West and South now than in the twenties [23] (table 23).

TABLE 23.—*Construction of non-farm residential units, by regions, 1924–26, 1936–38, and 1939*

[Number of residential units in thousands]

Area	Average 1924–26		Average 1936–38		1939	
	Number of units	Percent	Number of units	Percent	Number of units	Percent
Northeast	306	34	90	30	113	24
North Central	242	27	57	19	104	23
South	210	24	97	32	150	32
West	135	15	59	19	98	21
Total	893	100	303	100	465	100

Source: Hearings before the Temporary National Economic Committee, Part 11, p. 5477. Data for 1939 from Bureau of Labor Statistics.

[22] Hearings before the Temporary National Economic Committee, Part 11, p. 5476. Data for 1939 from the Bureau of Labor Statistics.
[23] Hearings before the Temporary National Economic Committee, Part 11, pp. 4949, 5477. Data for 1939 from the Bureau of Labor Statistics.

Isador Lubin discussed the type of housing that is available and the amount of construction required to provide for normal needs. He pointed out that an important percentage of American families lives in substandard housing. Approximately 4,000,000 dwelling units, about 16 percent of the total, are "unfit for human occupancy or in need of major repairs." More than 5,500,000 dwelling units lack a bathroom. More than 7,000,000 units lack hot water, electric lights, or indoor toilet. Thus, even if no expansion of housing facilities were required, the country needs to re-house a substantial portion of the population.[24]

The increase of population and the number of families will, however, require an expansion of residential facilities. Lubin estimated that during the next 10 years an average of 280,000 additional families per year will require housing,[25] that approximately 45,000 dwelling units per year will be torn down, and consequently that a minimum of 325,000 new units per year will be required.[26] If the 4,000,000 residential units which are substandard at the present time are to be slowly eliminated, over as long a period as 20 years, an additional 200,000 units per year will be required. Such a minimum program will not, of course, keep housing conditions at their present level. A large number of houses each year will have to be classified as obsolescent, particularly since half our houses are more than 25 years old and one-fourth are 50 years old. Lubin concluded that "with 525,000 additional units [per year] for the next 10 years, there will hardly be any increase in the standards of the American people in terms of their housing." [27]

Despite these minimum requirements, only 345,000 units were built in 1938; 465,000 units (including 6,041 units made available for occupancy by the United States Housing Authority) were built in 1939.[28]

What kind of houses should be built? What kind of houses can the American people afford to pay for? Stone and Denton conclude, on the basis of studies by the Federal Housing Administration and the Bureau of Labor Statistics, that "new housing is not available to those earning less than $1,000 per year, and is available only to a very limited extent to those earning between $1,000 and $2,000 per year." [29]

It is apparent that the construction industry is not building for the mass market. Instead, the industry is organized to provide facilities for the higher income brackets. Until the output of the construction industry is changed, housing for families with incomes of less than $1,500 will continue to be bought on a second- or third-hand basis. Until new construction is specifically designed for the lower income

[24] Hearings before the Temporary National Economic Committee, Part 11, pp. 4958–4961.

[25] It should be pointed out that the increase in the number of families is greater than this. The National Resources Committee estimates that the number of families will increase by 4.5 millions in 1930–40, and by 4.3 millions in 1940–50. Residential Building, 1939, p. 17; cf. its Problems of a Changing Population, 1938, p. 25.

[26] Hearings before the Temporary National Economic Committee, Part 11, pp. 4966–4967. This estimate assumes a vacancy rate of 2 percent or less.

[27] Hearings before the Temporary National Economic Committee, Part 11, p. 4967. Stone and Denton estimate that the requirements, on these assumptions, may range from Lubin's 525,000 to 600,000 dwelling units per year. Temporary National Economic Committee, Monograph No. 8, Toward More Housing, p. 22.

[28] Hearings before the Temporary National Economic Committee, Part 11, pp. 4968, 4947. Data for 1939 construction from the Bureau of Labor Statistics. Data for United States Housing Authority from Report 8 of its Research and Statistics Section.

[29] Temporary National Economic Committee Monograph No. 8, Toward More Housing, pp. 24–25. See the testimony by Lubin and Davison in Hearings before the Temporary National Economic Committee, Part 11, pp. 4949–4966, 5479, 4977–4980.

families, the higher income families will move into the new houses while the lower income families will come into the older ones.[30]

It was emphasized during the hearings that it is not impossible to reorient the private residential construction industry and provide lower cost houses. This industry has shown some re-direction in recent years, since the cost of the new dwelling units constructed—not the cost of identical units—declined in the past decade even though the cost of construction increased. One-family dwellings, on the average, cost $4,900 in 1929, and $4,100 in 1938. The average cost per dwelling unit for all types of dwellings decreased from $4,600 in 1929 to $3,700 in 1938. (These figures do not include the cost of land.)[31] Part of this decrease is attributable to the decreased size of residential units, part to a change in the quality of the housing product, and a large part to improvements in lay-out, heating units, and other details. Furthermore, there has been a shift toward one-family dwellings in response to these factors which have been associated with suburbanization and the use of cheaper land.

Public Construction.

Public construction outlays during 1921–29 averaged 2.7 billion dollars per year, or 23 percent of all construction outlays in the United States. (Maintenance included in both cases.) As the depression deepened, private construction decreased more rapidly than public, so that by 1934 the latter constituted 51 percent of the total. After 1934 there was a slight expansion of private as compared with public construction, reducing the share of the latter to 41 percent of the total in 1938.

The absolute volume of public construction, however, did not return to the level of the late twenties until 1936, and the average outlays in 1936–38 were smaller than in 1928–30. (Table 24.)

The sources of the funds for public construction were changed drastically by the depression. Federal funds in the twenties paid for one-eighth of public construction and maintenance; at the present time they pay for more than one-half.

During 1920–29 the Federal Government spent directly an average of $267,000,000 per year for construction and maintenance (excluding aid to States). Federal aid to States during these years averaged $79,000,000 per year. Federal funds, directly and indirectly, thus paid for 13 percent of all public outlays for construction and maintenance; State and local funds paid for the remaining 87 percent, equal to average expenditures of $2.4 billion per year.

[30] The question was raised during the hearings on housing whether families with incomes of $1,500 might not be more comfortably housed in second-hand houses originally built for higher income groups than in new but cheaper houses built for them. The question is pertinent on the basis of English experience with low-cost housing, since some of their projects were not well built and have shown high rates of depreciation. (Hearings before the Temporary National Economic Committee, Part 11, p. 4984.)

There are four important considerations on the question of new as compared with second-hand housing. First, the present type of construction, by encouraging and indeed by depending upon "hand-me-downs" affects the structure and stability of property values adversely. Blighted areas grow more rapidly. Risks and consequently rents are increased. An increase in the rate of handing property down from one income group to another may temporarily give the lower income groups better housing than they could afford to construct for themselves—but with the drawbacks of capital losses for property owners, destabilization of property values, and homes badly designed for the new occupants. Secondly, technological advance has been rapid, and the expensive older houses lack many modern facilities. Experience in low-cost construction will improve both the quality and comfort of the low cost product. Thirdly, a substantial proportion of existing residential units is or soon will be substandard or unsafe. Families living in these houses can only be provided for by houses designed to fit their incomes. Fourthly, many of the shortages are in rapidly growing areas, such as Washington, D. C., and textile areas in the South, or in circumscribed areas, such as those inhabited by Negroes in New York and Chicago. In these areas there are no second-hand houses, or the supply of second-hand houses is inadequate. In these areas failure to provide construction for the lower income groups must inevitably lead to overcrowding.

[31] Bureau of Labor Statistics, Building Construction, 1921 to 1938, Bulletin No. 668, 1940, p. 6. The net construction cost per dwelling unit under the United States Housing Authority program declined from $3,000 in September 1938 to $2,500 in June 1940. See report by Research and Statistics Section, No. 16, July 10, 1940.

TABLE 24.—*Total construction and the amount and sources of funds for public construction, 1920–39*

(Includes maintenance and part of work relief [1])

[In millions of dollars]

Year	Total construction	Public construction	Sources of funds for public construction		
			Direct Federal	State and local [2]	Federal aid [3]
1920	8,563	2,044	504	1,501	39
1921	8,062	2,325	402	1,848	75
1922	9,346	2,358	283	1,993	82
1923	10,920	2,228	204	1,947	77
1924	12,049	2,555	203	2,264	88
1925	13,063	2,819	191	2,536	92
1926	13,779	2,862	184	2,592	86
1927	13,944	3,189	199	2,907	83
1928	13,710	3,330	233	3,014	83
1929	13,488	3,309	276	2,952	81
1930	11,814	3,733	328	3,288	117
1931	8,689	3,424	368	2,844	172
1932	5,415	2,539	399	1,949	191
1933	4,044	1,918	437	1,133	348
1934	4,860	2,474	509	1,208	757
1935	5,578	2,548	675	1,125	758
1936	7,731	3,496	916	1,316	1,264
1937	8,376	3,079	643	1,524	913
1938	8,225	3,390	603	1,782	1,005
1939	9,117	3,806	681	1,986	1,139

[1] Includes 50 percent of work relief expenditures on work relief construction and allocated either to "direct Federal" or "Federal aid" construction.

[2] Includes construction financed by loans from the Reconstruction Finance Corporation and the Public Works Administration.

[3] Includes grants-in-aid and Works Progress Administration expenditures on State and local projects.

Source: Hearings before the Temporary National Economic Committee, Part 9, pp. 4063–4064. Data there presented were taken from the Bureau of Foreign and Domestic Commerce, Construction Activity in the United States, 1919–37, 1938, and Survey of Current Business, as revised to date by unpublished material.

These relationships were changed with the depression. Construction outlays financed with State and local funds contracted sharply, and they have not recovered to predepression levels. They fell from 3.3 billion dollars in 1930 to 1.1 billion dollars in 1933 and 1935, and 1.2 billion dollars in 1934, and expanded to only 1.8 billion dollars in 1938, an amount substantially below every year in the twenties except 1920. The share of the Federal Government, of course, increased markedly. Construction and maintenance outlays paid for directly by the Federal Government increased from $276,000,000 in 1929 to $916,000,000 in 1936, $643,000,000 in 1937, and $603,000,000 in 1938. The increase in Federal aid [32] resulting in public construction and maintenance was much greater. In no year during the twenties was Federal aid more than $92,000,000; in 1935 it was $758,000,000; and the inauguration of the work relief program raised the amount of Federal aid resulting in public construction and maintenance to $1.3 billion in 1936 and $1.0 billion in 1938.

What was built by Government during the past two decades? Highways accounted for the largest share of construction outlays. They took not less than 40 percent of total construction outlays in all years during the past two decades and as much as 50 percent in some

[32] Includes grants-in-aid; Federal loans by the Works Progress Administration; and 50 percent of work relief expenditures for State and local public works, estimated as the physical amount of construction equivalent or comparable to construction by other methods. Does not include loans by the Reconstruction Finance Corporation or the Public Works Administration.

(table 25). In 1929, for example, outlays for highways amounted to 1.2 billion dollars, while total public construction outlays were 2.5 billion dollars. In 1937, $850,000,000 of the total outlays of $2,209,000,000 (excluding relief outlays) went for highways, and an (estimated physical) equivalent [33] of $202,000,000 of $448,000,000 of Works Progress Administration expenditures going toward construction were spent for highways.

TABLE 25.—*Uses of funds for public construction, 1920–39*

(Maintenance and work-relief construction excluded)

[Millions of dollars]

Year	Total public construction	Highways	Sewerage disposal and water supply	Public educational buildings	Nonresidential buildings, excluding public educational	Naval and military [1]	Conservation and development	Miscellaneous construction
1920	1,536	640	153	197	86	363	55	42
1921	1,753	840	178	279	108	252	52	44
1922	1,786	851	201	348	133	154	48	51
1923	1,645	783	203	359	122	63	65	50
1924	1,904	951	263	369	125	51	79	66
1925	2,142	1,056	278	415	158	42	73	120
1926	2,138	1,039	285	414	189	36	61	114
1927	2,395	1,190	312	382	214	39	63	195
1928	2,499	1,270	300	390	248	52	72	167
1929	2,458	1,248	253	387	255	66	86	163
1930	2,827	1,481	343	361	286	79	111	166
1931	2,615	1,323	270	273	318	78	135	218
1932	1,881	916	156	142	269	73	139	186
1933	1,297	675	81	56	147	84	168	86
1934	1,559	821	131	74	107	114	246	66
1935	1,667	622	159	165	128	169	319	105
1936	2,111	876	215	249	37	212	338	184
1937	2,209	850	174	226	214	219	306	220
1938	2,308	900	179	273	245	253	293	165
1939	2,825	950	255	399	313	352	324	232

[1] Includes expenditures for construction of new vessels.

Source: Hearings before the Temporary National Economic Committee, Part 9, p. 4065. Basic data from the Bureau of Foreign and Domestic Commerce, Construction Activity in the United States, 1915–37, 1938, table 3, p. 18. Data for 1936–39 are from work sheets of the Bureau of Foreign and Domestic Commerce.

It has been indicated that since 1933 the expansion of direct and indirect Federal expenditures for construction merely counterbalanced the decline in State and local construction outlays.[34] Total public outlays were not changed by the larger Federal outlay, and hence did not take up any of the slack resulting from the decline of private construction.

The divergent trends in public construction outlays are important in any consideration of the divergent trends in the ownership of public property and the course of public debt. During the twenties the debt of State and local governments increased at the rate of 780 million dollars per year.[35] Net State and local debt[36] increased from 6.7 billion dollars in 1920 to 14.5 billion dollars in 1929. During all this period the Federal debt was being reduced. The net Federal debt [37] fell from 24.3 billion dollars to 16.7 billion dollars.

[33] The estimated physical equivalent was 50 percent of the amount of Works Progress Administration expenditure.

[34] For a useful survey of Federal outlays, and loans to State and local governments under the Public Works Administration, see its America Builds: The Record of P. W. A., 1939.

[35] Up to May 1938 Moody's Investors Service considered all State and local bond issues as "productive"—that is, as resulting in capital outlay. See H. G. Moulton, G. W. Edwards, J. D. Magee, and Cleona Lewis, Capital Expansion, Employment, and Economic Stability, Washington, D. C., Brookings Institution, 1940, pp. 349–354.

[36] After deduction of State and local securities held in State and local pension, trust, and investment funds.

[37] After the deduction of Federal securities held in Federal trust and sinking funds.

The burden of financing both public construction and relief has been shifted in part from State and local governments to the Federal Government and has been a major factor in altering the course of Government debt. The net debt of State and local governments increased from 15.2 billion dollars in 1931 to 15.5 billion dollars in 1939, while net Federal debt mounted to 38.4 billion dollars by June 30, 1939.[38] A good share of this increase in Federal debt is represented by public works of various kinds, loans, and advances. The Federal debt increased by 21 billion dollars in 1931–38; and the National Resources Planning Board estimated that 14.5 billion dollars of this amount was represented by public construction, and by loans, advances, and stock purchases (less repayments). Amortization of public construction, plus losses and write-offs of other investments, were estimated at 2.9 billion dollars, and net investment at 11.6 billion dollars.[39] These estimates are admittedly rough, but they indicate approximately the growth of assets that would be shown on Federal accounting records, if, like private business records, they capitalized outlays for plant and securities.

Consumer Credit

An increase in consumer credit may be treated as dis-saving or as an outlet for current saving. Currie treated it as the latter.[40]

According to the estimates of Rolf Nugent, the volume of consumer credit nearly doubled in 1923–29, increasing from $4,357,000,000 to $8,183,000,000. The 4 years of liquidation that followed left consumer credit at $4,807,000,000 in 1933. The succeeding 4 years witnessed a rapid expansion, an expansion largely dominated by automobile financing. There was an expansion of 9 percent in 1934, 16 percent in 1935, 22 percent in 1936, and 12 percent in 1937. "The rate of expansion during the first 4 months of 1937 was certainly greater than for any similar period between 1923 and 1937, and it probably far exceeded that for any similar period in the history of consumer credit." [41] Preliminary calculations indicate a contraction of consumer credit by $1,400,000,000 in 1938, followed by an expansion of $900,000,000 in 1939 (table 26). These estimates "probably understate the outstanding amounts and cyclical movements of consumer credit." [42]

The credit to finance purchases of durable goods dominates the movements of consumers' credit. Such capital financing first became the most important element in consumer credit with sales of automobiles on the installment plan. Though automobile paper is still the most important component of consumers' capital financing, furniture, washing machines, radios, refrigerators, etc., are important elements. Within the past few years consumers' financing has been extended to "soft goods"—clothing, haberdashery, and the like—even on a mail-order basis. A large part of the sales of these types of goods are made on a credit rather than on a cash basis. It has been estimated that 60 percent of the automobiles, 40–50 percent of household appliances and furniture, 27 percent of the jewelry, and 12 percent of the depart-

[38] Treasury Department, Annual Report of the Secretary of the Treasury, 1939, pp. 454, 509–512.
[39] Hearings before the Temporary National Economic Committee, Part 9, pp. 4090–4093.
[40] Hearings before the Temporary National Economic Committee, Part 9, p. 3523.
[41] Consumer Credit and Economic Stability, New York, Russell Sage Foundation, 1939, p. 107.
[42] Consumer Credit and Economic Stability, New York, Russell Sage Foundation, 1939, p. 107.

ment store goods are sold on the installment plan.[43] These percentages undoubtedly understate the importance of consumers' capital financing since some sales are financed through direct cash loans. Installment credit has become so accepted that "for a large section of the market the amount required as a down-payment and the amount of the periodic installments are more important elements in determining the size of the market than the total purchase price." [44]

TABLE 26.—*Amount and types of consumer credit, 1920–39*

[Millions of dollars]

Year	Total consumer credit		Types of consumer credit outstanding		
	Amount outstanding (end of year)	Change during year	Consumers' capital financing [1]	Income-period financing [2]	Consumers' deficit financing [3]
1920	[4] 2,601				
1921	[4] 2,581	[4] −20			
1922	[4] 3,311	[4] 730			
1923	4,357	[4] 1,046	1,610	2,150	597
1924	4,668	311	1,730	2,270	668
1925	5,510	842	2,300	2,500	710
1926	6,158	648	2,670	2,700	788
1927	6,375	217	2,660	2,800	915
1928	7,196	821	3,170	3,060	966
1929	8,183	987	3,710	3,340	1,133
1930	7,570	−613	3,140	3,100	1,330
1931	6,442	−1,128	2,440	2,550	1,452
1932	4,957	−1,485	1,560	1,890	1,507
1933	4,807	−150	1,620	1,830	1,357
1934	5,222	415	2,040	2,000	1,182
1935	6,080	858	2,710	2,290	1,080
1936	7,435	1,355	3,760	2,660	1,015
1937	8,326	891	4,330	2,900	1,096
1938	[5] 6,926	[5] −1,400			
1939	[5] 7,826	[5] 900			

[1] Credit used to finance the purchase of goods that have some durability.
[2] Credit used to finance consumers' expenditures between dates when incomes are received.
[3] Credit used to finance consumption in excess of income.
[4] Estimated.
[5] Preliminary.

Source: Data for 1923–37 from Rolf Nugent, Consumer Credit and Economic Stability, New York, Russell Sage Foundation, 1939, pp. 116–124. The Board of Governors of the Federal Reserve System prepared the estimated data for 1920–22 and the preliminary data for 1938–39.

Foreign Investment [45]

A commodity and service export balance signifies payments of income within the country without corresponding increases in the current output of goods for domestic consumption. The difference between exports and imports of commodities and services is represented by securities, banking balances, direct investments, and by gold, silver, and currency inventories, all of which constitute an offset to domestic

[43] D. Holthausen, M. L. Merriam, and Rolf Nugent, The Volume of Consumer Credit, 1929-38, New York, National Bureau of Economic Research Bulletin No. 79, 1940, p. 5.
[44] Rolf Nugent, Consumer Credit and Economic Stability, New York, Russell Sage Foundation, 1939, p. 133. Indeed, Nugent pointed out that many installment buyers did not know the purchase price—they knew only the amount of the weekly payment.
[45] In general, see the annual reports by the Bureau of Foreign and Domestic Commerce, Balance of International Payments of the United States, Washington, D. C.; Paul D. Dickens, America's Direct Investments in Foreign Countries, 1929 and 1936, published by the Bureau of Foreign and Domestic Commerce, Washington, D. C., 1931 and 1938; Paul D. Dickens, Direct Foreign Investments in American Industry, 1937, constituting ch. II in Temporary National Economic Committee Monograph No. 6, Export Prices and Export Cartels; and Cleona Lewis, America's Stake in International Investments, Washington, D. C., The Brookings Institution, 1938.

savings. A net increase (decrease) in claims against foreign countries represents investment (dis-investment) by the United States; it is equal to the excess of commodity and service exports over imports minus the inflow of gold and silver.[46]

A commodity and service export balance is the resultant of changes in all of its components. A given balance may arise at different absolute levels of commodity and service exports and imports. Though the absorption of domestic savings in metals, securities, and short-term funds will be the same for any given balance, the stimulating effect of that balance upon employment and production, both at home and abroad, may differ with the absolute levels of the components.

The United States had an excess of commodity and service exports over commodity and service imports in 18 of the 20 years from 1919 through 1938. The balance was 3.1 billion dollars in 1919 and declined sharply thereafter; between 1922 and 1938 it never was more than 727 million dollars; and in 7 of those years it was less than 200 million dollars. The balance of trade of 1 billion dollars in 1938 was the largest since 1921, and this balance, if the war continues, will probably be even larger in 1941 and 1942, in view of the British and Canadian war orders, the decreased exporting ability of the warring nations, and the present and prospective activities of the Export-Import Bank, the Reconstruction Finance Corporation, and other agencies in the field of foreign trade.

Foreigners paid for this excess of exports over imports in two ways: by shipments of gold, silver and currency, and by transfer of title to American and foreign securities.

The relationships of these three elements, summarized in table 27, may best be considered by dividing the years since 1919 into three periods:

TABLE 27.—*Net commodity and service balance of trade, gold and silver movements, and capital movements, 1919–38*

[In millions of dollars]

Year	Net excess of commodity and service exports over imports [1]	Gold, silver, and currency exports or imports (−)	Net export (−) or import of capital			
			Long term [2]	Short term [3]	Residual [4]	Total
1919	3,065	250	−376	−1,781	−1,158	−3,315
1920	2,204	50	−829	−240	−1,185	−2,254
1921	1,414	−786	−671	−86	129	−628
1922	450	−235	−717	375	127	−215
1923	167	−245	1	3	74	78
1924	712	−266	−602	216	−60	−446
1925	386	42	−487	−61	120	−428
1926	156	−112	−602	350	208	−44
1927	507	99	−723	900	−783	−606

[1] Includes merchandise adjustments for (1) commodity exports and imports which are either entirely or partly omitted from the official trade data; and (2) corrections for certain recorded trade figures for balance-of-payments purposes.

[2] Covers the net movement of funds in security transactions as reported by the Treasury Department, and other transactions involving particularly the transfer of properties not represented by security issues.

[3] Includes the net movement of capital in short-term banking funds and in brokerage balances as reported by the Treasury Department; the net change in Phillipine Government accounts with the United States Treasury; net paper currency movements; and miscellaneous capital items.

[4] Includes, in addition to possible errors and omissions in the estimated items, unreported stabilization fund operations and other transactions not exactly reflected for balance-of-payments purposes in the reported figures.

[46] Exclusive of movements of earmarked gold and silver.

TABLE 27.—*Net commodity and service balance of trade, gold and silver movements, and capital movements, 1919–38*—Continued

[In millions af dollars]

Year	Net excess of commodity and service exports over imports	Gold, silver, and currency exports or imports (−)	Net export (−) or import of capital			
			Long term	Short term	Residual	Total
1928	725	232	−662	−188	−107	−957
1929	447	−135	−137	−80	−95	−312
1930	629	−258	−267	−485	381	−371
1931	160	166	219	−709	164	−326
1932	131	−91	217	−409	152	−40
1933	215	83	49	−385	38	−298
1934	461	−1,329	202	184	482	868
1935	183	−2,075	462	1,076	354	1,892
1936	−153	−1,182	773	392	170	1,335
1937	−13	−1,469	522	359	601	1,482
1938	1,001	−1,864	23	308	532	863
1939	658	−3,111	114	1,302	1,037	2,453

Source: Bureau of Foreign and Domestic Commerce, Balance of International Payments of the United States, 1937, pp. 112–113; ibid, 1938, p. 2; and ibid., 1939.

From 1919 until 1930 the United States made substantial foreign loans and direct investment abroad. Large amounts of European, Canadian, and South American securities were acquired.[47] Large sums were invested directly; by 1929 the United States had acquired 7.5 billion dollars of direct investments abroad, distributed as follows:[48]

	Billion dollars
Canada	2.0
Cuba and West Indies	1.1
Mexico and Central America	.9
South America	1.5
Western Hemisphere	5.5
Europe	1.4
Africa	.1
Asia	.4
Australia and New Zealand	.1
Total	7.5

Investments in securities and direct investments abroad helped provide the funds to pay for the excess of United States exports over imports from 1919 to 1930.

From 1930 to 1934 the situation was dominated by foreign liquidation of short-term dollar assets in the United States, in part for conversion into long-term holdings, and in part to pay for our favorable balance of trade.

Since 1934 the movement of capital has been dominated by our large imports of gold and silver. Gold stocks have reached an all-time high, and they are still growing. Shipments of gold and silver to the United States since 1934 have established credits for foreigners; they are the substitute for the security flotations of the twenties. Unlike the latter, which supported a substantial export balance, the credits

[47] For some comments on this process, see Cleona Lewis, America's Stake in International Investments, Washington, D. C., The Brookings Institution, 1938, esp. pp. 376–397. Methods of floating foreign securities during these years were investigated in Hearings on the Sale of Foreign Bonds or Securities in the United States, pursuant to Senate Resolution 19, 72d Cong., 1st sess. 1932.

[48] Bureau of Foreign and Domestic Commerce, America's Direct Investments in Foreign Countries—1936, Washington, D. C., 1938., p. 5.

from gold and silver shipments have been used to buy American securities or to build up short-term assets.

The course of the European war will probably initiate a new trend, in which metal shipments, together with liquidation of foreign holdings, will finance an increasing export balance.

Concentration of Business Investment and Investment Decisions

There are elements of concentration in both investment and saving. The effects of concentration upon the volume of savings and upon the flow of savings through savings institutions and the capital markets have already been discussed. At this point it is proposed to discuss the concentration of business investment and of business investment decisions. Though Government investment is concentrated among a relatively small number of the 175,000 governments in the United States, it cannot meaningfully be treated from this point of view; and residential construction, which is decentralized and relatively unconcentrated, need not be.

Though the concentration of business investment and the concentration of business investment decisions are subjects of first-rate significance for the functioning of the economic system, surprisingly little is known about them. A fairly complete treatment would attempt to provide satisfactory answers to at least the following questions: What is the amount of investment in different segments of the economy? What is the concentration of investment within each of these segments, and within the whole economy? How much is invested by large and small business enterprises? How much by corporations and other types of business enterprises? How much by old and new business enterprises? Who is responsible for investment decisions in different segments of the economy? How large is this group? Does it consist of men trained in business and finance, or of men trained in engineering and research? What is the role of investment bankers, lawyers, accountants, and other professional consultants in determining the amount and direction of investment? What are the background, training, outlook, interests, environment, and other major characteristics of the group of persons responsible for the bulk of our investment decisions? What criteria and data do they employ in deciding when, where, and how much to invest?

Practically nothing is known about some of these questions at the present time, and about none are the data complete.

Recent investigations have thrown much light on the relative importance of different sectors of investment. Table 28 summarizes these data on business investment in plant and equipment for 3 years: 1923, the peak year of railroad investment; 1929, the peak year of business investment; and 1937.

TABLE 28.—*Business investment in plant and equipment in major segments of the economy, 1923, 1929, and 1937*

Business segment	1923	1929	1937
Total business investment in plant and equipment (millions)	$7,902	$10,157	$7,570
Transportation and utilities:	*Percent*	*Percent*	*Percent*
Railroads	14	8	7
Electric power	9	8	5
Telephones	4	6	5
Transit	2	1	1
Other utilities	3	4	2
Total	32	27	20
Mining and manufacturing	34	35	41
Other:			
Agriculture	10	10	12
Commercial and miscellaneous	24	28	27
Total	34	38	39
Total	100	100	100

Source: See appendix XVIII. Estimates by George Terborgh, in Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, September 1939 and February 1940.

Business investment in plant and equipment accounted for more than half of total investment by the Nation in 1923, 1929, and 1937. How many business enterprises were responsible for the bulk of this business investment?

It appears from table 28 that 27 percent of business investment in 1929 and 20 percent in 1937 were made in the field of transportation and public utilities, a field predominantly characterized by large enterprises. The investments made by individual companies in these broad fields can be calculated only with considerable difficulty. On the other hand, the concentration of capital assets (the net book value, after deduction of reserves for depreciation and depletion) will furnish a very rough index of the flow of investment. A special study of corporation income tax returns by the National Resources Committee [49] presented data, on a consolidated basis, of assets and income in major lines of activity. According to this study the 92 largest transportation and other public utility corporations and their subsidiaries held 81.9 percent of the net (depreciated) capital assets in this group in 1929, and the largest 92 corporations held 88.4 percent of the net capital assets in 1933. The Treasury Department's Statistics of Income for 1937 furnishes the latest data available on this point, although these data seriously understate the degree of concentration of assets.[50] In 1937 there were 114 transportation and other public utility companies with assets of more than $100,000,000; and these companies held 63 percent of the net capital assets in the group. Investment decisions in the field of transportation and public utilities were even more concentrated than these data indicate. Apart from the common and interlocking directors, who constitute a significant fraction of the total executive officials in the field,[51] the holding company structures in electric light and power, natural gas, water, and

[49] National Resources Committee, The Structure of the American Economy, Washington, D. C., 1939, appendix 11, p. 286.

[50] Only railroads have the privilege of filing consolidated tax returns under the Revenue Act of 1934. The studies of the National Resources Committee show that the degree of concentration of assets is understated even when corporations file on a consolidated basis, as they did before 1934.

[51] National Resources Committee, The Structure of the American Economy, Washington, D. C., 1939, appendix 12, p. 298, et. seq.

railroads act still further to reduce the number of persons ultimately responsible for investment decisions.

Approximately 40 percent of business investments in plant and equipment are made in the fields of manufacturing and mining. Holdings of net capital assets in these fields show a substantial degree of concentration. In 1929 the 82 largest manufacturing corporations and their subsidiaries held 42 percent of the net capital assets of all manufacturing corporations; and in 1933 the 78 largest held 46 percent of the net capital assets.[52] The Statistics of Income data for 1937, which, it has been pointed out, seriously understate the degree of concentration of assets, indicate that the 77 manufacturing corporations with assets of more than $100,000,000 held 34 percent of the net capital assets in the group. The concentration in the manufacturing sub-groups naturally varies with the character of the product and the type of technology and financial structure. The concentration in a few industrial sub-groups may serve to illustrate the situation:

Thirty-nine liquor and beverage companies had assets of more than $5,000,000; they held 28 percent of the net capital assets in the group.

Fifteen tobacco companies had assets of more than $10,000,000; they held 81 percent of the net capital assets in the group.

One hundred and nine apparel and clothing companies had assets of more than $1,000,000; they held 36 percent of the net capital assets in the group.

Thirty-four printing and publishing companies had assets of more than $10,000,000; they held 24 percent of the net capital assets in the group.

Three motor vehicle companies had assets of more than $100,000,000; they held 68 percent of the net capital assets in the group.

These data refer only to corporations. But corporations carry on practically all the business in the transportation and public utility fields and the bulk of the activity in the various fields of manufacturing. The role of corporations in manufacturing may be indicated by the ratio of corporate value of product to total value of product. According to the data computed from the Census of Manufactures, corporations were responsible in 1929 for the following percentages of total value of manufacturing product: [53]

	Percent
Food and tobacco	89. 2
Textiles and leather	82. 2
Lumber and stone, clay and glass	89. 1
Paper	97. 1
Printing and publishing	86. 9
Chemicals	97. 4
Metals	97. 8
Miscellaneous manufacturing	91. 9

Trade and construction are characterized by many more business units and by large numbers of unincorporated enterprises. In the field of trade, corporations are responsible for 63.9 percent of the total value of product. In 1937, the 173 corporations in the field

[52] National Resources Committee, The Structure of the American Economy, Washington, D. C., 1939, appendix 11, p. 285.

[53] Solomon Fabricant, Capital Consumption and Adjustment, New York, National Bureau of Economic Research, 1938, p. 54.

with assets of more than $10,000,000 held 30 percent of the net capital corporate assets. In the field of construction, corporations accounted for 54.9 percent of the total value of product.[54] In 1937, the 238 corporations with assets of more than $1,000,000 in the incorporated segment of the field held 47 percent of the net capital corporate assets.

The over-all concentration of business wealth is indicated by two rough estimates by the National Resources Committee. In 1933 the 200 largest nonfinancial corporations and their subsidiaries owned instruments of production (land, buildings, and equipment) estimated at 59.9 billion dollars. This was equal to 64.2 percent of the amount held by all nonfinancial corporations. This same group of corporations had physical assets (instruments of production plus inventories) estimated at 63.8 billion dollars. This represented 59.6 percent of the 107 billion dollars of physical assets held by all nonfinancial corporations, and 46 to 51 percent of the 125 to 140 billion dollars of all industrial wealth.[55]

This discussion of concentration is not concerned with the presence or the absence of competiton, or with the price, production, or other business policies flowing from them. The discussion is directed merely to the number of business enterprises that are responsible for the bulk of business investment. The 200 largest nonfinancial corporations in 1933 held 64 percent of the net capital assets of all corporations. They probably account for approximately the same proportion of investment by corporations. It is probable that 5,000 corporations hold two-thirds of business net capital assets and therefore account for roughly the same percentage of investment by all business enterprises. (This excludes agriculture, but includes all other unincorporated and incorporated enterprises.) Since there are approximately 2,100,000 business enterprises in the United States at the present time, it would seem that one-quarter of 1 percent of all the business enterprises are responsible for two-thirds of business investment.

How large is the group of men responsible for business investment? It has been estimated that there are probably 4 to 5 officials in each of the larger companies who are responsible for the determination of business policy.[56] Taking the dominant group of business enterprises as approximately 5,650 on the basis of sales and assets, and assuming 4 to 5 top executives per company, and adding several thousand lawyers, accountants, investment bankers, and other professional persons, Fortune magazine estimated that 30,000 persons constitute the managers of our business economy.

This estimate does not seem too small. On the contrary, decisions with respect to business policy may probably be ranked in a hierarchy, with the number of officials responsible for policy varying with the type of decision under consideration. The decision with regard to how much, when, and where to invest is undoubtedly one of the most important policy decisions, and would tend to be made by a relatively small group. Overlapping directorships to some extent affect investment decisions, for questions of making one business enter another's

[54] Data on value of product from Solomon Fabricant, Capital Consumption and Adjustment, New York, National Bureau of Economic Research, 1938, pp. 53–54; data on net capital assets from Bureau of Internal Revenue, Statistics of Income, 1937, Part 2, Washington, D. C., 1940.

[55] National Resources Committee, The Structure of the American Economy, Washington, D. C., 1939, p. 106. Industrial wealth includes total national wealth less agricultural wealth, governmental wealth, and residential housing.

[56] "The 30,000 Managers," Fortune, February 1940, p. 58.

field must occasionally arise. Some illustrations in connection with the operations of life insurance companies have been given, but these questions are met throughout the field of enterprise. Furthermore, even separate business enterprises to some degree fall into "interest groups." The National Resources Committee analyzed eight such groups, and found that the assets of the corporations in these groups aggregated $98,000,000,000 in 1935, distributed as follows: Railroads, $24,000,000,000; utilities, $25,000,000,000; industrials, $25,000,000,000; and banks, $24,000,000,000.[57] No quantitative effect can be assigned to the activity of these "interest groups," but their activity is clearly to limit and reduce the number of business executives responsible for investment decisions.

It is probable that the control of investment decisions has become relatively more concentrated within the past two decades. There are several pointers in this direction. Large corporations have become relatively more important in the economy through growth, merger, and absorption, as the automobile, electric light and power, copper mining, air transportation, and petroleum industries indicate. The growth of hotel, food, drug, variety, and other chains has concentrated investment decisions in these fields. The number of new enterprises started each year has declined in recent years; while the number of business enterprises per thousand of population declined from a high of 18.5 in 1926, to 15.6 in 1933–35, and then increased slightly to 16.1 in 1938.[58]

With regard to two of the questions posed at the beginning of this section, namely, what are the background and origin of the people who make business investment decisions and what are criteria they employ, the data leave much to be desired. F. W. Taussig and C. S. Joslyn in 1932 made the most comprehensive study that has ever been made of the social classes that supply American business leaders, and of the relative importance of hereditary and environmental factors in determining the contributions of the various classes.[59] They found that the bulk of American business leaders come from a business or professional background and from corresponding income levels; that business families make the largest contribution to the class of business executives; that laboring families make extremely small contributions; that a large and increasing proportion of American business executives have college or technical training; and that more than one-quarter of the American business leaders had friends or relatives interested as owners or executives in the business giving them their first position.

There is room for a thorough-going dynamic analysis of business executives to supplement this study of origins; and no such survey can afford to neglect the effects of similar income levels, similar residential and vacation areas, and means of group intercommunication.

Even less is known of the criteria that actually determine investment decisions. There are theoretical formulations of the criteria that, rationally evaluated, determine investment and expansion.[60]

[57] Structure of the American Economy, Washington, D. C., 1939, appendix 13, p. 306.

[58] From estimates of population and number of business enterprises, Bureau of Foreign and Domestic Commerce, Statistical Abstract of the United States, 1939, pp. 2 and 307.

[59] American Business Leaders, a Study in Social Origin and Social Stratification, New York, Macmillan, 1932. See the references there given; F. L. Allen, Lords of Creation, Harper, New York, 1935; and Karl Mannheim, Man and Society in an Age of Reconstruction, New York, Harcourt Brace, 1940, pp. 79–91.

[60] Among the recent works in this field, the following may be cited: J. R. Hicks, Value and Capital, New York, Oxford Press, 1939; A. G. Hart, "Anticipations, Business Planning, and the Cycle," Quarterly Journal of Economics, February 1937; N. Kaldor, "The Equilibrium of the Firm," Economic Journal, March 1934; Ben W. Lewis, "The Corporate Entrepreneur," Quarterly Journal of Economics, May 1937.

But such formulations may easily imply a false definiteness to the criteria inducing investment and suggest the application of a dispassionate rationality. Since there is no well defined stopping place along the continuum from competition to monopoly, no individual businessman can with perfect assurance select the theoretical criteria that should govern his actions. Furthermore, estimates of prospective returns vary widely, and are subject to substantial margins of error, and within these wide limits many nonbusiness factors sway decisions. These estimates for large enterprises cannot theoretically be checked, in retrospect, against the amount of the national income. The national income, and business profits in general, are the result, as well as the cause, of these investment decisions. Indeed—

> it may be said that investment decisions which in themselves alone might be unwise because of their being based upon too optimistic a view of business might actually prove to be correct if all corporations made the somewhat doubtful investment decisions and from so doing greatly increased the velocity of money.[61]

In any event, Martin Taitel has shown that usually there is a definite association between profit rates and (noncash) asset expansion rates of corporations carrying on similar activities; but that 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 expansion of assets.[62]

It is important to know what parts concentration, bureaucracy, politics, personality, and social groupings play in the determination of when, how much, and where investments will be made. Concentration of markets, patents, sources of raw material, or wealth may retard or prevent investment which disturbs the value of existing properties, even though such investment promises favorable returns.[63] It is interesting to note that the new technological processes and changes in markets in steel associated with the continuous wide sheet and strip mill were first met by the smaller corporations in the steel industry. Was the lagging of the United States Steel Corporation behind the procession the result of banker domination, or the growth of a bureaucracy? Do these factors explain why the finance committee of the corporation never approved more than 55 percent of the engineers' budget recommendations between 1929 and 1937?[64] All large enterprises, whether in business or government, are bureaucratic, using that term in a technical sense. But Shelby Cullom Davis pointed out that bureaucracies in the popular sense, i. e., bureaucracies characterized by red tape, rigidity, and formalism, grow up in many industries, particularly in those with a large capital investment and a secular downtrend. In such enterprises investment decisions are made "with more hesitation and deliberation," and "the influence of capital, not venture, equity capital, but yield-demanding, bond capital, is apt to play a more predominant role—and this influence is apt to be strongly on the conservative rather than the expansionist side."[65]

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[61] Shelby Cullom Davis, The Investment Decisions of Industry, a multilithed pamphlet, 1939, p. 9.
[62] Temporary National Economic Committee Monograph No. 12, Profits, Productive Activities, and New Investment, pp. 107–122.
[63] This is discussed further at infra, pp. 100–102; cf. Anna R. Burr, Portrait of a Banker, New York, Duffield, 1927, p. 241.
[64] Shelby Cullom Davis, op. cit., pp. 5–7.
[65] Ibid., p. 4. The same suggestion was made in more popular fashion by Roger W. Babson: "The great drag upon business today is that the pessimists who are old men engaged in declining industries and who are doing business in tax-burdened cities, hold the strings to the money bags." "Why the Pessimism?" in the Washington Post, October 7, 1940.

Research is becoming more and more institutionalized in the hands of large corporations. This makes it possible to finance more expensive, longer range researches, but it concentrates command over the results.[66] Since large-scale enterprise "undoubtedly is more unwieldy and cumbersome in the making of its investment decisions than a small corporation dominated by one individual," institutional slowness is a natural result.[67] This at times is reinformed by the desire and the ability to maintain the values of existing processes and products by delaying the adoption of research findings.

Many other questions need to be considered in determining the criteria governing investment decisions. To what extent does the pressure to maintain cash dividend payments limit or postpone outlays for expansion and modernization? Is capital timid, or is the management that asks for capital timid?[68] Is it true that non-economic considerations affect investment decision, as has been alleged in the explanation that utility investment programs were continued into 1930 at the request of President Hoover? In some cases the export of American capital in the twenties was facilitated by special rewards to various foreigners (undisclosed at the time) and by commissions to investment bankers that were substantially greater on foreign loans than on domestic ones.[69] To what extent may investment decisions be affected by institutional factors of this character? To what extent do social conditionings affect the direction and the timing of investment? No satisfactory answer can be given to any of these questions at the present time.

Factors Governing the Level of Investment

Investment is often treated as a transaction governed by fine profit or interest calculations. Such a treatment is misleading. Governmental investment perhaps indicates this most clearly.

Outlays by the Federal, State, and local governments for highways, schools, water systems, and other properties are not based upon clearly measurable profit considerations. Of course, everyone who uses the wider, shorter road with reduced grades that replaces a narrow, winding road will enjoy advantages. Automobile owners and operators will save on gas, oil, repairs; commercial users will, in addition, save on salaries and interest charges. It is possible roughly to calculate these direct savings to automobile owners and operators, and it has been suggested that public agencies invest in roads up to the point where the additional cost of the road is less than the additional profits to the users of the road. But such calculations are inexact and incomplete. Some of the benefits from the new road may be widely diffused. Railroad stockholders may be affected adversely, while other property owners receive windfalls. The decision to invest or not to invest in roads must thus deal with many immeasurables, many imponderables, and many conflicting interests. Yet the decision to invest or not to invest in roads represents almost the closest profit calculation in the whole field of Government investment. With respect to other aspects of public investment—for national

[66] Shelby Cullom Davis, op. cit., p. 3.
[67] Shelby Cullom Davis, op. cit., p. 15.
[68] Ibid., p. 16.
[69] Cf. Cleona Lewis, America's Stake in International Investments, Washington, D. C., The Brookings Institution, 1938, pp. 376–387.

defense, health, housing, and recreation—it becomes clear at once that public investment is not, and cannot be closely responsive to profit considerations.

It has not been so generally recognized that private investment is, to a substantial degree, not related to close profit calculations. More than 70 percent of the total value of the output of capital goods for business use in 1929 had an expected life of more than 10 years.[70] Knowledge of the future is so limited that even an investment with an expected life of 10 years must be governed less by exact and conclusive information than by hope. As the expected life of an investment increases, the amount of information with respect to its future profitability grows smaller; and the elements of hope and confidence must necessarily loom larger. If a business enterprise constructs a dam with an expected useful life of 60 years, no one can say with any assurance whether the dam will or will not pay its way. No one knows what the level of electricity prices will be during the next 60 years; no one knows what wages, materials, and service cost levels will be; no one knows how long electricity will continue to be generated by water power. The situation was the same when the railroads were built. At that time it was impossible to say whether any of the railroads would pay out. The growth and movement of population, and the development of industrialization and large-scale specialized business enterprise—none of which could be foreseen with any precision—have bailed out these and many other projects. The public subsidies, grants, and other advantages were never publicized; and the repeated bankruptcies of most of the roads have been forgotten.

Whether investments pay out depends not only upon specific factors affecting each industry, but upon two general factors. The first is the future level of prices. Any substantial change in the general level and structure of prices will seriously affect the profitability (and the solvency) of business enterprises. The second is whether the country operates on a level of full employment or on a level of more or less serious unemployment. Unless major changes in consumption habits take place, present investments will pay out only if future investments continue to be made at a high rate. Only by continuing to make investments in the future in large volume, assuming no change in present savings patterns, will sufficient income and purchasing power

[70] This may be illustrated as follows:

TABLE 29.—*Output of business capital goods in 1929 classified by length of expected useful life*

Expected useful life	Percentage of output	Cumulative percentage of output
5 years or less	12.1	12.1
More than 5 years to 10 years	16.5	28.6
More than 10 years to 15 years	19.8	48.4
More than 15 years to 20 years	15.2	63.6
More than 20 years to 25 years	7.0	70.6
More than 25 years to 30 years	7.2	77.8
More than 30 years to 40 years	15.4	93.2
More than 40 years to 50 years	6.5	99.7
More than 50 years	.3	100.0
Total	100.0	

Source: Solomon Fabricant, Capital Consumption and Adjustment, New York, National Bureau of Economic Research, 1938, p. 181.

be distributed to the community to purchase the goods and services produced with present investments.

Confidence must be an important element in investment. But confidence is more than close profit calculation; it has substantial components of hope, imitation, and public opinion. There are styles or cycles in investment just as in ladies' hats. To some degree the introduction of private generating plants and of factories to manufacture glass bricks is subject to the same influence as the replacement of mahogany furniture by Swedish modern. It is easier to have confidence when immigration is substantial, when population is growing rapidly, when there are large shifts from rural to urban areas, when foreign trade is increasing, than when these factors are not present. Large-scale spending for national defense or war increases economic activity and results in privately and publicly financed expansion. This is obvious, and it may be disregarded here, since depression and unemployment are not wartime phenomena. Apart from defense and war expenditures, it is necessary to examine some of the major growth factors and some of the other factors that affect expansion. Changes in basic growth factors, coupled with the doubts created by political and social developments, accounted for a large part of the decrease of confidence and lack of investment at home during the thirties.

The factors governing the level of investment may be conveniently though not rigidly grouped under two heads: general factors which affect many industries or areas at the same time, and specific factors which affect one or at most a few industrial segments.

GENERAL FACTORS [71]

There are four wide and general factors that affect investment. These are the growth of new industries, the growth and migration of population, and changes in productivity and the prices of capital goods. A fourth factor, lack of balance in cost-price relationships, is often thought to have such a wide, general effect upon total investment and is discussed here for that reason. War and large-scale national defense efforts have been intentionally omitted from this list—though it is obvious that they may give rise to greater investment booms than any or all of the four factors mentioned.

Growth of New Industries

The growth of great new industries makes for an optimistic outlook, increases the general profit possibilities in business and industry, and increases the booms while it dampens the depressions of business cycles. Some of the great new industries of the past are household names. They are commonly—and correctly—associated with the great American booms. The canal boom of the 1830's; the railroad booms before and after the Civil War; the growth of the electrical industries after 1900, a growth which overlapped the rise of the auto-

[71] The factors discussed in this section are based upon the testimony on savings and investment presented to the Temporary National Economic Committee, although they have a somewhat different emphasis. See Hearings before the Temporary National Economic Committee, Part 9. Since these hearings, criticisms have been leveled at the testimony concerning these factors and their implications. See especially, Machinery and Allied Products Institute, Saving and Investment in the American Enterprise System, published by the Institute, Chicago, 1939; and H. G. Moulton, G. W. Edwards, J. D. Magee, and Cleona Lewis, Capital Expansion, Employment, and Economic Stability, Washington, D. C., the Brookings Institution, 1939, especially ch. IX.

mobile and its associated road building, oil, rubber, and other industries, particularly after the World War—all these come readily to mind.

Long before the great depression students of business cycles recognized that economic progress came by spurts rather than at a uniform rate. Such notable writers on business cycles as Spiethoff, Wicksell, Cassel, Schumpeter, and Robertson have stressed the discontinuity and the jerkiness of economic progress.

The discontinuity of industrial development fundamentally modifies the course of business cycles. As Hansen explained:

> In periods when great new industries are rising to maturity over several decades, it is likely that booms will be very vigorous and carried to high points, and depressions will be short-lived. And similarly in periods when great new industries have reached their maturity and ceased to grow, and equally important new industries have failed to take their place, it is likely that booms will be less vigorous, prosperity relatively short-lived, and depressions deep and prolonged.[72]

Each generation forgets the history of its predecessors; each minimizes the depressions, the expansions, the booms, and the periods of unemployment of the past. It is necessary to reemphasize the jerkiness of economic progress, the dependence for great bursts of prosperity upon the growth of great industries, or upon the growth of clusters of smaller industries that induce the investment of capital on a large scale. During and after the great depression this reemphasis became known as the thesis of "economic maturity," and those who proposed it were credited as thinking that the growth of the United States was finished. This conclusion is unwarranted. In a dynamic high-savings, high-investment economy, there is no assurance that maturity has been reached. A single industry or a group of related industries in such an economy may reach maturity, but the economy as a whole need not. For example, if airplanes became so efficient, so simple, and so cheap that they came to possess the same advantages over automobiles that automobiles possessed over horse-drawn carriages, the airplane manufacturing, servicing, and supply industries might furnish the impetus for another long wave of investment. No one knows whether this will or will not be the case. No one knows whether the same thing may not occur in plastics, residential construction, television, and a horde of other industries born or yet to be born.

The sooner such an industry or group of industries inducing large-scale investment is found, the longer and more intense its period of development, the easier it will be to find outlets for our savings, and the higher will be the level of employment and income. But if such outlets are not found, and the potential volume of savings in relation to national income is not changed, it is certain that the economy will fail fully to utilize its resources and manpower.

Growth and Shifting of Population

Our rapid increase of population induced a vast capital outlay for the housing, transportation, utilities, and all other facilities which are basic for modern life. The rapid increase of population reduced economic risks and added a tone of buoyancy and optimism to economic development. As Hansen noted:

> A rapid growth of population minimized the risk of new ventures. If optimism had carried railroad building too far at the moment, if a city had temporarily

[72] Hearings before the Temporary National Economic Committee, Part 9, p. 3514.

overbuilt, the damage was short lived. Expansion and growth soon made good the error. Businessmen could look far into the future with gigantic plants, with anticipatory capital outlays, investment plans which had no relation to the present, and which were based upon the expectation of growth and expansion.[73]

The population of the United States increased from 3,900,000 in 1790 to 123,000,000 in 1930. Except during the decades ending in 1910–30, when the absolute increases in population were approximately the same, the absolute increase in population in each decade was larger than in the preceding one. The decade ending in 1940, however, shows a sharp reversal in this trend. The growth in the 10 years ending in 1940 will be less than two-thirds of the average of 15,600,000 in the 3 preceding decades. After 1940 the decennial increases in population will become steadily smaller and smaller (table 30).

TABLE 30.—*Population and amount of increase of population, by decades, 1790–1980*

[In thousands]

Decade ending—	Population	Increase in the decade		Decade ending—	Population	Increase in the decade	
		Amount	Percent			Amount	Percent
1790	3,929			1890	63,056	12,794	25.5
1800	5,308	1,379	35.1	1900	76,129	13,073	20.7
1810	7,240	1,931	36.4	1910	92,267	16,138	21.2
1820	9,638	2,399	33.1	1920	107,190	14,923	16.2
1830	12,866	3,228	33.5	1930	123,091	15,901	14.8
1840	17,069	4,203	32.7	1940 [1]	131,669	8,894	7.2
1850	23,260	6,191	36.3	1950	140,561	8,892	6.8
1860	31,502	8,242	35.4	1960	146,987	6,426	4.6
1870	39,904	8,402	26.7	1970	151,170	4,183	2.8
1880	50,262	10,358	26.0	1980	153,022	1,852	1.2

[1] The absolute and percentage increases during the decade 1930–40 are based upon a population of 122,775,000 as of 1930. This is the figure of the Bureau of the Census, rather than the corrected figure developed by the National Resources Committee.

Source: Hearings before the Temporary National Economic Committee, Part 9, p. 4007, from the National Resources Committee, The Problems of a Changing Population, Washington, 1938, pp. 21, 24.

The decade of 1930–40 saw a reversal of the tide of immigration. The United States for the first time had a net excess of departures over admissions.[74]

This change in population growth and immigration has had, and will continue to have, three important consequences. First, a change in the age composition of the population. The number of persons aged 60 or more increased from 10,500,000 in 1930 to 13,300,000 in 1940, and is expected to increase to 31,300,000 by 1980.[75] The number of young people has decreased. Secondly, the absolute annual increase in number of families reached its peak in 1920–25. It is estimated that the average annual increase in the number of families was 577,000 in 1920–25 and 479,000 in 1935–40.[76] Thirdly, families are steadily growing smaller.

The change in age composition may affect, to some extent, the direction and even the amount of construction, while the smaller increases in population and families will call for smaller increments of

[73] Hearings before the Temporary National Economic Committee, Part 9, p. 3504.
[74] Department of Commerce, Bureau of Foreign and Domestic Commerce, Statistical Abstract of the United States, 1939, p. 98.
[75] National Resources Committee, Problems of a Changing Population, 1938, p. 32.
[76] L. J. Chawner, Residential Building, National Resources Committee, Housing Monograph Series, No. 1, 1939 ,p. 17.

new construction.[77] On the other hand, the larger number of dwelling units in existence now, as compared with the past, will result in a larger replacement demand than formerly.

A movement of population within the country will induce the same demand for investment in housing, schools, and utilities as an increase in population. At the end of the eighteenth century the population of the country was largely confined to a strip along the Atlantic coast. During the nineteenth century the growth and movement of population filled in the area from coast to coast and from border to border. Internal migration still goes on, and the recent migrations from the Dust Bowl to California and the Pacific Northwest have been brought sharply into public consciousness. Though the net migration from rural to urban areas in the twenties was lower than net migration in the thirties, the gross migration (rural-urban, urban-rural, and rural-rural) may not have been substantially smaller.

Urbanization has been one evidence of our internal and external migration. Three percent of the population lived in places with 8,000 or more inhabitants in 1790; today more than half of the population lives in such places.[78] Internal migration accelerated this urbanization, and in the 1920's was almost wholly responsible for it. In the decade ending in 1930, for example, Los Angeles County gained 1,183,000 people through internal migration. During 1921–30, internal migration increased the population in the metropolitan areas of New York, Los Angeles, Chicago, and Detroit by 4,540,000; and the urban population of the country by more than 8,300,000.[79] This drift from the country to the city began slowing down in 1926, and was reversed in 1932 and 1933; the migration after 1934 was smaller than in 1922–26, but it left the farm population in 1940 lower than that in 1930.[80]

The movement of industry furnishes an interesting commentary on the movement of population. Despite the growth of suburbs, there has apparently been no widespread movement of industries out of the major industrial areas. In this respect, the movement of the textile and the boot and shoe industries into the South has been exceptional. In general, the older industrial areas have declined in relative but not in absolute importance. For the most part industrial movement is to outlying areas rather than to distant areas. The diffusion is taking place within the 200 major industrial counties in the United States, although there is some probability that it may be extended to an additional 50 counties.[81]

Changes in Productivity and Price Levels

Changes in the physical productivity of a dollar's worth of investment in plant and equipment affect the dollar level of investment. The lower the prices of investment goods fall, the more the physical productivity of investment expenditures increases, the smaller the dollar amount of investment necessary to maintain and increase output.

[77] Assuming no change in the quality of construction or in the amount of housing space per capita.
[78] Bureau of Foreign and Domestic Commerce, Statistical Abstract of the United States, 1939, p. 6.
[79] C. W. Thornthwaite, Internal Migration in the United States, Philadelphia, University of Pennsylvania Press, 1934, pp. 30–31.
[80] On the basis of preliminary census testimony, cf. testimony of Conrad Taeuber before the Senate Committee holding hearings on Civil Liberties and Violations of the Rights of Labor, May 6, 1940.
[81] Daniel Creamer, Is Industry Decentralizing? Philadelphia, University of Pennsylvania Press, 1935, pp. 73–74; National Resources Committee, Structure of the American Economy, 1939, pp. 56–59.

Increases in productivity during the past two decades appear to have been more important in reducing the dollar volume of investment than decreases in prices. Except for the years 1931–36 the prices of business capital goods have fluctuated within a narrow range (table 31). But the price indexes of capital goods leave much to be desired. The goods are relatively understandardized; and adjustment of the components of the index for changes in productivity is extremely difficult. A grinding machine employing an improved abrasive may still be labeled a grinding machine in an index of machine tool prices, though its capacity be substantially increased. Hence, the price indexes have a serious upward bias; they would show substantial reductions if they could be corrected for increases in productivity.

TABLE 31.—*General index of the prices of business capital goods, 1920–39*

[1929=100]

Year	Index	Year	Index
1920	130.2	1930	95.7
1921	102.4	1931	88.7
1922	93.0	1932	82.1
1923	103.5	1933	80.5
1924	101.4	1934	87.2
1925	99.5	1935	88.4
1926	99.4	1936	90.4
1927	99.2	1937	98.5
1928	98.0	1938	98.5
1929	100.0	1939	97.8

Source: Solomon Fabricant, Capital Consumption and Adjustment, New York, National Bureau of Economic Research, 1938, table 32. Data for 1936–39 are unpublished, but are reproduced by special permission of Dr. Fabricant and the National Bureau of Economic Research. The index includes machinery, machine tools, electric cars, processed capital equipment (total weight, 17), and various types of construction (total weight, 7).

The productivity of capital investment has been increasing continuously. The most comprehensive survey of changes in productivity indicated in 1938 that—

> The available data in the major fields of economic activity show that the average output per man-hour in most industries increased after 1929, even during years of declining production, although the increases were then often at a slower rate than before. With recovery in production, the pre-1929 rates of increase were either resumed or exceeded.[82]

Some of the more important factors leading toward increased productivity in recent years have been: (1) An increasing utilization of large-capacity equipment, accompanied by decreases in equipment expenditures per unit of capacity. Such equipment, furthermore, permits the use of refinements and auxiliary devices, and requires less floor space. (2) A growing importance of industrial measuring, recording, and controlling devices. These installations are relatively inexpensive, but contribute substantially toward an increase in the effective capacity of existing installations. (3) Improvements in the composition of metals, together with mechanical changes. These have substantially increased the productive efficiency and the durability of machinery. Improvements have been effected in paints,

[82] David Weintraub, "Effects of Current and Prospective Technological Developments Upon Capital Formation," American Economic Review, Supplement, vol. XXIX, 1939, p. 16. Much of this section is based upon this article. See Works Progress Administration, National Research Project, Production, Employment, and Productivity in 59 Manufacturing Industries, Washington, D. C., 1939, in 3 volumes, pt. 1, ch. 3.

varnishes, and lacquers. Soil fertility has been increased, disease-resistant varieties have been developed, and other chemical and biological improvements have contributed to yields. (4) "Managerial" improvements. These have resulted in better plant utilization, more efficient factory layout, and more effective flow of production.

The effects of increases in productivity upon investment are strikingly clear in many industries.[83] The amount invested in plant and machinery in the automobile industry has declined since 1926. Investment in fixed capital in 1938 was 38 percent less than in 1926, while output (of vastly improved quality) was greater by 22 percent.[84] In 1926, the fixed capital invested in the iron and steel industry was valued at 3.8 billion dollars; in 1937, at 3 billion dollars; yet capacity was 57.8 million tons in the former year, compared with 69.8 million tons in the latter.[85] The data presented by the United States Steel Corporation to the Temporary National Economic Committee illustrate these trends for one company. Between 1926 and 1937 the book value of fixed assets decreased from 1.7 billion dollars to 1.4 billion dollars, but ingot capacity increased from 22 million to 25 million tons. The estimated value of fixed capital in the privately owned segment of the electric light and power industry was 7 billion dollars in 1926, and 10.9 billion dollars in 1938; output (measured in index numbers) rose from 106 in 1926 to 239 in 1938.[86] Thus, from 1926 to 1938 investment increased by 56 percent, but output increased by 125 percent. In the railroad industry, with a $17,000,000,000 investment in plant and equipment, creosoting has doubled the life of a tie, and heavier rails and steel rolling stock have reduced replacement costs. Locomotive tractive power has increased, more efficient locomotive designs and the widespread use of water treatment have reduced repairs and increased both the capacity and the life of steam engines. The decrease in passenger traffic, the decline in less than carload lot shipments, and the increase in the average length of haul have reduced the wear and tear. Utilization of existing plant has increased. Train speeds have increased sharply, and terminal facilities operate with greater rapidity. Finally, in the machine tool industry a recent survey indicated that of a total of 11,610 machines purchased in 1936–37, the 4,666 acquired for the specific purpose of replacing old ones were substituted for 7,377 machines. "It may well be assumed that the total capacity of the machines used for replacement was at least equal to that of the machines which were scrapped."[87]

Cost-Price Relationships

Investment is retarded when the level of costs is too high in relation to the level of prices. This lack of balance may arise in two ways. First, the effects of an increase in productivity and efficiency may not be passed on in the form of lower prices, improved qualities, or both. The failure of prices to adjust to this basic factor conditioning economic

[83] In general, see Works Progress Administration, National Research Project, Production, Employment, and Productivity in 59 Manufacturing Industries, Washington, D. C., 1939, in 3 volumes.
Changes in accounting practices affect the capital values cited in this paragraph. These seem to be the best figures available; and in any case the inferences made on the basis of these and other data appear to need little qualification.

[84] Spurgeon Bell, Productivity, Wages, and National Income, Washington, D. C., The Brookings Institution, 1940, pp. 288–290, 299.

[85] Data compiled by the American Iron and Steel Institute, as of January 1. Cf. Bell, Productivity, Wages, and National Income, Washington, D. C., The Brookings Institution, 1940, pp. 288–289.

[86] Bell, op. cit., pp. 275–277.

[87] David Weintraub, "Effects of Current and Prospective Technological Development Upon Capital Formation," American Economic Review, Supplement, vol. XXIX, 1939, p. 16.

activity [88] prevents the optimum allocation of resources, and it makes it impossible for the community to enjoy the expanded output which is the fruit of economic progress.[89] In general, however, this type of cost-price derangement grows slowly and probably without serious effects upon the course of the business cycle. Secondly, prices and costs may get out of line during the swing from prosperity to depression and back again.[90] Some prices, such as those of agricultural products, are relatively flexible, while others, such as public utility charges, wages, and rents, are more or less rigid. When business activity declines some prices therefore fall more quickly and more rapidly than others. Depression in the economic system is thus accompanied by dispersion in the price structure. If during the downswing the price of wheat falls faster than the prices of tractors and farm machinery, this relationship puts an additional obstacle—but seldom the most important one—in the way of investment in farm machinery. Similarly, if concerted action or speculation results in sharp price increases during the upswing, an incipient investment boom may be choked off. There are undoubtedly many individual instances where sticky costs are maintained at a level that discourages investment. In these cases bringing costs and prices into competitive alinement would expand output and encourage investment.

It is doubtful, however, whether price dispersion (including the dispersion of cost-price relationships as a special case) may be considered as a general deterrent of investment and economic activity. The question is essentially whether price dispersion causes business cycles, or whether price dispersion is merely another aspect of business cycles.[91]

When a boom comes to an end, depressing and deflationary forces throw the price structure out of balance. This lack of balance acts further to retard investment. Is the remedy an extension of price flexibility to all parts of the economic system? Probably not, since this would involve a corresponding reduction in incomes and business activity. Indeed, the expectation that all prices will fall may accelerate the downswing, while the knowledge that some important prices are rigid may serve as a stabilizing influence.[92]

Lack of balance between costs and prices should probably be considered as affecting specific segments of investment at specific times rather than as affecting the level of investment generally. Any substantial price dispersion is probably the result of a decline of investment and is to be cured by an increase in investment.

SPECIAL FACTORS

The factors which stimulate or retard investment in specific industries are numerous. While none of them can be discussed here in any detail, it is worth while to sketch the more important of them.

[88] See the National Resources Committee's The Structure of the American Economy, which discusses three "basic factors which condition economic activity—changes in techniques of production, in available resources, and in consumer wants" (pp. 126–129).

[89] The possibility that the community may prefer to take part of the fruit of its progress in the form of increased leisure does not affect the argument made here.

[90] National Resources Committee, The Structure of the American Economy, pp. 129–152

[91] Cf. the discussion by Alvin H. Hansen, "Price Flexibility and the Full Employment of Resources," in National Resources Planning Board, The Structure of the American Economy, Part II: Toward Full Use of Resources, 1940, pp. 27–34.

[92] See J. R. Hicks, Value and Capital, New York, Oxford Press, 1939, p. 265.

Monopolies and restraints of competition clearly restrict production and limit investment.[93] It is obvious that this is the case where one business enterprise is the sole or the principal producer in the field, or where a small cluster of major enterprises constitutes or dominates the scene. Hearings before the Temporary National Economic Committee indicated that patent, license, and cross-license arrangements may have the same effect of restricting competition and investment.[94] In the glass industry, for example, all the basic patents are controlled by two companies, their subsidiaries, and their associates, either directly or through cross-licensing. There are numerous references in the hearings to the restriction of output and investment these conditions made possible, including buying up licenses and then closing down their plants, and refusing licenses to prospective producers.[95] Research in, and production of, beryllium were retarded several years because of an inability to obtain assurances by cross-license or promise of amicable working arrangements.[96] Monopoly restrictions in the optical glass industry were successfully prosecuted under the antitrust laws, and similar actions are pending in the aluminum, magnesium, and other industries.[97]

Unwieldy financial structure or faulty business organization may retard investment and expansion. There seems little doubt, for example, that a substantial amount of new investment in the railroad industry could be used. If the industry were not already encumbered by such a heavy burden of debt, additional capital could be obtained.[98] Recognition of this fact has led to proposals for a Government corporation to build and lease equipment to the railroads.[99] The residential construction industry, though undoubtedly subject to rigid if not monopoly prices for certain types of labor, materials, and furnishings, is organized to sell a product that has a limited rather than a broad market. Residential construction is handicapped by other factors besides concentration upon narrow markets; it is handicapped by inadequate standards and supervision of construction (a factor now partially remedied by the Federal Housing Administration); by unplanned, even irresponsible, real estate subdivisions that invite neighborhood deterioration; and by the delay and cumbersomeness of foreclosure and tax sale procedure. The last two elements in many cities have made it extremely difficult to acquire plots of any size in areas that were subdivided but only sparsely built upon before 1929, and that later become tax delinquent.

The character of the capital markets is an important factor affecting investment. The investment banking machinery was developed to serve large business enterprises. It has handled the refundings,

[93] In general, see Edward Chamberlin, The Theory of Monopolistic Competition, Cambridge, Harvard University Press, 1936, and Joan Robinson, Economics of Imperfect Competition, London, Macmillan, 1933.

[94] For a general discussion of the patent system, see Hearings before the Temporary National Economic Committee, Part 3.

[95] Hearings before the Temporary National Economic Committee, Part 2, pp. 377–677. The bill of complaint in the antitrust suit filed by the Department of Justice against the Hartford-Empire and other companies alleges that from 1925 through 1938 a large number of business enterprises that were ready and willing to invest in the glass bottle industry were refused licenses. The bill alleges many instances where competitors' plants were bought and closed down. See the complaint in *United States* v. *Hartford-Empire Co. et. al.*, civil action 4426, District Court for Northern District of Ohio, Western Division, December 11, 1939.

[96] Hearings before the Temporary National Economic Committee, Part 5, pp. 2011–2059.

[97] For a popular statement of the problem, see Thurman Arnold, The Bottlenecks of Business, New York, Reynal and Hitchcock, 1940.

[98] It is interesting to note that in some cases railroads going into bankruptcy, freed from the payment of bond interest, increase their investment outlays.

[99] Hearings before the Temporary National Economic Committee, Part 9, pp. 3547, 3854–3855.

transfer of ownership, reorganizations, and mergers of large enterprises, but it is not clear that it has supplied even large corporations with substantial amounts of "venture capital." Its services have not been rendered under that basic condition of competition that every buyer have access to every seller and vice versa.[1] It is doubtful whether the investment banking machinery can be reoriented to help supply capital to small business enterprises, and this has led to suggestions that investment trusts undertake the job and that a new set of regional credit banks be created.[2] Interest rates on mortgages have been reduced in recent years, in large part because of Government competition, but it is still doubtful whether business without Government intervention can handle home mortgages, farm mortgages, and consumer financing cheaply.

The most efficient allocation of productive resources demands that new investment be directed to those areas where the rates of return are highest. This is possible only when industries operate under competitive conditions, when anyone may enter the industry. In many industries requiring a large investment and characterized by a small number of large-scale producers, these conditions do not prevail. Capital has flowed out of the fixed plant in the automobile industry since 1926, despite high rates of return.[3] Oil pipe lines, owned by the major companies, earned in 1938 from 20 percent to 50 percent per year upon invested capital.[4] The small independent producers must ship through these pipe lines, since the capital required and the risk involved (for non vertically integrated companies) in building pipe lines are too great.[5] Thus the small companies must pay their large competitors a profit which one small producer characterized as analogous to the old Standard Oil rebates.[6] A large company can build its own line in these circumstances.[7] Furthermore, there are indications that proration of production in the oil industry has not only restricted output, but that it has discouraged investment by small producers relative to investment by the larger ones.[8] It appears, in addition, that it may diminish total investment relative to total output.[9]

In the preceding paragraphs some of the factors retarding investment in specific situations have been outlined. It is desirable briefly to note some stimulating factors. Subsidies, in one form or another, are stimulative elements. The tariff is the most general form of economic subsidy, and it is often implemented by administrative control and inspection devices. Silver and gold mining have received unusual subsidies since 1934. The increases in the Treasury price of silver increased United States production from 32.5 million fine ounces in 1934 to 71.3 million in 1937 and 63.9 million in 1939.[10]

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[1] See the case studies in Hearings before the Temporary National Economic Committee, Parts 22, 23, and 24.

[2] See "Adequate Long-Term and Short-Term Financing," by William Sanders, Harold Vatter, and Harold Wein, and by P. R. Nehemkis, Jr., in Temporary National Economic Committee Monograph No. 17, Some Problems of Small Business.

[3] See Federal Trade Commission, Report on the Automobile Industry, Washington, 1939, pp. 487, 618, and 671.

[4] Hearings before the Temporary National Economic Committee, Part 14–A, p. 7796.

[5] Hearings before the Temporary National Economic Committee, Part 15, pp. 8517 et seq.

[6] Hearings before the Temporary National Economic Committee, Part 14, p. 7338.

[7] When the Sun Oil Co. could not obtain freight rates from the railroads equivalent to what their costs would be with a pipe line of their own they built the line. Hearings before the Temporary National Economic Committee, Part 14, p. 7177.

[8] Hearings before the Temporary National Economic Committee, Part 14, pp. 7342–7343.

[9] Hearings before the Temporary National Economic Committee, Part 14, p. 7345.

[10] From an average price of 64.64 cents per fine ounce in 1934 to 71.11 cents in 1940. Production outside the United States showed smaller but yet substantial increases. Treasury Department, Bulletin of the Treasury Department, September 1940, p. 51.

The increase in the Treasury price of gold from $20.67 to $35 an ounce has greatly expanded domestic output, and, by making the United States the chief buyer of gold, it has supported exports of American commodities. Air transportation and aircraft manufacture are subsidized in many ways. Postal contracts in 1931–38 furnished a transportation subsidy estimated at $80,000,000.[11] Research, specialized weather reports, and directional and other beacons are furnished free or below cost.[12] In the past 14 years governments have invested $186,000,000 in airports and terminal facilities [13] and most of this was dictated by civilian rather than military needs. The grade crossing elimination program of the railroads cost governments $196,000,000 through September 30, 1937.[14] The merchant marine receives both construction and operating subsidies.[15]

Industry in the past decade has shown pronounced dynamic qualities, despite the complaints about the lack of "venture capital" and the continuance of a large volume of unemployment. New products have been introduced, and old products have tapped new markets. In 1926 the 205,000 refrigerators produced sold for an average price of $390; in 1937 the 2,310,000 refrigerators produced sold for an average price of $173. The output of washing machines increased by 74 percent in the same period, while prices were halved.[16] In the past decade the consumption of rayon yarn increased from 48.5 to 285.7 million pounds,[17] and the introduction of new and improved artificial fibers, such as nylon, is continuing at a rapid rate. Bus transportation, alcoholic beverages, and plastics have become important industries.

Many older industries have made substantial investments within the decade in response to changed sources of power, new processes, and technological developments. Improved processes for making kraft papers, and for manufacturing newsprint from rapidly growing softwoods are developing these industries in the South. The textile, rubber, carpet, and furniture manufacturing industries are expanding in the South. Wage and tax differentials, subsidies, and other commercial inducements, and the desire to weaken or escape from unionization are important factors in this movement. The steel industry has undergone a technological revolution. From 1924 through 1937, 27 continuous strip mills were installed at a cost of $500,000,000; and more than three-quarters of this 13,300,000 gross tons of new capacity was installed after 1930.[18] This new construction almost doubles the 15,000,000 ton capacity (as of 1929) of the old-style hand mills, which are consequently being rapidly dismantled.[19] Productivity in the automobile industry has increased steadily through a large number of technological changes, including the stamping of all-steel bodies; inspection by photo-electric cell; improved spraying with fast drying synthetic enamels; and automatic welding, milling, reaming, boring, and polishing machines.[20] Since the early twenties

[11] Excess of postal payments over revenues minus handling charges. See Federal Coordinator of Transportation, Public Aids to Transportation, Washington, D. C., 1940, 3 vols., vol. I, p. 147.
[12] Ibid., vol. I, p. 149.
[13] Ibid., vol. I, p. 162.
[14] Ibid., vol. II, p. 300.
[15] Ibid., vol. I, p. 41.
[16] Hearings before the Temporary National Economic Committee, Part 30, p. 17329.
[17] Ibid., exhibit 2632, p. 16886.
[18] Hearings before the Temporary National Economic Committee, Part 30, p. 16393, and exhibits Nos. 2460 and 2472.
[19] Ibid., pp. 16458, 16470–16471, 16510–16515. Other technological developments have come from improvements in open-hearth furnaces, cold wire drawing, scarfing, and continuous butt welding.
[20] Ibid., pp. 16359–16366.

the telephone industry has been changed from manual to dial phones; at the present time approximately 60 percent of the phones are dial; and during 1935–39, a total of 1,250,000 phones were converted to dial use.[21]

Finally, no discussion of technological change and its effect upon investment can omit agriculture. Agriculture alone of all the production segments of the United States had a post-depression rate of investment in machinery and equipment greater than its pre-depression rate. In 1929, a total of $613,000,000 was spent for equipment; in 1937, $697,000,000. The number of tractors on farms increased from 900,000 in 1930 to 1,600,000 in 1939.[22] This increase is symptomatic of the mechanization of other aspects of agriculture.[23] It is interesting to note that mechanization has taken place despite the reduction in acreage subsidized by the Agricultural Adjustment Administration and despite the fact that the labor supply on the American farms during the decade 1930–40 was the largest in the country's history.[24] And the end of mechanization in agriculture is not yet in sight. Indeed, the prospect of the wide adoption of a mechanical cotton picker hangs like the sword of Damocles over the labor force attached to cotton.

Factors Responsible for the Prosperity of the Twenties

Hansen and Currie pointed out that the prosperity of the twenties rested upon a large volume of investment, upon a large volume of offsets to saving.

Hansen indicated that five factors were responsible for the large volume of capital formation and of offsets to saving in the twenties.[25] First, residential building reached an all-time high in this decade. Residential construction "fed on an accumulated backlog of housing requirements caused by the virtual cessation of house building during the war. It fed, moreover, on the great growth of population in this decade," [26] and from the rapid urbanization of this rapidly growing population. Secondly, there was a large volume of public construction financed by heavy State and local borrowing. The volume of public construction, too, reflected the growth and urbanization of population, but in greatest measure it represented the development of the hard road network of the country. Thirdly, the United States for the first time (with the exception of the World War period) found an outlet for saving in foreign investments. The expansion of American enterprises abroad and the purchase of foreign securities provided foreign countries with purchasing power and enabled us to export more to them than we imported. Fourthly, there was a tremendous growth of consumer credit. This enabled American industry to tap new levels of consumer demand and helped finance the extraordinary growth of the automobile industry. Finally, "there was the prodigious growth of the great automobile industry, together with all the related industries, which it fostered and sustained, including rubber, oil, glass,

[21] Ibid., p. 16653.
[22] Hearings before the Temporary National Economic Committee, Part 30, p. 16947.
[23] Ibid., pp. 16941–16946.
[24] It is possible that, in part, this mechanization may be explained by (1) a transfer of land ownership during the depression and (2) a realization by farmers that it is possible to earn a higher income by investing capital in machinery and equipment and applying these to rented land rather than by investing part of this capital in land and farming fewer acres. Cf. J. W. Schultz, "Capital Rationing, Uncertainty, and Farm Tenancy," Journal of Political Economy, June 1940.
[25] Hearings before the Temporary National Economic Committee, Part 9, pp. 3512–3513.
[26] Hearings before the Temporary National Economic Committee, Part 9, p. 3512.

steel, road equipment machinery, cement, and other materials entering into the construction of the wholly new network of hard-surfaced roads." [27]

Hansen explained that these five factors provided the main props to the prosperity of the twenties. Their income creating force was, in large part, spent by 1929.[28] Currie noted that the income-creating force of these five factors may have been weakened earlier. He noted that from 1923 to 1928 consumption was apparently increasing relative to national income. It was suggested that the rising stock market created capital gains which increased the willingness of individuals to spend larger shares of their income for consumption, and hence made "it possible for a more or less stable volume of capital expenditures to support a rising national income." [29]

Was the large volume of investment during the twenties abnormal? Did the country enjoy high levels of national income before 1920 with relatively lower levels of investment? May it be possible in the forties to support a level of national income high enough to eliminate unemployment with relatively lower levels of investment than prevailed during the twenties? These questions are of basic significance for the functioning of the American economy.

The data for the period preceding 1920 are much less complete than for the post-war period. It is impossible to say whether the volume of savings (and investment) relative to national income at full employment was lower before the World War than in the twenties.[30] The absolute volume of saving in the twenties was, however, higher than before the World War. The increase in prices and production and the full utilization of resources during and immediately following the war, radically modified the level of national income, the level of individual incomes, and perhaps to some degree the distribution of individual incomes. These combined to increase the dollar volume of savings, which in turn required an increased volume of investment for the achievement of full employment. Fortunately, increased outlets for investment were available.[31]

There is no indication that the structure of incomes and the patterns of consumption in the United States will bring forth smaller volumes of savings at given levels of national income in the forties than in the twenties.[32] If this is so, prosperity in the forties, as in the past two decades, will depend upon a large volume of investment to offset a large volume of savings. For the moment the national defense program is providing a large and increasing volume of offsets to savings. The United States will face grave questions when the armament boom is over: Are we prepared to preserve a high level of income and employment while shifting from an armament to a peace economy? And how much public investment will be required to supplement private investment to achieve this end?

The steady and unspectacular stream of improvements tends to reduce the amount of gross investment required to maintain output.

[27] Hearings before the Temporary National Economic Committee, Part 9, p. 3513.
[28] Ibid.
[29] Ibid., p. 3537.
[30] The pre-war volume of investment, whatever its proportion to national income, was not, however, financed solely with American savings. The importation of capital bridged the gap between domestic investment and domestic savings.
[31] Without the growth of consumer credit and the inducement to increase consumption relative to income offered by the stock market in the later twenties, the volume of capital formation required for full employment would have been substantially greater.
[32] Supra, pp. 17–18.

Hence unless great new industries appear, industries that make investments in large amounts possible, the road to full employment is the prosaic one of reducing prices, increasing output, and increasing the proportion of income that is consumed. This is a difficult and unexciting road, because restrictive practices prevent adequate expansion of output, while they tend to divert income to those who save instead of consume.

PART V

CONCLUSION

The United States has a dynamic economy, an adaptable industry, a highly developed social and business organization, and a skilled and industrious population. These advantages, helped by a high degree of occupational and regional specialization, and applied to a magnificent endowment of natural resources, have resulted in the highest standard of living in the world. That standard of living is not measured merely in material things: in goods and in services. That standard of living has meant opportunity, liberty, mobility, and personal assurance. That standard of living has brought change and progress, and has fostered a dynamic character and an optimistic outlook.

We must preserve and extend these achievements. But we can do this only by seeing that our economic system operates efficiently. Our economic system can operate as efficiently as our dynamos and our steel mills. Our economic system can operate at full employment, it can produce a high level of national income with enough goods and services for all. It can do these things without transforming an unemployed worker into a soldier and without trading a breath-taking dam for a series of tank traps organized in depth.

The question is, How? How can a democracy achieve a high standard of living? How can a democracy secure that sustained high level of output and income that mean personal opportunity and security?

The prosperity of the United States has always, except in periods of war, been based upon a large volume of investment and a large volume of saving. The concentration of individual incomes, the concentration of wealth, the character of tax structure, the desire for business self-sufficiency, and the institutional, automatic character of many of our savings processes—these elements have combined to produce a high-savings economy. Even at low levels the people would attempt to save; but they would not succeed in saving very much. If the national income fell low enough the country would be unable to save anything. As the pressure of depression and unemployment decreases, as the level of national income increases, the volume of saving increases. But the volume of saving increases faster than the national income, being a larger proportion of the national income at high levels than at low.

The problem of our economy, to put idle men and machines to work, and to keep them at work, demands continuity of the income stream. All incomes must be spent for consumption or for investment. If incomes are not spent, the economic machine begins to falter; if they are spent, the economy continues on an even keel.

Investment is but one type of spending. Investment is spending for capital goods: for roads, machines, buildings, and equipment.

Unless we are prepared to modify the rate of saving at high levels of national income, we must be prepared to invest the volume of savings that will be created at these levels. If the American people at reasonably full employment will, for example, save $25,000,000,000 per year, they must be prepared to find investments or other offsets for $25,000,000,000 each year, every year, to stay at that level. If offsets are not found, the savings themselves will be lost, national income will decrease, and production and employment will fall off. Savings that are hoarded and not invested or otherwise offset run to waste. In the process billions of precious irreplaceable man-hours of labor are lost, while millions of people cannot get the homes, the food, and the good things of life they could so easily produce.

Savings move toward investment directly and indirectly. A large part of business savings is invested directly, without going through the capital markets. A substantial part of Government savings comes from current receipts, is invested directly, and hence does not move through the capital markets. A large part of individual savings, however, flows through savings institutions and capital markets, which concentrate control over them.

This concentration has made possible the increasing liquidity of savings institutions and the uneven flow of savings into different sectors of the economy. Legal and customary investment standards require savings institutions to invest in other people's debts. Unfortunately, during the past decade no one except the Federal Government has been willing to go into debt. As a result, savings institutions have had difficulty in finding outlets for their funds. The outlet for funds might be broadened by permitting them to invest directly in homes, hospitals, and factories; and by permitting or encouraging them to buy equity securities.

Government bonds have provided substantial outlets for institutional and individual savings in the past decade. If the volume of saving continues undiminished, if others continue to show a reluctance to go into debt, if the investment policy of institutions continues unchanged, the present pressure toward the increase of Government debt appears inevitable.

Investment is the best offset to saving. In addition to helping maintain the level of income and employment, it adds to the country's productive capacity. A high rate of saving and investment facilitates the rapid introduction of new products and new methods.

It is essential to distinguish between investment as an offset to savings—as a community device for keeping men and machines at work—and investment as a way of distributing the national income in the future.

The usefulness of investments does not always depend upon whether they do or do not yield an income. Factories, railroads, and other business enterprises may be operated even though they are in bankruptcy or reorganization. The future output of goods and services is not necessarily affected by failure of investments to pay out—though the future distribution of income is. It is necessary to distinguish between industry and business, between making goods and making money.

Investments, regardless of their profitability, may be of varying social desirability. We probably need investment in hospitals more urgently than we need investment in factories to manufacture spun

glass shoes. But investment is not related to need. Investment is generally related to prospects of profit, though the relationship is rough, inexact, and disturbed by gusts of optimism and pessimism. Private enterprise cannot and will not provide the things that are needed unless the people are able and willing to buy them at a price yielding a profit to the producer. There is no reason to assume that the distribution of income and consequently the structure of consuming and saving habits—the determinants of demand—are closely related to the needs of the population. A change in the distribution of income would change demand and the relative profitability of different lines of enterprise.

Monopoly and concentration play important roles in determining the volume of investment. The development of new areas, products, industries, and skills brings profits to some but losses to others. If there are competitive conditions and no great concentrations of power and income, the profits act as an incentive while the losses do not act as a brake, since the profits go to one group while the losses accrue to another. If monopoly and concentration are present the situation is different. The prospect of losses to old investments acts as a brake to new investments in the same or competing fields. Monopoly, concentration, and even wide-spread holdings, create vested interests that impede investment in new fields. At the same time they lead to restriction of output and limitation of investment in existing fields.

A large volume of savings is not always better than a small volume. The choice depends upon whether large investment outlets are available. If adequate investment outlets are not available, the country will be better off if more income is spent for consumption and if the volume of savings is reduced, than if savings were attempted, hoarded, and finally wasted. The increasing number of older people, the growing amount of annuity incomes paid under life insurance contracts, and old-age and other income payments under social security legislation may in the future involve a substantial amount of dis-saving, and possibly a reduction in the volume of savings.

Saving and investment should not be ends in themselves. After a nation has accumulated a certain amount of capital goods, it may prefer to devote relatively more effort to consumption. If adequate investment outlets for our potential volume of savings cannot be found, it may be necessary to encourage higher levels of consumption. This encouragement may be temporary or it may be permanent, depending upon the emergence of new and vigorous growth factors inducing large amounts of investment.

APPENDIXES

APPENDIX I.—*Components of savings, 1925–29 and 1935–39*

[Millions of dollars]

Year	Gross savings [1]	Business enterprises				Government		Individuals and others	
		Net savings by business enterprises [2]	Depreciation and depletion [3]	Gross savings by business enterprises	Percent of total	Government savings [4]	Percent of total	Individuals and other [5]	Percent of total
1925	19,211	2,851	3,976	6,827	35.5	1,613	8.4	10,771	56.1
1926	19,037	2,223	4,551	6,774	35.6	1,894	9.9	10,369	54.5
1927	18,208	996	4,487	5,483	30.1	2,027	11.1	10,698	58.8
1928	17,824	2,830	4,799	7,629	42.8	1,766	9.9	8,429	47.3
1929	20,298	2,274	5,145	7,419	36.5	1,762	8.7	11,117	54.8
1935	9,355	−26	4,291	4,265	45.6	−1,107	−11.8	6,197	66.2
1936	13,817	1,014	4,414	5,428	39.3	−1,293	−9.4	9,682	70.1
1937	17,497	910	4,609	5,519	31.5	1,647	9.4	10,331	59.0
1938	12,744	−1,397	[6] 4,350	2,953	23.2	981	7.7	8,810	69.1
1939	[6] 15,600	778	[6] 4,550	5,328	34.2	127	.8	10,145	65.0

[1] Gross capital formation, as estimated by Simon Kuznets in National Income and Capital Formation, 1919–35, New York, National Bureau of Economic Research, 1937, p. 40, and Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932–38, Bull. 74, New York, National Bureau of Economic Research, 1939.

[2] Estimates by the National Income Division of the Department of Commerce. Data for 1929–39 from Survey of Current Business, June 1940. Data for 1925–28 are unpublished. No estimates of savings by different components have been made for 1930–34, since business savings for these years reflect large revaluations which cannot be corrected for.

[3] Solomon Fabricant, Capital Consumption and Adjustment, New York, National Bureau of Economic Research, 1938, pp. 32, 33, 38. Estimates for 1936 and 1937 are preliminary and are used with permission of Dr. Fabricant and the National Bureau.

[4] The computations of gross savings by governments are given in appendix II.

[5] Gross savings minus business and governmental savings. Not estimated for 1930–34; see note 2. Other estimates of individual savings are not precisely comparable with this one. For purposes of convenience, however, several other estimates may be summarized:

The estimate by Maurice Levin, H. G. Moulton, and Clark Warburton, America's Capacity to Consume, Washington, Brookings Institution, 1934, was 17.8 billion dollars for 1929. Excluding 6.2 billion dollars of capital gains, their estimate is 11.6 billion dollars (pp. 96, 260, 261, 265).

The estimate by the National Resources Committee was 6 billion dollars in 1935–36. Consumer Expenditures in the United States, Washington, 1939, p. 51.

The estimates by W. H. Lough were (in billions): 1925, $10.6; 1926, $10.6; 1927, $10.4; 1928, $8.5; 1929, $9.3. High Level Consumption, New York, McGraw Hill, 1935, p. 306. Lough's method would tend to eliminate capital gains.

The estimates by Clark Warburton were (in billions): 1925, $9.7; 1926, $11; 1927, $11.2; 1928, $10.9; 1929, $11.6. "The Trend of Savings," Journal of Political Economy, vol. 43, 1935, p. 84.

The estimates of R. W. Goldsmith with the assistance of Walter Salant, converted to a gross savings basis, excluding consumers' durable goods except houses, were (in billions): 1935, $2.4; 1936, $7.8; 1937, $5.

[6] Estimated.

APPENDIX II.—*Composition of gross saving by governments, 1921–39*

[Millions of dollars]

Year	Cash receipts minus cash expenditures [1]			Public construction [2]			Gross savings by government		
	Federal	State and local	Total	Federal	State and local	Total	Federal	State and local	Total
1921	250	−898	−648	397	1,356	1,753	647	458	1,105
1922	54	−802	−748	306	1,480	1,786	360	678	1,038
1923	301	−649	−348	223	1,422	1,645	524	773	1,297
1924	319	−934	−615	231	1,673	1,904	550	739	1,289
1925	295	−824	−529	217	1,925	2,142	512	1,101	1,613
1926	509	−753	−244	193	1,945	2,138	702	1,192	1,894
1927	459	−827	−368	196	2,199	2,395	655	1,372	2,027
1928	78	−811	−733	232	2,267	2,499	310	1,456	1,766
1929	235	−931	−696	271	2,187	2,458	506	1,256	1,762
1930	−386	−1,116	−1,502	357	2,470	2,827	−29	1,354	1,325
1931	−2,419	−1,365	−3,784	460	2,155	2,615	−1,959	790	−1,169
1932	−1,880	−724	−2,604	499	1,382	1,881	−1,381	658	−723
1933	−1,928	811	−1,117	606	740	1,346	−1,322	1,551	229
1934	−3,428	1,157	−2,271	978	826	1,804	−2,450	1,983	−467
1935	−3,730	771	−2,959	1,106	746	1,851	−2,624	1,517	−1,107
1936	−4,337	373	−3,964	1,858	813	2,671	−2,479	1,186	−1,293
1937	−1,092	215	−877	1,632	892	2,524	540	1,107	1,647
1938	−2,377	455	−1,922	1,883	1,020	2,903	−494	1,475	981
1939	−3,651	78	−3,573	2,300	1,400	3,700	−1,351	1,478	127

[1] The net governmental contribution to or subtraction from purchasing power. "This series attempts to measure the difference between the outlays of public bodies that add to the community's disposable cash income and the receipts that represent drafts upon disposable cash income." Hearings before the Temporary National Economic Committee, pt. 9, p. 4017. Data from p. 4011, corrected and brought up to date by later material.

[2] Hearings before the Temporary National Economic Committee, pt. 9, p. 4140, brought up to date with Bureau of Foreign and Domestic Commerce, Survey of Current Business, June 1940. Does not include outlays for machinery and equipment, which represent a use of savings. Includes the equivalent of that part of relief outlays estimated to result in construction.

APPENDIX III.—*Number of fiduciary returns and undistributed compiled income of fiduciaries, by balance income classes, 1937*

Balance income class [1]	Number of returns	Undistributed compiled income (in thousands of dollars) [2]
Over $1,000,000	29	2,327
$500,000 to $1,000,000	74	5,161
$250,000 to $500,000	191	17,059
$100,000 to $250,000	938	33,196
$50,000 to $100,000	2,172	37,160
$25,000 to $50,000	5,382	47,906
$20,000 to $25,000	2,899	15,581
$10,000 to $20,000	14,096	44,293
$5,000 to $10,000	23,980	36,885
$1,000 to $5,000	87,040	42,213
Under $1,000	33,745	6,043
Total	170,546	287,826
Fiduciary returns filed on Form 1040 [3]	12,247	63,982
Returns with zero balance income	180	
Total, all fiduciary returns	182,973	351,808

[1] Statutory net income (statutory gross income minus statutory deductions) before distribution to beneficiaries.

[2] Statutory gross income plus tax-exempt income minus statutory deductions and distributions to beneficiaries.

[3] Fiduciary returns filed on Form 1040 were not classified into balance income classes because they combined distributions to beneficiaries with statutory deductions.

Source: Compiled from Bureau of Internal Revenue, Statistics of Income, 1937, pt. 1, tables 12, 13, and 15. Tax-exempt income for balance deficit trusts and for all trusts of balance incomes of $5,000 and under has been estimated at $20,000,000.

APPENDIX IV.—*Cumulative percentage distribution of undistributed compiled income of all fiduciaries filing tax returns on Form 1041, by balance income classes, 1937*

Balance income [1]	Cumulative percentage of total number of returns	Cumulative percentage of total undistributed compiled income [2]
More than $1,000,000	0.01	0.81
More than $500,000	.05	2.60
More than $250,000	.16	8.53
More than $100,000	.71	20.06
More than $50,000	1.98	32.97
More than $25,000	5.14	49.61
More than $20,000	6.84	55.02
More than $10,000	15.11	70.41
More than $5,000	29.17	83.22
More than $1,000	80.21	97.89
All trusts [3]	100.00	100.00
Total number of trusts	170,546	
Total undistributed compiled income		$287,826,000

[1] Statutory net income (statutory gross income minus statutory deductions) before distribution to beneficiaries.

[2] Statutory gross income plus tax-exempt income minus statutory deductions and distributions to beneficiaries.

[3] Excluding the 12,247 returns filed on Form 1040 which had an undistributed compiled income of $63,982,000. Such returns were not classified into balance income classes because they combined distributions to beneficiaries with statutory deductions.

Source: Compiled from Bureau of Internal Revenue, Statistics of Income, 1937, pt. 1, tables 12, 13, and 15. Tax-exempt income for balance deficit trusts and for all trusts with balance incomes of $5,000 and under has been estimated at $20,000,000.

APPENDIX V.—*Gross savings by all, net income, and no net income nonfinancial corporations, 1923–37*

[Millions of dollars]

Year	All nonfinancial corporations					Nonfinancial corporations with net income					Nonfinancial corporations with no net income				
	Undistributed profits [1]	Depreciation and depletion			Gross savings [2]	Undistributed profits [1]	Depreciation and depletion			Gross savings [2]	Undistributed profits [1]	Depreciation and depletion			Gross savings [2]
		Depreciation	Depletion	Total			Depreciation	Depletion	Total			Depreciation	Depletion	Total	
1923	2,282	2,969		2,969	5,251	3,991	2,194		2,194	6,185	−1,709	775		775	−934
1924	1,208	3,004		3,004	4,212	3,086	2,238		2,238	5,324	−1,876	766		766	−1,110
1925	2,244	2,669	460	3,129	5,373	3,886	2,220	366	2,586	6,472	−1,641	447	94	541	−1,100
1926	1,855	3,025	564	3,589	5,444	3,635	2,489	459	2,948	6,583	−1,780	536	104	640	−1,140
1927	496	3,110	497	3,607	4,103	2,692	2,334	296	2,630	5,322	−2,198	776	200	976	−1,222
1928	1,548	3,319	507	3,826	5,374	3,548	2,667	396	3,063	6,611	−2,000	652	112	764	−1,236
1929	1,759	3,564	553	4,117	5,876	3,823	2,936	463	3,399	7,222	−2,065	628	90	718	−1,347
1930	−3,466	3,650	459	4,109	643	379	2,437	241	2,678	3,057	−3,846	1,212	217	1,429	−2,417
1931	−5,546	3,652	265	3,917	−1,629	144	1,613	77	1,690	1,834	−5,689	2,039	188	2,227	−3,462
1932	−6,096	3,393	245	3,638	−2,458	−71	1,143	83	1,226	1,155	−6,025	2,250	162	2,412	−3,613
1933	−2,799	3,205	244	3,449	650	582	1,492	84	1,576	2,158	−3,380	1,713	161	1,874	−1,506
1934	−1,855	3,040	309	3,349	1,494	648	1,647	151	1,798	2,446	−2,503	1,393	158	1,551	−952
1935	−1,405	3,034	346	3,380	1,975	910	1,821	178	1,999	2,909	−2,316	1,212	169	1,381	−935
1936	−710	3,014	434	3,448	2,738	777	2,217	330	2,545	3,324	−1,487	797	103	900	−587
1937	−762	3,078	521	3,599	2,837	827	2,323	412	2,735	3,562	−1,589	756	109	865	−724

[1] Compiled net profit, minus cash dividends paid and income and excess-profits taxes.
[2] Undistributed profits plus depreciation and depletion.

Source: Statistics of Income. The privilege of filing consolidated returns was sharply restricted in 1934, so that later figures are not precisely comparable with earlier ones.

APPENDIX VI.—*Distribution by asset groups of gross savings [1] by all nonfinancial corporations, 1931–37*

[Savings in millions of dollars]

Asset group [2]	1931		1932		1933		1934		1935		1936		1937	
	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings
Over $100,000,000 [3]											201	635	210	871
$50,000,000 to $100,000,000	398	−17	386	−154	375	577	414	737	398	835	204	253	208	258
$10,000,000 to $50,000,000	1,133	−141	1,069	−293	1,068	163	1,324	264	1,284	356	1,258	566	1,258	640
$5,000,000 to $10,000,000	1,237	−88	1,285	−142	1,253	88	1,517	128	1,495	157	1,478	265	1,437	231
$1,000,000 to $5,000,000	8,892	−326	8,609	−418	8,321	135	9,898	252	9,938	374	10,208	509	10,131	509
$500,000 to $1,000,000	10,037	−161	9,503	−216	9,117	55	10,214	84	10,397	106	11,063	169	10,923	154
$250,000 to $500,000	17,250	−164	16,259	−216	15,516	17	16,628	78	16,895	118	18,540	131	18,693	127
$100,000 to $250,000	39,999	−210	37,550	−277	36,023	−14	37,686	66	38,534	96	41,250	115	41,492	106
$50,000 to $100,000	43,943	−128	41,639	−203	39,787	−35	41,523	17	42,602	32	45,032	40	45,242	40
Under $50,000	150,307	−278	171,670	−412	176,115	−211	185,887	−140	189,516	−79	189,551	−43	188,870	−66
All filing balance sheets	273,196	−1,516	287,970	−2,329	287,575	775	305,091	1,485	311,059	1,993	318,785	2,640	318,464	2,869
All filing tax returns	325,141	−1,629	326,764	−2,457	325,159	650	343,708	1,494	352,180	1,975	363,163	2,738	360,759	2,837

[1] Compiled net profits, minus income and excess profits taxes and cash dividends paid, plus depreciation and depletion.
[2] The asset groups used in this table are those used in Statistics of Income.
[3] Available only since 1936.

Source: Compiled from Statistics of Income, supplemented by Source Book. The privilege of filing consolidated returns was sharply restricted in 1934, so that later figures are not precisely comparable with earlier ones.

APPENDIX VII.—*Distribution by asset groups of gross savings [1] by all nonfinancial corporations reporting a net income, 1931–37*

[Savings in millions of dollars]

Asset group [2]	1931		1932		1933		1934		1935		1936		1937	
	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings
Over $100,000,000 [3]											147	687	164	1,025
$50,000,000 to $100,000,000	185	662	151	464	163	706	228	754	235	985	153	265	157	278
$10,000,000 to $50,000,000	497	280	356	177	500	342	742	355	800	394	934	593	970	654
$5,000,000 to $10,000,000	470	96	385	77	540	174	776	211	855	194	1,033	272	1,003	251
$1,000,000 to $5,000,000	3,156	227	2,201	153	3,448	370	4,888	410	5,531	498	6,704	577	6,652	573
$500,000 to $1,000,000	3,578	104	2,332	71	3,751	158	5,068	178	5,711	197	7,038	212	6,791	201
$250,000 to $500,000	6,318	107	3,807	64	6,195	137	8,189	167	9,296	184	11,626	170	11,405	172
$100,000 to $250,000	14,855	125	7,715	62	13,261	131	17,614	177	20,186	189	25,198	172	24,469	169
$50,000 to $100,000	16,221	78	7,935	30	13,477	62	18,388	86	20,770	91	25,462	87	24,043	86
Under $50,000	50,930	91	25,744	34	40,276	64	54,983	54	60,049	97	70,704	99	63,786	92
All filing balance sheets	96,210	1,770	50,626	1,132	81,611	2,144	110,876	2,392	123,433	2,829	148,999	3,134	139,440	3,501
All filing tax returns	116,769	1,834	56,251	1,155	87,417	2,158	117,844	2,445	131,000	2,910	159,295	3,324	148,447	3,562

[1] Compiled net profits, minus income and excess-profits taxes and cash dividends paid, plus depreciation and depletion.
[2] The asset groups used in this table are those used in Statistics of Income.
[3] Available only since 1936.

Source: Compiled from Statistics of Income, supplemented by Source Book. The privilege of filing consolidated returns was sharply restricted in 1934, so that later figures are not precisely comparable with earlier ones.

APPENDIX VIII.—*Distribution by asset groups of gross savings [1] by all non-financial corporations reporting no net income, 1931–37*

[Savings in millions of dollars]

Asset group [2]	1931		1932		1933		1934		1935		1936		1937	
	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings
Over $100,000,000 [3]											54	−52	46	−153
$50,000,000 to $100,000,000	213	−679	235	−618	212	−129	186	−17	163	−150	51	−13	51	−20
$10,000,000 to $50,000,000	636	−424	713	−470	568	−179	582	−91	484	−38	324	−27	288	−14
$5,000,000 to $10,000,000	767	−184	900	−219	713	−86	741	−83	640	−37	445	−7	434	−20
$1,000,000 to $5,000,000	5,736	−553	6,408	−571	4,873	−235	5,010	−158	4,407	−124	3,504	−67	3,479	−64
$500,000 to $1,000,000	6,459	−265	7,171	−287	5,366	−103	5,146	−94	4,686	−91	4,025	−43	4,132	−48
$250,000 to $500,000	10,932	−271	12,452	−280	9,321	−120	8,439	−89	7,599	−66	6,914	−39	7,288	−44
$100,000 to $250,000	25,144	−335	29,835	−339	22,762	−145	20,072	−111	18,348	−93	16,052	−57	17,023	−63
$50,000 to $100,000	27,722	−206	33,704	−233	26,310	−97	23,135	−69	21,832	−59	19,570	−47	21,199	−46
Under $50,000	99,377	−369	145,926	−446	135,839	−275	130,904	−194	129,467	−176	118,847	−142	125,084	−157
All filing balance sheets	176,986	−3,286	237,344	−3,461	205,964	−1,370	194,215	−906	187,626	−834	169,786	−494	179,024	−629
All filing tax returns	208,372	−3,462	270,513	−3,613	237,742	−1,507	225,864	−951	221,180	−935	203,868	−586	212,312	−724

[1] Compiled net profits, minus income and excess profits taxes and cash dividends paid, plus depreciation and depletion.
[2] The asset groups used in this table are those used in Statistics of Income.
[3] Available only since 1936.

Source: Compiled from Statistics of Income, supplemented by Source Book. The privilege of filing consolidated returns was sharply restricted in 1934, so that later figures are not precisely comparable with earlier ones.

APPENDIX IX.—*Distribution by asset groups of gross savings [1] by all corporations, 1931–37*

[Savings in millions of dollars]

Asset group [2]	1931		1932		1933		1934		1935		1936		1937	
	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings
Over $100,000,000 [3]											396	899	394	1,101
$50,000,000 to $100,000,000	632	−206	618	−323	594	511	761	1,009	742	1,489	355	266	355	243
$10,000,000 to $50,000,000	2,117	−376	1,947	−572	1,885	−179	2,411	228	2,393	428	2,311	567	2,281	679
$5,000,000 to $10,000,000	2,588	−276	2,442	−350	2,344	−106	2,844	51	2,769	132	2,719	268	2,620	235
$1,000,000 to $5,000,000	18,345	−654	16,705	−752	15,840	−172	18,499	100	18,407	281	18,277	525	17,897	480
$500,000 to $1,000,000	19,335	−252	17,590	−339	16,592	−38	18,339	20	18,102	93	17,941	162	17,587	143
$250,000 to $500,000	31,052	−231	28,422	−307	26,773	−56	28,673	33	28,605	105	28,342	122	27,992	117
$100,000 to $250,000	63,428	−278	59,500	−378	56,745	−86	58,186	19	58,208	77	58,442	102	58,817	87
$50,000 to $100,000	61,144	−160	58,320	−248	56,205	−57	57,840	−4	58,434	15	59,528	31	60,238	28
Under $50,000	182,447	−349	206,477	−513	211,586	−294	223,073	−226	227,545	−125	227,343	−81	228,721	−106
All filing balance sheets	381,088	−2,782	392,021	−3,782	388,564	−481	410,626	1,231	415,205	2,495	415,654	2,860	416,902	3,007
All filing tax returns	459,704	−3,056	451,884	−4,060	446,842	−738	469,804	1,164	477,113	2,448	478,857	2,924	477,838	2,906

[1] Compiled net profits, minus income and excess-profits taxes and cash dividends paid, plus depreciation and depletion.
[2] The asset groups used in this table are those used in Statistics of Income.
[3] Available only since 1936.

Source: Compiled from Statistics of Income. The privilege of filing consolidated tax returns was sharply restricted in 1934, so that later years are not precisely comparable with earlier ones.

APPENDIX X.—*Distribution by asset groups of gross savings* [1] *by all corporations reporting a net income, 1931–37*

[Savings in millions of dollars]

Asset group [2]	1931		1932		1933		1934		1935		1936		1937	
	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings
Over $100,000,000 [3]											293	912	291	1,207
$50,000,000 to $100,000,000	265	811	201	583	200	773	305	936	328	1,252	268	313	265	324
$10,000,000 to $50,000,000	841	341	535	215	654	386	1,021	436	1,156	520	1,617	726	1,621	786
$5,000,000 to $10,000,000	926	125	625	95	742	192	1,100	237	1,241	236	1,833	326	1,763	296
$1,000,000 to $5,000,000	6,403	297	3,775	189	4,676	406	6,856	462	8,232	569	11,835	691	11,575	653
$500,000 to $1,000,000	7,130	136	3,963	83	5,082	175	6,986	196	8,255	223	11,260	245	10,781	226
$250,000 to $500,000	12,120	138	6,344	75	8,241	150	10,879	181	13,058	209	16,937	192	16,576	190
$100,000 to $250,000	25,649	157	12,610	72	17,256	144	22,484	189	26,138	209	32,519	190	31,661	185
$50,000 to $100,000	24,297	91	11,726	34	16,693	68	21,969	94	24,953	100	30,275	94	29,092	93
Under $50,000	65,564	103	33,512	38	47,397	68	63,364	51	69,714	104	81,716	104	75,310	95
All filing balance sheets	143,195	2,199	73,291	1,385	100,941	2,362	134,964	2,782	153,075	3,421	188,553	3,793	178,935	4,055
All filing tax returns	175,898	2,305	82,646	1,425	109,786	2,398	145,101	2,837	164,231	3,553	203,161	4,030	192,028	4,119

[1] Compiled net profits, minus income and excess profits taxes and cash dividends paid, plus depreciation and depletion.
[2] The asset groups used in this table are those used in Statistics of Income.
[3] Available only since 1936.

Source: Compiled from Statistics of Income. The privilege of filing consolidated tax returns was sharply restricted in 1934, so that later years are not precisely comparable with earlier ones.

APPENDIX XI.—*Distribution by asset groups of gross savings* [1] *by all corporations reporting no net income, 1931–37*

[Savings in millions of dollars]

Asset group [2] (in dollars)	1931		1932		1933		1934		1935		1936		1937	
	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings	Number of corporations	Gross savings
Over $100,000,000 [3]											103	−13	103	−105
$50,000,000 to $100,000,000	367	−1,017	417	−906	394	−262	456	73	414	237	87	−48	90	−81
$10,000,000 to $50,000,000	1,276	−717	1,412	−787	1,231	−565	1,390	−208	1,237	−92	694	−159	660	−107
$5,000,000 to $10,000,000	1,662	−401	1,817	−445	1,602	−298	1,744	−186	1,528	−104	886	−58	857	−61
$1,000,000 to $5,000,000	11,942	−951	12,930	−941	11,164	−578	11,643	−362	10,175	−288	6,442	−166	6,322	−173
$500,000 to $1,000,000	12,205	−388	13,627	−422	11,510	−213	11,353	−176	9,847	−130	6,681	−83	6,806	−84
$250,000 to $500,000	18,932	−369	22,078	−382	18,532	−206	17,794	−148	15,547	−104	11,405	−70	11,416	−72
$100,000 to $250,000	37,779	−435	46,890	−450	39,489	−230	35,702	−170	32,070	−132	25,923	−88	27,156	−98
$50,000 to $100,000	36,847	−251	46,594	−282	39,512	−125	35,871	−98	33,481	−85	29,253	−63	31,146	−65
Under $50,000	116,883	−452	172,965	−551	164,189	−362	159,709	−277	157,831	−229	145,627	−185	153,411	−200
All filing balance sheets	237,893	−4,980	318,730	−5,166	287,623	−2,838	275,662	−1,551	262,130	−927	227,101	−933	237,967	−1,046
All filing tax returns	283,806	−5,361	369,238	−5,485	337,056	−3,136	321,703	−1,673	312,882	−1,105	275,696	−1,106	285,810	−1,213

[1] Compiled net profits, minus income and excess-profits taxes and cash dividends paid, plus depreciation and depletion.
[2] The asset groups used in this table are those used in Statistics of Income.
[3] Available only since 1936.

Source: Compiled from Statistics of Income. The privilege of filing consolidated tax returns was sharply restricted in 1934, so that later years are not precisely comparable with earlier ones.

29114—41—No. 27—9

APPENDIX XII.—*Assets or funds in the principal savings institutions in the United States, 1922–39*

[Amount in millions of dollars]

Year (as of June 30)	Life insurance assets less policy loans [1] (1)	Time deposits in commercial banks [2] (2)	Mutual savings banks assets (3)	Building and loan association assets (4)	Governmental pension and trust funds (5)	Postal savings deposits (6)	United States savings ("baby") bonds (7)	Total
1922	7,600	11,717	6,352	3,343	444	138	.....	29,594
1923	8,350	13,391	6,905	3,943	559	132	.....	33,280
1924	9,103	14,399	7,365	4,766	679	133	.....	36,445
1925	10,131	15,884	7,913	5,509	830	132	.....	40,399
1926	11,355	17,070	8,422	6,334	993	134	.....	44,308
1927	12,646	17,936	9,011	7,156	1,174	147	.....	48,070
1928	13,987	19,626	9,688	8,016	1,420	152	.....	52,889
1929	15,321	19,187	10,006	8,695	1,675	154	.....	55,038
1930	16,465	19,125	10,295	8,824	1,929	175	.....	56,813
1931	17,347	17,880	11,192	8,412	2,179	347	.....	57,357
1932	17,572	13,559	11,134	7,745	2,418	785	.....	53,213
1933	17,771	10,389	10,967	6,972	2,671	1,187	.....	49,957
1934	18,503	11,255	11,065	6,445	2,918	1,198	.....	51,384
1935	19,813	12,357	11,173	5,884	3,208	1,205	62	53,702
1936	21,502	13,250	11,409	5,620	3,574	1,232	316	56,903
1937	23,313	14,193	11,645	5,706	5,025	1,268	794	61,944
1938	24,607	14,360	11,572	5,621	6,169	1,252	1,215	64,796
1939	26,296	14,628	11,799	5,667	7,400	1,262	1,821	68,873

[1] Admitted value basis; includes fraternal insurance. These figures are published for 306 life insurance companies and for fraternal orders in the Spectator Life Insurance Yearbooks as of December 31 of each year. June 30 figures were estimated by using the percentages of the total life insurance assets which were held by the 49 companies reported on a monthly basis by the Association of Life Insurance Presidents, and published in the Bureau of Foreign and Domestic Commerce, Survey of Current Business.

[2] Excludes postal savings deposits.

Source: Adapted from Hearings before the Temporary National Economic Committee, Part 9, p. 4052. Column 1 is from the Spectator Insurance Yearbooks, Life Volume; columns 2, 3, 4, and 6, from the Bureau of the Census, Statistical Abstract of the United States; column 5, data for 1937 from a study made by the United States Treasury Department, with the other years estimated; column 7, from the Annual Reports of the Secretary of the Treasury.

APPENDIX XIII.—*Sources and uses of funds of 58 industrial companies, 1930–39*

[In millions of dollars]

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	10 year net totals
USES											
1. Capital expenditures	767	371	145	191	299	442	632	866	576	462	4,751
2. Net new investments	206	66	39	13	−44	−6	13	36	6	36	365
3. Increase in inventories	−209	−357	−275	72	115	135	277	507	−349	35	−19
4. Increase in receivables	−145	−157	−193	−27	−3	130	164	33	−52	83	−167
5. Increase in marketable securities	−175	86	−100	132	−91	−113	−36	−101	44	140	−214
6. Increase in cash	114	−154	63	−162	7	149	−5	−141	323	133	327
SOURCES											
7. "Undistributed gross income"	529	69	6	212	358	654	693	835	527	720	4,603
8. Issuance of common stock	162	5	−11	−10	−7	18	119	148	4	7	435
9. Issuance of preferred stock	4	−16	−7	−5	−1	−33	−5	52	−1	0	−12
10. Increase in long-term debt	100	18	−117	−83	−114	−66	−21	−10	324	42	73
11. Increase in short-term notes, accounts payable, and other current liabilities	−236	−200	−125	66	88	177	236	156	−299	180	43
12. Residual	−2	−21	−68	39	−9	−14	21	19	−9	−58	−102
ANALYSIS OF UNDISTRIBUTED GROSS INCOME											
7a. Net income	719	165	−100	63	233	549	902	1,077	420	713	4,741
7b. Minus, dividends paid	699	556	298	241	269	323	669	742	393	531	4,721
7c. Plus, depreciation allowances	509	460	405	390	393	428	460	500	500	537	4,582

NOTES.—"Capital expenditures" exclude and "net new investments" include large acquisitions of existing fixed property which became part of consolidated net property account. "Increase in inventories" represents net increase in book value with certain adjustments. "Undistributed gross income" and "net income" excludes certain credits and includes certain charges in the nature of revaluations or capital gains or losses applicable to fixed property, investments, inventories, and long-term debt. "Issuance of common and preferred stock" and "increase in long-term debt" include transactions in reacquired securities and net premiums or discounts. "Issuance of common stock" and "dividends paid" exclude stock dividends. The residual net source reflects principally changes in contingency reserves and miscellaneous assets and liabilities. It represents in part, and to an unidentified extent, unexpended gross receipts from sales, less expenditures not included in specific uses or deducted from specific sources, and less amounts by which funds obtained through liquidation of current assets may be overstated.

Source: Data compiled by A. B. Hersey, Division of Research and Statistics, Board of Governors of the Federal Reserve System. Data are subject to revision. Data for essentially the same sample for 1930–38 are published in Hearings before the Temporary National Economic Committee, Part 9, pp. 4044–4048.

APPENDIX XIV.—*Sources and uses of funds of the Bell Telephone System,*[1] *1923–39*

[In thousands of dollars]

	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
USES																	
Net addition to plant	254,724	292,738	262,715	263,612	257,724	270,169	408,927	374,797	146,400	−12,254	−28,595	7,513	18,398	71,473	130,286	99,529	101,432
Cash and temporary investments	−23,666	−32,192	3,252	44,127	−36,109	70,207	−101,918	348,214	−129,072	−85,329	12,453	36,466	12,514	−35,558	−66,563	−17,020	13,755
Investments in affiliated companies	644	2,445	−6,999	6,873	−23,194	12,462	51,659	49,526	23,344	−3,325	−9,005	8,062	−463	−10,390	3,999	−4,274	−8,411
All other assets	5,649	−604	3,164	7,273	1,282	14,315	40,902	−2,862	−20,053	−23,023	19,449	−8,692	7,292	7,582	7,535	−4,057	2,272
SOURCES																	
Undistributed gross income	66,438	60,277	68,199	94,344	150,191	166,153	147,517	98,983	68,953	710	4,444	32,166	53,706	66,029	86,967	28,517	68,569
Current, accrued, and other liabilities	25,474	5,106	17,203	28,091	10,604	−8,645	35,212	−3,479	1,090	−35,938	−2,704	17,444	1,639	15,964	11,194	2,785	15,178
Net sales of telephone securities to public, including premiums [2]	145,440	197,004	176,730	199,453	38,909	209,646	216,841	674,171	−49,424	−88,702	−7,437	−6,320	−17,603	−48,886	−22,905	42,877	25,302
ANALYSIS OF UNDISTRIBUTED GROSS INCOME																	
Undivided profits	27,196	24,643	43,260	54,447	53,658	71,739	84,881	45,021	12,475	−45,696	−54,655	−49,838	−38,057	16,663	14,162	−12,638	22,100
Surplus adjustments	−8,591	−6,898	−19,470	−6,248	65,315	−1,431	−57	−3,101	−7,997	−99	−12,342	1,740	−9,502	−40,592	−10,143	−13,410	−4,826
Depreciation	47,833	42,532	44,409	46,145	24,448	49,958	48,413	40,971	48,580	31,609	71,688	76,275	93,389	82,798	73,104	54,565	51,295
Notes sold to pension fund trustee					6,770	45,887	14,280	16,092	15,895	14,896	−247	3,989	7,876	7,160	9,844		
Total	66,438	60,277	68,199	94,344	150,191	166,153	147,517	98,983	68,953	710	4,444	32,166	53,706	66,029	86,967	28,517	68,569

[1] Bell Telephone System comprises American Telephone & Telegraph Co. and its associated companies consolidated through 1935; but for the years subsequent to 1935, the Bell System comprises American Telephone & Telegraph Co. and its principal telephone subsidiaries consolidated.

[2] Total bond and stock financing less refunding issues and less notes sold to pension fund trustee.

Source: Based on table in Federal Communications Commission, Report on the Investigation of the Telephone Industry in the United States, made pursuant to Public Resolution No. 8, 74th Cong., 1939, p. 425. The annual figures which were used in the period totals published in that table were secured from the F. C. C., which also extended that data through 1939. The data as published or prepared by the F. C. C. were condensed and rearranged in the preparation of this table.

APPENDIX XV.—*Kuznets' estimates of gross capital formation, classified by 7 major types, 1919–38*

[In millions of dollars]

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Business:																				
Construction	2,762	3,129	2,186	2,783	3,300	3,513	4,062	4,366	4,477	4,385	4,581	3,800	2,232	1,097	936	1,180	1,463	1,854	2,555	1,952
Durable goods	6,234	6,177	3,926	3,848	5,267	4,962	5,287	5,716	5,461	5,852	6,908	5,480	3,536	2,019	2,051	3,138	3,957	5,429	6,828	5,164
Change in inventories	+4,132	+7,375	+54	+534	+3,016	−917	+1,788	+1,586	+464	−321	+2,414	−1,128	−1,375	−2,461	−1,129	−1,547	+736	+1,739	+3,080	−606
Total	13,128	16,681	6,166	7,165	11,583	7,558	11,137	11,668	10,402	9,916	13,903	8,152	4,393	655	1,858	2,771	6,156	9,022	12,463	6,510
Residential construction	1,732	1,493	2,241	3,524	4,422	4,713	5,202	4,757	4,524	4,255	3,010	1,805	1,262	444	392	458	923	1,580	1,956	1,746
Public construction	1,422	1,714	1,678	2,076	1,921	2,264	2,546	2,470	2,786	2,932	2,928	3,023	2,615	1,869	1,383	2,100	1,995	3,265	2,889	3,455
Changes in metal stocks	−256	−42	+775	+302	+351	+264	−102	+98	−110	−236	+145	+311	−132	+53	−182	+1,065	+2,173	+1,285	+1,643	+1,932
Net change in foreign balance	+3,315	+2,254	+628	+215	−78	+446	+428	+44	+606	+957	+312	+371	+326	+40	+298	−868	−1,892	−1,335	−1,454	−899
Totals:																				
Total construction	5,916	6,336	6,105	8,383	9,643	10,490	11,810	11,593	11,787	11,572	10,519	8,628	6,109	3,410	2,711	3,738	4,381	6,699	7,400	7,153
Total construction and durable goods	12,150	12,513	10,031	12,231	14,910	15,452	17,097	17,309	17,248	17,424	17,427	14,108	9,645	5,429	4,762	6,876	8,338	12,128	14,228	12,317
Total gross capital formation	19,341	22,100	11,488	13,282	18,199	15,245	19,211	19,037	18,208	17,824	20,298	13,662	8,464	3,061	3,749	5,526	9,355	13,817	17,497	12,744

Source: Simon Kuznets, National Income and Capital Formation, 1919–1935 (1937), National Bureau of Economic Research, New York, 1937, and Commodity Flow and Capital Formation in the Recent Recovery and Decline, 1932–38, National Bureau of Economic Research Bulletin 74, New York (1939).

APPENDIX XVI.—*Income-producing expenditures that offset savings, and gross national income, 1921–39*

[In millions of dollars]

Year	Gross national income	Income-producing expenditures that offset-saving							Adjusted total [7]	Adjusted total as percent of gross national income
		Plant and equipment [1]	Private housing and nonprofit construction [2]	Change in inventories [3]	Foreign balance [4]	Government [5]	Change in consumer credit [6]	Total		
1921	63,751	5,233	2,313	47	1,327	648	[8] −20	9,548		
1922	64,295	5,784	3,801	514	293	748	[8] 730	11,870	10,941	17.0
1923	74,784	7,902	4,821	2,964	−91	348	[8] 1,046	16,990	14,942	20.0
1924	75,161	7,650	5,229	−1,056	530	615	311	13,279	14,763	19.6
1925	79,686	8,189	5,750	1,523	199	529	842	17,032	15,531	19.5
1926	84,813	9,126	5,535	1,246	−39	244	648	16,760	16,869	19.9
1927	82,708	8,777	5,357	308	301	368	217	15,328	15,901	19.2
1928	86,167	8,846	5,019	102	518	733	821	16,039	15,755	18.3
1929	89,984	10,157	3,761	2,146	240	696	987	17,987	17,208	19.1
1930	79,764	8,340	2,291	−631	388	1,502	−613	11,277	13,961	17.5
1931	63,901	5,123	1,735	−1,190	47	3,784	−1,128	8,371	9,533	14.9
1932	47,446	2,799	709	−2,369	32	2,604	−1,485	2,290	4,722	10.0
1933	46,217	2,371	458	−1,106	195	1,117	150	2,885	2,647	5.7
1934	55,839	3,436	521	−1,552	460	2,271	415	5,551	4,485	8.0
1935	61,681	4,349	913	767	183	2,959	858	10,029	8,238	13.4
1936	[8] 71,400	5,783	1,536	1,790	−152	3,964	1,355	14,276	12,577	17.6
1937	[8] 79,400	7,570	1,908	3,072	−13	877	891	14,305	14,293	18.0
1938	[8] 70,800	5,389	1,817	−604	1,001	1,922	[9] −1,400	[9] 8,150	[9] 10,612	[9] 15.0
1939	[8] 75,710	[9] 6,135	[9] 2,270	[9] 990	[9] 658	[9] 3,573	[9] 900	[9] 14,649	[9] 12,049	[9] 15.9

[1] Estimates by George Terborgh. (See Appendices XVIII–XX, infra.) From "Estimated Expenditures for New Durable Goods," in Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, September 1939 and February 1940.

[2] Estimates by D. L. Wickens and R. R. Foster, for the National Bureau of Economic Research; the Department of Agriculture; and the Department of Commerce.

[3] Principally from Simon Kuznets, Commodity Flow and Capital Formation, National Bureau of Economic Research, N. Y. (1938).

[4] Compiled from the Bureau of Foreign and Domestic Commerce, The Balance of International Payments, Washington, D. C., various years.

[5] This series attempts to measure the difference between the outlays of public bodies that add to the community's disposable cash income and the receipts that represent drafts upon disposable cash income. Computed by the Board of Governors of the Federal Reserve System.

[6] Estimates for 1923–37 by Rolf Nugent, Consumer Credit and Economic Stability, Russell Sage Foundation, New York, 1939. Other years, by the Board of Governors of the Federal Reserve System.

[7] Equal to 60 percent of the current year, plus 40 percent of the preceding year.

[8] Estimated.

[9] Preliminary.

Source: Testimony by Lauchlin Currie, Hearings Before the Temporary National Economic Committee. Savings and Investment, Part 9, pp. 4010–4018, 4122, as revised. Sources and methods were described on pp. 4015–4018. The footnotes on sources and methods are condensed from Currie's testimony.

APPENDIX XVII.—*Terborgh's estimates of expenditures for new durable goods, classified by 5 major types, 1919–39*

[In millions of dollars]

	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Producers'—																					
Plaut	3,166	3,738	2,475	2,644	3,280	3,307	3,591	4,185	4,133	4,103	4,562	3,768	2,182	1,192	867	1,129	1,258	1,650	2,294	1,776	1,851
Equipment	[1] 3,929	[1] 4,589	[1] 2,758	3,140	4,622	4,343	4,598	4,941	4,644	4,743	5,595	4,572	2,941	1,607	1,504	2,307	3,091	4,133	5,276	3,613	4,284
Total	7,095	8,327	5,233	5,784	7,902	7,650	8,189	9,126	8,777	8,846	10,157	8,340	5,123	2,799	2,371	3,436	4,349	5,783	7,570	5,389	6,135
Consumers'—																					
Plant	1,785	1,712	2,016	3,414	4,395	4,772	5,141	4,843	4,645	4,355	3,193	1,824	1,379	515	373	419	813	1,374	1,740	1,618	2,060
Buildings for non-profit institutions	185	236	297	387	426	457	609	692	712	664	568	467	356	194	85	102	100	162	168	199	210
Total	1,970	1,948	2,313	3,801	4,821	5,229	5,750	5,535	5,357	5,019	3,761	2,291	1,735	709	458	521	913	1,536	1,908	1,817	2,270
Public plant	[2] 912	[2] 1,212	[2] 1,525	1,657	1,598	1,862	2,108	2,113	2,368	2,462	2,411	2,777	2,577	1,794	[3] 1,330	[3] 2,037	[3] 1,834	[3] 3,284	[3] 2,789	[3] 3,359	[3] 3,832
Total:																					
Plant	6,048	6,898	6,313	8,102	9,699	10,398	11,449	11,833	11,858	11,584	10,734	8,836	6,494	3,695	2,655	3,687	4,005	6,470	6,991	6,952	7,953
Plant plus producers' equipment	9,977	11,487	9,071	11,242	14,321	14,741	16,047	16,774	16,502	16,327	16,329	13,408	9,435	5,302	4,159	5,994	7,096	10,603	12,267	10,565	12,237

[1] Excludes ships built for the Emergency Fleet Corporation.
[2] Excludes special war-time military construction.
[3] Includes work-relief construction.

Source: George Terborgh, "Estimated Expenditures for New Durable Goods, 1919-38," Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, September 1939 and February 1940.

APPENDIX XVIII.—*Estimated expenditures for new durable producers' goods, 1919–39*

(PLANT AND EQUIPMENT)

[In millions of dollars]

Year	Total	Railroads	Electric power	Telephones	Transit	Other utilities	Mining and manufacturing	Agriculture	Commercial and miscellaneous
1919	7,095	371	260	132	123	155	3,121	1,237	[1] 1,693
1920	8,327	630	437	203	162	181	3,538	1,376	[1] 1,800
1921	5,233	550	276	229	100	137	2,034	556	[1] 1,351
1922	5,784	434	395	265	151	236	2,169	575	1,559
1923	7,902	1,077	723	318	180	245	2,680	750	1,929
1924	7,650	901	827	385	133	355	2,352	704	1,993
1925	8,189	728	766	385	123	300	2,726	800	2,361
1926	9,126	883	704	404	116	380	3,169	845	2,625
1927	8,777	751	722	397	130	427	2,854	907	2,589
1928	8,846	673	679	457	135	348	3,052	901	2,601
1929	10,157	840	774	615	135	369	3,596	992	2,836
1930	8,340	865	835	612	124	298	2,541	730	2,335
1931	5,123	360	538	408	132	243	1,435	411	1,596
1932	2,799	164	257	253	61	127	930	191	816
1933	2,371	101	113	171	46	57	992	234	657
1934	3,436	218	126	185	78	73	1,460	356	940
1935	4,349	166	166	206	117	86	1,807	591	1,210
1936	5,783	306	251	261	109	135	2,403	729	1,589
1937	7,570	525	400	348	101	162	3,122	919	1,993
1938	5,389	238	422	318	83	110	1,995	764	1,459
1939 [2]	6,135	362	373	333	107	135	2,425	695	1,705

[1] Excludes ships built for the Emergency Fleet Corporation.
[2] Figures for 1939 are preliminary.

Source: Estimates by George Terborgh, Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, September 1939 and February 1940.

APPENDIX XIX.—*Estimated expenditures for new durable producers' goods, 1919–39*

(PLANT)

[In millions of dollars]

Year	Total	Railroads	Electric power	Telephones	Transit	Other utilities	Mining and manufacturing	Agriculture	Commercial and miscellaneous
1919	3,166	143	156	64	63	113	1,497	545	585
1920	3,738	243	262	109	82	122	1,753	510	657
1921	2,475	212	163	90	59	93	1,013	245	600
1922	2,644	175	229	107	85	157	976	270	645
1923	3,280	361	412	143	74	166	1,049	340	735
1924	3,307	382	463	177	56	238	908	322	761
1925	3,591	373	421	192	52	199	1,036	328	990
1926	4,185	492	380	206	51	239	1,320	320	1,177
1927	4,133	447	383	196	77	285	1,171	368	1,206
1928	4,103	438	353	227	90	227	1,227	360	1,181
1929	4,562	503	387	328	82	256	1,441	379	1,186
1930	3,768	521	409	310	85	186	1,037	223	997
1931	2,182	284	258	154	69	174	515	146	582
1932	1,192	126	121	80	29	86	387	74	289
1933	867	85	52	42	21	35	373	104	155
1934	1,129	122	57	14	30	47	524	115	190
1935	1,258	83	73	48	40	57	552	180	225
1936	1,650	139	108	62	45	92	728	187	289
1937	2,294	188	172	100	39	117	1,053	222	403
1938	1,776	117	182	88	41	72	755	182	339
1939 [1]	1,851	152	160	90	54	90	775	175	355

APPENDIX XX.—*Estimated expenditures for new durable producers' goods, 1919–39*

(EQUIPMENT)

[In millions of dollars]

1919	3,929	231	104	68	60	42	1,624	692	[2] 1,108
1920	4,589	387	175	94	80	59	1,785	866	[2] 1,143
1921	2,758	338	113	139	41	44	1,021	311	[2] 751
1922	3,140	259	166	158	66	79	1,193	305	914
1923	4,622	716	311	175	106	79	1,631	410	1,194
1924	4,343	519	364	208	77	117	1,444	382	1,232
1925	4,598	355	345	193	71	101	1,690	472	1,371
1926	4,941	391	324	198	65	141	1,849	525	1,448
1927	4,644	304	339	201	53	142	1,683	539	1,383
1928	4,743	235	326	230	45	121	1,825	541	1,420
1929	5,595	337	387	287	53	113	2,155	613	1,650
1930	4,572	344	426	302	39	112	1,504	507	1,338
1931	2,941	76	280	254	63	69	920	265	1,014
1932	1,607	38	136	173	32	41	543	117	527
1933	1,504	16	61	129	25	22	619	130	502
1934	2,307	96	69	141	48	26	936	241	750
1935	3,091	83	93	158	77	29	1,255	411	985
1936	4,133	167	143	199	64	43	1,675	542	1,300
1937	5,276	337	228	248	62	45	2,069	697	1,590
1938	3,613	121	240	230	42	38	1,240	582	1,120
1939 [1]	4,284	210	213	243	53	45	1,650	520	1,350

[1] Figures for 1939 are preliminary.
[2] Excludes ships built for the Emergency Fleet Corporation.

Source: Estimates by George Terborgh, Board of Governors of the Federal Reserve System, Federal Reserve Bulletin, September 1939, and February 1940.

INDEX

291143—41—No. 37——10