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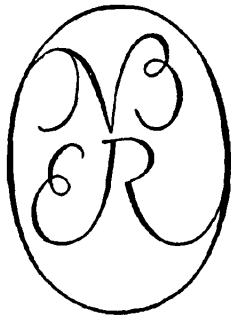
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Financial Intermediaries  
IN THE AMERICAN ECONOMY  
SINCE 1900

by

RAYMOND W. GOLDSMITH



A STUDY BY THE  
NATIONAL BUREAU OF ECONOMIC RESEARCH, NEW YORK

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IN THE AMERICAN ECONOMY  
SINCE 1900

**NATIONAL BUREAU OF ECONOMIC RESEARCH  
STUDIES IN CAPITAL FORMATION AND FINANCING**

# National Bureau of Economic Research

1957

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*(Resolution adopted October 25, 1926 and revised February 6, 1933  
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*This monograph is part of a larger investigation of trends and prospects in capital formation and financing made possible by a grant from the Life Insurance Association of America.*





## FOREWORD

### I

THIS is the third in a series of monographs resulting from an inquiry initiated by the National Bureau of Economic Research in 1950, with the financial assistance of the Life Insurance Association of America.<sup>1</sup> The inquiry examines long-term trends in capital formation and financing in the United States, and is organized primarily about the principal capital-using sectors of the economy—agriculture, mining and manufacturing, the public utilities, residential real estate, and governments. The analysis for each sector summarizes the major trends in real capital formation from 1870 (or the earliest year for which data are available), in financing from 1900 (the earliest practicable date) and the factors determining these trends; and, so far as possible, suggests the significance of these factors for the future. In addition to the five sector studies, the inquiry comprises two others. One, reported on in the present monograph, deals with trends in financing channeled through intermediate financial institutions and attempts to link the major types of institutions with the various groups of capital users. The second utilizes the results of all other studies, within a framework provided by the countrywide estimates of national product and relevant components, and of countrywide estimates of assets and debts.

Some of the findings have been presented in part or in preliminary form in a series of Occasional and Technical Papers.<sup>2</sup> This monograph, like the two preceding and the others to follow, presents the full results of a specific study, together with the supporting data—although for reasons of economy some of the detailed data here are relegated to mimeographed appendixes.

<sup>1</sup> The first monograph, *Capital Formation in Residential Real Estate: Trends and Prospects*, by Leo Grebler, David M. Blank, and Louis Winnick, was published by Princeton University Press for the National Bureau of Economic Research in 1956. The second, *Capital Formation in Agriculture: Its Formation and Financing Since 1870*, by Alvin S. Tostlebe, was published in 1957.

<sup>2</sup> Leo Grebler, *The Role of Federal Credit Aids in Residential Construction*, Occasional Paper 39 (1953); Daniel Creamer, *Capital and Output Trends in Manufacturing Industries, 1880-1948*, Occasional Paper 41 (1954); Raymond W. Goldsmith, *The Share of Financial Intermediaries in National Wealth and National Assets, 1900-1949*, Occasional Paper 42 (1954); Melville J. Ulmer, *Trends and Cycles in Capital Formation by United States Railroads, 1870-1950*, Occasional Paper 43 (1954); Alvin S. Tostlebe, *The Growth of Physical Capital in Agriculture, 1870-1950*, Occasional Paper 44 (1954); Israel Borenstein, *Capital and Output Trends in Mining Industries, 1870-1948*, Occasional Paper 45 (1954); David M. Blank, *The Volume of Residential Construction, 1889-1950*, Technical Paper 9 (1954); all published by the National Bureau of Economic Research.

## FOREWORD

### II

The institutions whose changing role in the economy Dr. Goldsmith measures and discusses in detail are those that receive the disposable funds of ultimate savers—households, enterprises, and governments—and channel them to economic units in need of outside funds. In the definition underlying the study such financial intermediaries include not only banks and insurance organizations, but also investment companies, personal trust departments, sales and personal finance companies, mortgage companies, and several government lending organizations. For all of these types the numbers of units, total assets, structure of assets, and structure of liabilities are studied over a long period—mostly since 1900. The shares of these intermediaries in the flow of savings, and, particularly important for the present study, in the external financing of various groups of capital users, are estimated and discussed. The result of this study, in scope of coverage a truly pioneering one, is a highly valuable detailed picture of long-term growth of a set of institutions that constitute a distinctive component of modern economic organization and that account in no small part for the spectacular rise in the efficiency of the country's economy.

At a double risk of repeating some of Dr. Goldsmith's summary statements and oversimplifying the findings, let me list what seem to me the major trends strongly indicated by Dr. Goldsmith's study.

(1) The quantitative weight of financial intermediaries, as measured by shares of their assets in the appropriate asset totals, or by the share of savings channeled through them, shows a significant long-term rise. This growth of financial intermediaries, relatively faster than other segments in the economy, can be illustrated by a variety of figures. The share in intangible assets increased almost continuously from one-fourth in 1900 to approximately two-fifths in 1952. The rise in their share in all long-term claims was even more spectacular—from about three-tenths in 1900 to about six-tenths in the 1950's. Of individuals' total assets an increasing share was entrusted to financial intermediaries: only a tenth in 1900 and about one-fourth in recent years. The share of net personal current savings flowing through financial intermediaries amounted to about a third in the years 1900-1929, and during the 1930's and 1940's rose to about one-half (if consumer durables are excluded). If we take only intangible assets into account, about two-fifths of all personal savings flowed through financial intermediaries in 1900-1929, but more than two-thirds in the 1940's and early 1950's.

## FOREWORD

The illustrative figures above, and all of Dr. Goldsmith's measures, relate to net savings flows and their cumulation in assets totals. While some experimental work was done on measuring the gross flows—including new engagements and repayments—it was not possible to establish continuous and comprehensive measures for them. Yet from many standpoints it is the role of financial intermediaries in channeling the *gross* flows that is more important in understanding their role in and contribution to the processes of capital formation viewed in their bearing upon economic growth of the country. It should, therefore, be noted that both the levels and the long-term rises in the shares of financial intermediaries in the gross flows may be greater than is suggested by those in net flows or in assets.

(2) Accompanying the rapid growth of financial intermediaries were major shifts in the relative importance of the various types within the whole complex—reflecting large differences in the rate of growth of different types of intermediaries. The share of the banking system declined considerably over the last half century, from about seven-tenths of total assets of all financial intermediaries to about a half. The share of the insurance system increased sharply—from less than an eighth of total assets of financial intermediaries to close to three-tenths. The share of the private sector declined: whereas in 1900 the private sector held all of the assets of financial intermediaries, by the 1950's it held only three-quarters—the remaining quarter being in the hands of governmental financial agencies. One can thus say briefly that the security-oriented types of financial intermediaries rose in importance, while financial intermediaries that were more concerned with short-term business funds declined in relative importance.

(3) The share of financial intermediaries in the external financing of several major capital-using sectors in the economy differs materially in level; and the trends in these shares have not been in the same direction. Financial intermediaries supplied about two-thirds of the external financing of nonfinancial corporations—and this proportion showed no distinct trend over the period. They supplied about a third of the debt financing of unincorporated business enterprises—and the share has, on the whole, diminished. They supplied about a half of external financing of agriculture—the proportion being relatively constant; but their share in *total* financing of agriculture diminished sharply as that of self-financing increased. The share of financial intermediaries in home mortgages varied from two-thirds to nine-tenths of the total outstanding and, on the whole, tended to increase. The share in external financing of local and

## FOREWORD

state governments was slightly below one-half for the first three decades of the century but rose to over four-fifths in recent years. Finally, financial intermediaries played an increasing role in financing the rapidly expanding needs of the federal government—holding a third of the federal debt in 1919 and over two-thirds ever since 1933.

The aggregate result of these various levels and trends was that financial intermediaries supplied slightly more than one-half of all external funds absorbed by other domestic economic groups—households, business, and governments; that this ratio increased significantly over the period; but that such rise was observed only within some of the major capital-using sectors. Finally, all such measures of shares in *external* financing must be weighted in terms of the changing shares which external funds constituted in *total* financing, either net or gross.

### III

The brief statements above, while emphasizing the growing share of financial intermediaries in the countrywide totals that reflect the operation of the economy, neglect other aspects of the process discussed at length in Dr. Goldsmith's monograph. One is the proliferation of types of financial intermediaries—presumably in continuous adjustment to changing needs, which in turn reflect the emergence of new sources of savings and of new types of demand for them. Another is the changing structure of assets and liabilities of the financial intermediaries—a necessary corollary of the shifting importance of various sources and uses of funds. A third is the extremely interesting discussion (in Chapter II) which attempts, in what is almost an entirely new field—the theory of financial institutions—an analysis of the various groups of factors that can be quantitatively approximated in trying to account for the major trends in the relative share of financial intermediaries, in their structure by type, and in the structure of their assets and liabilities. This is not the place for a discussion of these, and other important parts, of Dr. Goldsmith's monograph: the interested reader should, and will, turn to the appropriate chapters that follow.

But two broad reflections are perhaps appropriate here. The first is suggested by the recognition that financial intermediaries are, on the one hand, a result of social invention in the continuous attempt of people to take advantage of the potentials of economic growth; and that, on the other hand, when already formed, these intermediaries are institutions that can be, and often are, used to handle other

## FOREWORD

problems as they arise. As an economic society grows, the kinds of savings it generates reflect the changing position of would-be saver groups and their views on the economic present and future; and the kinds of demand for savings it generates are also a continuous changing reflection of views of would-be capital users as to prospective demand and capital efficiency. The generation of savings, in various forms, and of investment demands, again in a variety of forms, is a complicated process that involves the matching of the supply and demand tides. This takes place partly through adjustments in the structure of interest rates and other terms on which money is transferred, with repercussions on supply and demand. In part, also, it is facilitated by the ability of financial intermediaries to translate one type of security or claim into another. In this way savings are most effectively utilized for investment purposes and the wishes of both suppliers and users of capital satisfied. As the varieties of types of savings, on the supply side, and of potential capital investment, on the demand side, increase, so does the variety of types and indeed the very magnitude of financial intermediaries grow.

But, once these institutions are in existence, they are at hand for use when new problems emerge, even though they originally were not evolved for dealing with such problems. The most conspicuous example is provided by the use of financial intermediaries in the emergency financing of federal government during major war conflicts; but plenty of other examples could be mentioned. The result is that when one measures the operations of existing financial intermediaries, and observes their movements through time—as Dr. Goldsmith does in his monograph—the picture is a complex amalgam of movements that can be viewed as gradual response to newly emerging situations and underlying trends, with those that are reflections of suddenly arising problems which are no less massive because they are compressed within relatively brief periods.

In consequence, any explanation of the long-term movements in the share and structure of financial intermediaries must eventually combine certain basic long-term trends with other, apparently more transient and external factors. Among the former one may easily think of the continuous increase in the income share of wage and salary employees and decrease of the share of individual entrepreneurs—with effects both on the volume and type of savings that are likely to be generated; of the long-term changes in distribution of income by size—which in recent decades would serve to reduce the proportion of personal savings coming from upper brackets; of the

## FOREWORD

trends in the industrial structure with the rising share of governments in economic activities; of long-term rises in the size of the business units—which would affect the character of the demand for funds—reducing that for short-term and increasing eventually the importance of self-financing. Among the more transient and apparently external factors are war conflicts—with their sudden pressure for funds on the part of central government, and limitation of outlets for savings within the private sector. But there is a genuine question as to how right one is in classifying these factors as transient, considering that within the half century covered here there were two major wars, the effects of the first probably counting for a great deal in producing the devastating depression of the 1930's and the effect of the second still with us in the size of the federal government budget and in a variety of other influences. One need not stress the obvious bearing of these observations upon the difficulty of a proper analysis of the long-term trends over the period covered in the monograph and of deriving from it bases for view into the future.

The second reflection concerns an evaluation of the performance of financial intermediaries. Granted that, by and large, financial intermediaries were born, multiplied, and diversified, in response to growing needs of balancing changing volumes and forms of saving on the supply side and changing volumes and forms of investment opportunities on the demand side. How well were these needs met? Can we say that there was no undue delay in the response by financial intermediaries to changing forms of supply of savings, or of the demand for them, so that there was no wastage in channeling the funds to the most efficient uses? Can we say that the financial institutions, once established and operating within a framework limited by custom or by law, developed trends of their own, patterns of operation that may have lagged behind the changing situation—partly because of imperfections in or obsolescence of the framework of law and custom? Can we measure somehow the efficiency of financial intermediaries in performing their function, and as an important corollary, the effects of their structure on channeling funds to different parts of the system—and hence both on the volume and structure of *real* capital formation?

It is sufficient but to raise these questions for one to realize how extremely difficult it is to answer them. Short of a bland assertion that everything is for the best in this world, one must recognize that no set of institutions ever works perfectly in terms of the functions

## FOREWORD

that it is to perform for society; and that therefore a margin of tolerance, a minimum of lag and discrepancy, must be allowed. But how much? The fact of the matter is that in the complex and changing historical situation in which economic society operates, our skills are barely sufficient to permit us to take a broader view, a longer perspective, than emphasis on today, this month, or this year, permit. Our empirical knowledge, and our capacity for analysis, are not sufficient to answer the evaluative questions posed above—short of a case where the failure of adjustment of institutions is so marked as to create a pressing problem the existence of which can hardly be denied. And even then one must be careful not to fall into the usual error of contemporaries to whom a mote in their eyes looks larger than a beam in the eyes of their predecessors.

### IV

That in this field of financial intermediaries the establishment and explanation of trends is hardly an easy task, and that of evaluating adequately the functioning of financial intermediaries in their effect on capital formation, and hence on economic growth, is well-nigh impossible, is hardly surprising. It is not an exaggeration to say that systematic and comprehensive empirical work in this field is but recent—stemming from not much more than a decade and a half ago; and it was limited to the United States—a task to which Dr. Goldsmith himself has contributed so markedly in his monumental *A Study of Saving in the United States*.<sup>3</sup> The present monograph leans heavily on that study, and is in a sense a bridge connecting it with the present inquiry on trends in capital formation and financing. It could hardly have been possible to secure, on the basis of the limited amount of study and of tested experience, sufficient knowledge concerning the operations of financial intermediaries to be reasonably sure of the complexes of factors that determined the long-term movements—let alone know the empirical coefficients of tolerance in adjustment that would permit an acceptable evaluation of the efficiency with which the financial institutions discharged their role.

All this amounts to saying that in a sense Dr. Goldsmith's monograph is a beginning—a vast, valuable pioneering contribution, but still a beginning—in what has heretofore been an inadequately studied field. And it is encouraging to know that the study is being

<sup>3</sup> Princeton University Press, Vols. I and II, 1955; Vol. III, 1956.



## FOREWORD

carried forward, under Dr. Goldsmith's direction, to the more recent experiences in postwar capital markets in this country.<sup>4</sup>

Readers who study Dr. Goldsmith's monograph with care will not underestimate the contribution made and the value of statistical evidence which permits bringing under study the long record of such a variety of financial institutions. One cannot be sure that we shall ever be in a position to establish, unequivocally, long-term trends in financing and in the role of financial institutions; that we shall be able to construct a tested theory tying within an analytical framework the factors that produced the long trends; or that we shall know enough of the effects of diverse financial intermediaries in their role as brokers between savers and investors to form anything but the roughest judgment of their efficiency in promoting capital formation and economic growth. But this is no excuse for flinching before the task of organizing recalcitrant data as best one can; for using whatever knowledge is already available to plug the gaps; for attempting to formulate at least a partial analytical structure for guidance in interpreting the findings. The least that such an effort can do is to provide the information that would make it harder to accept easy and plausible generalizations on the basis of superficial impressions; that would limit the area within which too free a rein is given to the play of conflicting group interests and policy ideals.

But Dr. Goldsmith's study contributes much more than that: a vast fund of information for use by other scholars; a cogent picture of long-term trends in an important aspect of our economy; a pioneering analysis in the theory of financial institutions. All of these are bases upon which further knowledge and understanding can be built.

SIMON KUZNETS

<sup>4</sup> See National Bureau of Economic Research, *Thirty-seventh Annual Report*, May 1957, pp. 34-39.

## PREFACE

THIS study was undertaken as a part of the National Bureau's inquiry into long-term trends in capital formation and financing in the United States. Within that inquiry the study had the function of indicating the position of financial institutions in the external financing of the main sectors of the economy; that is, their role in making available the disposable funds of households, enterprises, and governments to economic units in need of outside funds.

Most of the studies that deal with capital formation in the main sectors of the economy—industry, public utilities, housing, agriculture, federal and local governments—include a discussion of the sources of funds, besides investigating the use of such funds for capital investment, which is their main task. These discussions, however, lack the uniformity, and in some cases the fullness, that would permit their construction into a comparative study of financing in the different sectors during the last half century, and in particular of the share of financial intermediaries in the process. The attempt in Chapter VII of this study to present such a picture, even though only in rough and preliminary form, is therefore largely independent of the treatment of the same subject in other monographs and uses statistical material of different origin.

The monographs devoted to capital formation in the individual sectors obviously cannot deal with the process of saving as such, with respect to its function as a source of external finance; or with the specific problem of the long-term trends in the size, structure, and operation of financial intermediaries; or with the sources and uses of funds of financial intermediaries. Trends in saving in the United States since the turn of the century have been investigated in the author's *A Study of Saving in the United States*.<sup>1</sup> The present volume therefore concentrates attention on financial intermediaries as operating institutions, with particular, though not overriding, emphasis on their role as channels between savers and users of funds. Chapters IV and V and Supplementary Appendixes C and D on changes in size distribution and in regional distribution are included with the intent of dealing with all of the more important structural changes that have affected financial intermediaries over the last fifty years. These subjects have been rather neglected in previous studies of financial institutions. It was not possible here to go far in investigating them, but they seemed

<sup>1</sup> Princeton University Press, Vols. I and II, 1955; Vol. III, 1956.

## PREFACE

too important to omit, and an attempt was made to develop new data that could throw light on them.

The definition of financial intermediaries underlying the study is a rather broad one. It covers not only banks and insurance organizations, but also investment companies, personal trust departments, sales and personal finance companies, mortgage companies, and several government organizations. Here again the relative neglect in financial research of several types of institutions, outside of the few larger groups, led to an attempt to provide here at least the minimum of quantitative information needed for a view of their long-term development and to fit them into the better known picture for banks and insurance companies.

Chapters II and IX go somewhat beyond a study of financial institutions as such. They try to describe, and to some extent to explain, changes in the position of financial intermediaries in the American economy. They are thus intended as a modest contribution to a much needed general theory of financial institutions.<sup>2</sup>

The original plan of the study included a section on gross flow of funds, which involves chiefly the separation of purchases and sales of securities and of new loans and repayments. Gross flow data are important in following and analyzing the operations of financial intermediaries, as they supplement the information provided by net changes in the different asset and liability items that can be derived from balance sheets. An attempt was therefore made to collect available gross flow information for financial intermediaries, and to add unpublished data to the scanty published material. A considerable amount of work was done, most of it exploratory and experimental in nature, but it did not yield substantive results directly usable in the study.<sup>3</sup>

Most of the statistical work embodied in this study was done in 1952-1953, with the assistance of Charlotte Scott throughout the period, and the help of Joel Darmstadter and Alexander Ganz during part of the time. Hence data have not been provided beyond

<sup>2</sup> Such a theory calls for extension of the field of study to economies outside the United States. A small step in this direction was taken in a paper, "Financial Structure and Economic Growth in Advanced Countries," written in 1953 and published in *Capital Formation and Economic Growth*, 1956 (Princeton University Press for National Bureau of Economic Research).

<sup>3</sup> Most of this work was done by Dr. Howard H. Greenbaum. Other commitments unfortunately prevented Dr. Greenbaum from analyzing the data he had collected to the extent originally planned, or preparing a full report on his findings. Appendix I discusses the need for gross flow data and illustrates the methods used and the materials developed.

## PREFACE

the year 1952 and later publications have been utilized in only a few instances. Part of the basic data, to an extent indicated in detail in the notes to the individual tables, was developed from the material collected in preparing *A Study of Saving in the United States*. Many of the acknowledgments in the Preface to Volume I of that study therefore apply here too, particularly the indebtedness to the Research Division of the Board of Governors of the Federal Reserve System for making available unpublished data, and the thanks to Elsie Jennings for help in typing the manuscript. The National Bureau's editorial and clerical staffs helped in preparing it for press, and H. Irving Forman drew the charts. The study also profited at various stages from the comments of Morris Copeland, Melvin de Chazeau, Lewis Dembitz, Solomon Fabricant, Donald Kemmerer, Simon Kuznets, and R. J. Saulnier.

Special acknowledgment should be made to the Advisory Committee on the Study of Capital Formation and Financing, which assisted in drafting plans for this investigation, conferred with the staff and author at several stages of the work, and reviewed the final manuscript. Members of the Committee were: Leo Wolman, Chairman; Sherwin C. Badger, Donald R. Belcher, Claude L. Benner, Percival F. Brundage, Arthur F. Burns, W. Braddock Hickman, Edgar M. Hoover, DeLong H. Monahan, and Geoffrey H. Moore.

A summary of the material now presented in Chapters IV, VI, and IX was published in 1954 under the title *The Share of Financial Intermediaries in National Wealth and Assets, 1900-1949* as Occasional Paper 42 of the National Bureau of Economic Research. Since then some figures have been revised, particularly those for 1949; data for 1952 have been added; and a few modifications in interpretation have been made.

This volume contains the entire main text of the study and also Appendix A, which includes the balance sheets of all financial institutions covered and a description of their sources and derivation. Other appendixes (listed overleaf) which contain supplementary material (Appendixes C, D, H, and I), or describe the derivation of some of the estimates used in the text (Appendixes B, E, F and G) had to be omitted in the interest of keeping down the price of this volume and of avoiding further delays in publication. A mimeographed volume of them, however, is available in a number of libraries and may be obtained from the offices of the National Bureau at cost so long as the supply lasts.

September 30, 1955

RAYMOND W. GOLDSMITH

## CONTENTS OF MIMEOGRAPHED SUPPLEMENT

- Appendix B.* Estimates of Assets of Personal Trust Funds Administered by Banks and Trust Companies
- Appendix C.* Notes and Statistics on Size Distribution among Financial Intermediaries
- Appendix D.* Supplementary Tables on Regional Distribution of Financial Intermediaries
- Appendix E.* Statistics of Investment Banking Outlets
- Appendix F.* Estimates of Market Value of Corporate Stock
- Appendix G.* Estimates of Securities and Mortgages Outstanding
- Appendix H.* Factors Influencing Choice between Direct and Indirect Placement of Saving
- Appendix I.* Material on Gross Flow of Funds through Financial Intermediaries

## CONTENTS

Foreword by Simon Kuznets	ix
Preface	xvii
<b>I. SUMMARY OF FINDINGS</b>	<b>3</b>
1. Growth of Total Assets of Financial Intermediaries, 1900 to 1952	3
2. Variations in Rate of Growth	3
3. Differences among Institutions in Rate of Growth	4
4. Changes in Number of Financial Intermediaries	4
5. Changes in Density of Financial Intermediaries	5
6. Changes in Structure of Assets	5
7. Changes in Structure of Sources of Funds	6
8. Concentration of Resources among Financial Intermediaries	7
9. Share of Financial Intermediaries in Financing the Economy	7
10. Share in Financing Nonfinancial Corporations	8
11. Share in Financing Unincorporated Business Enterprises	8
12. Share in Financing Agriculture	9
13. Share in Financing Nonfarm Households	9
14. Share in Financing State and Local Governments	10
15. Share in Financing the Federal Government	10
16. Financial Intermediaries as Outlets of Individuals' Funds	11
17. Share in Personal Saving	11
18. Share in National Assets	11
19. Relation to National Wealth	12
20. The Outlook	12
<b>II. THE MEANING OF THE FINDINGS</b>	<b>13</b>
1. Scope of Discussion	13
2. Immediate Determinants of Role of Financial Intermediaries in Economic Structure	16
a. Basic Relations	16
b. Share of Money in National Assets	21
c. Share of Insurance Reserves in National Assets	26

## CONTENTS

d. Share of Financial Intermediaries in National Liabilities Other Than Money and Insurance Reserves	30
e. Share of Equity of Financial Intermediaries in National Assets	34
3. Ultimate Economic Determinants	36
a. National Balance Sheet Ratios	36
b. Price Movements	39
4. The Outlook	42
a. Ratio of Insurance Reserves to National Assets	43
b. Ratio of Money to National Assets	45
c. Ratio of Other Claims against Financial Intermediaries (excluding Money and Insurance Reserves) to National Assets	46
d. Total Share of Financial Intermediaries in National Assets	47
III. TYPES OF FINANCIAL INTERMEDIARIES	50
IV. A CENTURY OF GROWTH OF FINANCIAL INTERMEDIARIES, 1850 to 1952	56
1. Purpose and Scope of Chapter	56
2. A Bird's-Eye View of the Development of Financial Intermediaries in the United States	57
3. Differences in the Rate of Growth of Financial Intermediaries	68
a. Differences in Growth of Assets	68
b. Shifts in Distribution of Assets among Institutions	82
4. Size Distribution of Assets of Financial Intermediaries	86
V. THE GEOGRAPHIC EXPANSION AND DISTRIBUTION OF FINANCIAL INTERMEDIARIES	88
1. Approach	88
2. Geographical Expansion	92
3. The Trend in Number Density of All Financial Intermediaries	94
4. Regional Differences in Number and Resource Density of Financial Intermediaries in 1949	97

## CONTENTS

a. All Financial Intermediaries	97
b. Main Financial Intermediaries	99
5. Changes in Density Differences	106
a. All Financial Intermediaries 1929-1949	107
b. Banks 1850-1949	108
6. Distribution of Offices and Resources among States and Regions	112
7. Share of Various Intermediaries in Different Regions	116
8. The Position of New York City	119
9. The Position of Other Major Financial Centers	123
VI. CHANGES IN USES AND SOURCES OF FUNDS BY FINANCIAL INTERMEDIARIES	126
1. Approach	126
2. Structural Changes in Uses and Sources of Funds	130
3. The Banking System	143
a. Structural Changes in Uses of Bank Funds	143
b. Distribution of Funds among Business Enterprises	148
c. Structural Changes in Sources of Bank Funds	156
4. Insurance Organizations	165
a. Structural Changes in Uses of Insurance Funds	165
b. Structural Changes in Sources of Insurance Funds	169
5. Miscellaneous Financial Intermediaries	172
a. Personal Trust Departments	174
b. Savings and Loan Associations	176
c. Finance Companies	178
d. Government Lending Institutions	178
VII. THE ROLE OF FINANCIAL INTERMEDIARIES IN FINANCING THE MAIN INVESTOR GROUPS	180
1. Purpose and Scope	180
2. Summary	181
3. Problems of Measurement	185
4. Nonfarm Households	190
a. Share in Total Financing	191
b. Share in Home Financing	194
c. Share in Short-Term Debt	199



## CONTENTS

5. Agriculture	204
6. Unincorporated Business	214
7. Corporations	217
a. Summary	217
b. Nature of Material	218
c. All Nonfinancial Corporations	220
d. Corporations in Different Industries	226
e. Corporations of Different Size	239
8. State and Local Governments	258
9. Federal Government	265
VIII. FINANCIAL INTERMEDIARIES AS OUTLETS OF INDIVIDUALS' FUNDS	 277
1. Trends during the First Half of the Twentieth Century	 277
a. Importance of Claims against Financial Inter- mediaries among Total Assets of Households	 277
b. Importance of Claims among Taxable Estates	280
2. Share of Claims against Financial Intermediaries in Assets of Different Types of Households	 283
a. Share of Total Claims	284
b. Kind of Claim	291
3. Summary	296
IX. THE ROLE OF FINANCIAL INTERMEDIARIES IN THE FINANCIAL STRUCTURE OF THE AMERICAN ECONOMY	  297
1. Share of Financial Intermediaries in Financing the American Economy as a Whole	 297
2. Share of Financial Intermediaries in Personal Saving	 302
3. The Position of Financial Intermediaries in the National Balance Sheet	 307
a. Problems of Measurement	309
b. Basic Relationships	313
c. Share of Financial Intermediaries in National Assets since 1900	 316
d. Share of Financial Intermediaries in Intangible Assets	 320
e. Share of Financial Intermediaries in Tangible Assets (National Wealth)	 322

*CONTENTS*

f. Three Supplementary Relations	325
g. Share of Financial Intermediaries in Changes in National Assets and Wealth	327
h. Share of Financial Intermediaries in National Assets and National Wealth during the Nine- teenth Century	331
Appendix A: Balance Sheets of Financial Intermediaries at Benchmark Dates	335
Index	411



## TABLES

1. Position of Financial Intermediaries in the National Balance Sheet	17
2. Main Components of Financial Intermediaries' Share in National Assets, Benchmark Dates, 1900-1952	20
3. Determinants of Share of Money in National Assets, Benchmark Dates, 1900-1949	25
4. Determinants of Share of Insurance Reserves in National Assets, Benchmark Dates, 1900-1949	29
5. Determinants of Share of Financial Intermediaries' Liabilities in National Assets, Benchmark Dates, 1900-1949	33
6. Determinants of Share of Equity of Financial Intermediaries in National Assets, Benchmark Dates, 1900-1949	34
7. Ultimate Economic Determinants of Financial Intermediaries' Share in National Assets, Benchmark Dates, 1900-1949	37
8. Growth of Financial Intermediaries in Relation to Population, Selected Years, 1800-1952	62
9. Organizational Growth of Financial Intermediaries, Selected Dates, 1850-1949	65
10. Total Assets of Main Groups of Financial Intermediaries, Benchmark Dates, 1900-1952	73
11. Percentage Distribution of Total Assets of Main Groups of Financial Intermediaries, Benchmark Dates, 1900-1952	75
12. Percentage Distribution of Changes in Total Assets among Main Groups of Financial Intermediaries between Benchmark Dates	77
13. Private and Public Financial Intermediaries, Total Assets, Benchmark Dates, 1900-1952	85
14. Enterprise Density of Main Financial Intermediaries, 1900, 1929, and 1949	95
15. Regional Differences in Office Density of Main Financial Intermediaries, 1949	100
16. Regional Differences in Resource Density of Main Financial Intermediaries, 1949	102

TABLES

17. Regional Differences in Resource Density of Main Financial Intermediaries, 1929	107
18. Establishment Density of Banking System by Region, Selected Dates, 1850-1949	110
19. Deposit Density of Banking System by Region, Selected Dates, 1850-1949	111
20. Percentage Distribution of Resources of Main Financial Intermediaries by Region, 1949	113
21. Percentage Distribution of Resources of Four Main Financial Intermediaries by Region, Selected Dates, 1850-1949	114
22. Percentage Distribution of Combined Resources of Four Main Financial Intermediaries by Region, Selected Dates, 1850-1949	115
23. Percentage Distribution of Combined Resources among Main Financial Intermediaries within Region, 1949	117
24. Percentage Distribution of Combined Resources among Four Main Financial Intermediaries within Region, 1900, 1929, and 1949	118
25. Share of New York City Institutions in Number and Resources of Main Financial Intermediaries, Selected Dates, 1850-1949	120
26. Shares of 18 Major Cities in Resources of Banks and Savings and Loan Associations, 1900, 1929, and 1949	124
27. Combined Balance Sheet of Financial Intermediaries, Benchmark Dates, 1900-1952	131
28. Percentage Increase in Balance Sheet Items of Combined Financial Intermediaries between 1900, 1929, and 1952	133
29. Percentage Distribution, Balance Sheet Items of Combined Financial Intermediaries, Benchmark Dates, 1900-1952	137
30. Percentage Distribution of Changes in Balance Sheet Items between Benchmark Dates, Combined Financial Intermediaries	141
31. Percentage Distribution of Bank Funds by Main Use, Selected Dates, 1900-1952	145
32. Business Loans Outstanding in Federal Reserve Member Banks, November 20, 1946: Percentage Distribution by Type of Business	149

TABLES

33. Notes Payable of Corporations, 1927: Percentage Distribution by Type of Business	151
34. Business Loans Outstanding in Federal Reserve Member Banks, November 20, 1946: Percentage Distribution by Size of Borrower	154
35. Bank Loans to Manufacturing and Trade Corporations: Percentage Distribution by Size of Borrower	155
36. Funds Made Available to Business by the Banking System: Percentage Distribution by Type of Investment	156
37. Business Loans Outstanding in Federal Reserve Member Banks, November 20, 1946: Percentage Distribution among Main Industries and between Corporations and Unincorporated Business Enterprises	157
38. Distribution of Business Loans Outstanding in Federal Reserve Member Banks November 20, 1946 by Size and Business of Borrower	158
39. Main Sources of Bank Funds, Selected Years, 1900-1952	159
40. Size Distribution of Bank Deposits of Households, Early 1950	162
41. Size Distribution of Deposits in Commercial and Savings Banks, 1951, and in Savings and Loan Associations, 1950	163
42. Main Uses of Insurance Funds, Selected Years, 1900-1952	167
43. Main Sources of Insurance Funds, Selected Years, 1900-1952	171
44. Main Uses of Funds of Miscellaneous Financial Intermediaries, Selected Years, 1900-1952	173
45. Combined Share of Financial Intermediaries in Financing of Main Sectors of the Economy, 1901-1949 and Subperiods	182
46. Combined Share of Financial Intermediaries in External Financing of Main Sectors of the Economy, 1901-1949 and Subperiods	184
47. Main Items in Uses-and-Sources-of-Funds Statement Segregating Relations with Financial Intermediaries	186
48. Sources of Funds of Nonfarm Households and the Amount and Share Supplied by Financial Intermediaries, 1901-1949 and Subperiods	193

TABLES

49. Shares of Financial Intermediaries in Total Nonfarm Residential Mortgages Outstanding, Benchmark Dates, 1900-1952	195
50. Shares of Financial Intermediaries in Total Non-Real-Estate Debt of Nonfarm Households, Benchmark Dates, 1900-1949	200
51. Sources of Agricultural Funds and the Amount and Share Supplied by Financial Intermediaries, 1901-1949 and Subperiods	206
52. Shares of Financial Intermediaries in Total Farm Mortgages Outstanding, Benchmark Dates, 1900-1952	210
53. Sources of Funds of Nonfinancial Corporations and the Amount and Share Supplied by Financial Intermediaries, 1901-1952 and Subperiods	222
54. Shares of Financial Intermediaries in Domestic Corporate Bonds Outstanding, Benchmark Dates, 1900-1952	224
55. Shares of Financial Intermediaries in Domestic Corporate Stock Outstanding, Benchmark Dates, 1900-1952	225
56. Railroad Bonds, 1901-1952 and Subperiods	227
57. Sources of Funds of 20 Large Railroads, 1946-1952	229
58. Public Utility Bonds, 1901-1952 and Subperiods	231
59. Sources of Funds of 36 Large Public Utilities, 1946-1952	233
60. Financing of Large Manufacturing Corporations, 1921-1952 and Subperiods	235
61. Industrial and Miscellaneous Corporate Bonds, 1901-1952 and Subperiods	237
62. Relation of Bonds, Notes and Mortgages Payable to Selected Balance Sheet Items of Corporations in Different Industries, 1949	238
63. Share of Commercial Banks in the Debt Financing of Manufacturing Corporations, 1949, by Industry	240
64. Share of Commercial Banks in Debt Financing of Retail and Wholesale Trade Corporations, 1950, by Industry	242
65. Financing Ratios of Major Industry Groups, 1927	244
66. Financing Ratios of Manufacturing Corporations, 1927, by Major Industry	245
67. Term Loans of Banks as Percentages of Major Industry Groups' Total Assets, 1941 and 1946	246

TABLES

68. Sources of Funds of Large and Other Nonfinancial Corporations, 1946-1952	248
69. Relation of Bank Credit to Liabilities and Assets of Manufacturing Corporations of Different Size, 1949	250
70. Liability Structure of Registered Manufacturing and Merchandising Corporations, 1937, by Size	251
71. Relation of Bank Credit to Liabilities and Assets in Retail Trade Corporations, 1950	253
72. Relation of Bank Credit to Liabilities and Assets in Wholesale Trade Corporations, 1950	254
73. Percentage Distribution of Long-Term Debt by Size of Issuer, 1945-1949	257
74. Sources of State and Local Government Funds, and the Amount and Share Supplied by Financial Intermediaries, 1901-1952 and Subperiods	260
75. Shares of Financial Intermediaries in State and Local Government Securities Outstanding, Benchmark Dates, 1900-1952	262
76. Sources of Funds of Federal Government, and the Amount and Share Supplied by Financial Intermediaries, 1901-1949 and Subperiods	266
77. Shares of Financial Intermediaries in Total United States Government Direct and Fully Guaranteed Securities Outstanding, Benchmark Dates, 1900-1952	269
78. Proportion of Total Assets of Main Groups of Financial Intermediaries Invested in United States Government Securities, Benchmark Dates, 1900-1952	272
79. Share of Main Holder Groups in Federal Debt, by Maturity, 1945, 1949, and 1952	276
80. Share of Financial Intermediaries in Total Assets of Households, by Type of Claim, Benchmark Dates, 1900-1949	279
81. Share of Cash and Life Insurance in Total Assets of Estates, by Size of Estate, Selected Years, 1922-1948	282
82. Share of Claims against Financial Intermediaries for Households Grouped by Size of Net Worth or Income, Early 1950	284
83. Relation of Claims against Financial Intermediaries and of Total Assets for Households, by Size of Net Worth or Income, Early 1950	285
84. Share of Claims against Financial Intermediaries in	



TABLES

Total Assets of Spending Units, by Size of Net Worth or Income and by Type of Claim, Early 1950	288
85. Share of Cash and Life Insurance in Total Assets of Estates over \$60,000, by Size of Estate, 1944	290
86. Share of Claims against Financial Intermediaries in Total Assets of Spending Units, by Occupation of Head of Unit, Early 1950	292
87. Share of Claims against Financial Intermediaries in Total Assets of Spending Units, by Age of Head of Unit, Early 1950	293
88. Share of Cash and Life Insurance in Total Assets of Estates over \$60,000, by Age of Owner at Death, 1944	293
89. Share of Financial Intermediaries in Aggregate Sources of Funds of All Other Sectors of the Economy, 1901-1949 and Subperiods	298
90. Share of Financial Intermediaries in Aggregate Sources of Funds of All Other Sectors of the Economy excluding the Federal Government, 1901-1949 and Subperiods	303
91. Saving through Financial Intermediaries as Share of Personal Saving, 1897-1949 and Subperiods	304
92. Relation of Main Forms of Saving through Financial Intermediaries to Personal Disposable Income, 1897-1949 and Subperiods	308
93. Share of Financial Intermediaries in Selected Assets, 1900, 1929, and 1952	309
94. Comparison of Combined and Consolidated Assets of Financial Intermediaries, Benchmark Dates, 1900-1952	318
95. Share of Main Groups of Financial Intermediaries in National Assets, Benchmark Dates, 1900-1952	319
96. Share of Financial Intermediaries in National Assets and Its Main Constituents, Benchmark Dates, 1900-1949	321
97. Relation of Financial Intermediaries' Assets to National Wealth and Adjusted National Wealth, Benchmark Dates, 1900-1952	324
98. Share of Financial Intermediaries in Changes in Total National Assets, Wealth and Intangible Assets, 1861-1952 and Subperiods	328
99. Share of Financial Intermediaries in National Assets, Selected Years, 1860-1900	332

TABLES

A-1.	Total Banking System	335
A-2.	Federal Reserve Banks	337
A-3.	Operating Commercial Banks	339
A-3.a.	Non-Real-Estate Loans of Operating Commercial Banks	344
A-3.b.	Percentage Distribution of Commercial Bank Holdings of Private and Foreign Notes, Bonds and Debentures	347
A-3.c.	Distribution of Demand and Time Deposits in Operating Commercial Banks	349
A-4.	Closed Commercial Banks	353
A-5.	Mutual Savings Banks	356
A-5.a.	Private Domestic and Foreign Bond Holdings of Mutual Savings Banks	360
A-6.	Postal Savings System	361
A-7.	Total Insurance Organizations	362
A-8.	Private Life Insurance Companies	364
A-9.	Fraternal Insurance Organizations	368
A-10.	Private (Noninsured) Pension Funds	371
A-11.	Government Trust Funds	373
A-12.	Fire and Marine Insurance Companies	375
A-13.	Casualty and Miscellaneous Insurance Companies	378
A-14.	Savings Bank Life Insurance Departments	381
A-15.	Miscellaneous Financial Intermediaries and Personal Trust Departments	382
A-16.	Personal Trust Funds Administered by Banks and Trust Companies	384
A-17.	Common Trust Funds	386
A-18.	Miscellaneous Financial Intermediaries	387
A-19.	Savings and Loan Associations	390
A-20.	Credit Unions	392
A-21.	Investment Companies	395
A-22.	Joint Stock Land Banks	399
A-23.	Federal Land Banks	400
A-24.	Government Lending Institutions	401
A-25.	Sales Finance Companies	404
A-26.	Personal Finance Companies	406
A-27.	Factors	408
A-28.	Total Assets of Financial Intermediaries (Tables B-1 through I-12 are given in mimeographed supplement; see pages xix and xx.)	410



## CHARTS

1. Share of Financial Intermediaries in National Assets, Intangible Assets, and Claims, Selected Dates, 1860-1952	14
2. Relation of Liabilities and Equity in Financial Intermediaries to National Assets, Benchmark Dates, 1900-1952	44
3. Appearance of Different Types of Financial Intermediaries in the United States of America, by Decades, 1800-1949	61
4. Total Assets of All Financial Intermediaries	64
5. Number of Financial Intermediaries	67
6. Growth of Assets of Financial Intermediaries between 1900 and 1952	70
7. Growth of Assets of Financial Intermediaries between 1929 and 1952	80
8. Distribution of Total Assets among Main Branches of Financial Intermediaries, Benchmark Dates, 1900-1952	83
9. Distribution of Assets of Financial Intermediaries, Benchmark Dates, 1900-1952	139
10. Distribution of Liabilities and Net Worth of Financial Intermediaries, Benchmark Dates, 1900-1952	140
11. Share of Financial Intermediaries in Financing the American Economy, Benchmark Dates, 1900-1949	300
12. Share of Net Personal Saving through Financial Intermediaries 1897-1929 and 1934-1949 by Subperiods	305
13. Share of Financial Intermediaries in Selected Assets, 1900, 1929, and 1952	310

