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CHAPTER VII

THE ROLE OF FINANCIAL INTERMEDIARIES IN FINANCING THE MAIN INVESTOR GROUPS

1. *Purpose and Scope*

The purpose of this chapter is to investigate the contribution made by financial intermediaries to financing the main sectors of the economy. This will be done primarily by measuring the proportion of funds supplied by financial intermediaries to aggregate and to external financing for the several sectors during seven periods marked by the benchmark dates 1900, 1912, 1922, 1929, 1933, 1939, 1945, and 1949, distinguishing between the main forms of financing, particularly between short- and long-term and between debt and equity financing.

The importance of the subject is obvious. The supply of funds through loans or through the purchase of securities is an essential if not the primary economic function of financial intermediaries. The role of these institutions' funds in financing different sectors of the economy can be understood only through comparison to the volume of internal financing and of external financing from other sources. The difficulties in the way of measuring the relations are great, as section 3 will indicate, partly because in comparison to the significance of the subject very little systematic and quantitative work has been done on a comprehensive scale. This chapter is based mainly on sector sources-and-uses-of-funds statements developed by *A Study of Saving* . . . , and on balance sheets of financial intermediaries prepared in the present investigation.[1] In

[1] In the absence of better figures, the funds supplied by financial intermediaries are measured as the change in their holdings of claims against, and securities of, the various groups.

Certain of the tables (Tables 48, 51, 53, 74, and 76) are based, for nonfarm households, agriculture, and federal, state, and local governments, entirely on data from *A Study of Saving* . . . , the only source in which the necessary material is available in reasonably comparable form for the entire period from 1901 to 1949, and are not perfectly comparable, as to estimated holdings of financial institutions and changes in them, with tables developed specially in this study. There are minor differences in coverage (*A Study of Saving* . . . includes bank holding companies and mortgage companies but excludes finance companies and factors); also, this study utilizes some additional information and analyzes the balance sheets of some financial intermediaries in greater detail or introduces a few refinements in estimation. It was not possible to substitute these newer figures in the tables mentioned, since short of a complete reworking of the basic material on all sources of funds, internal inconsistencies between

its basic statistics, therefore, it does not extend beyond 1949.[2] In view of the limitations encountered and of the broad scope of the field covered, which made it impossible to exhaust all potential sources of information and to explore all or even most of the important questions involved, this chapter, notwithstanding its length, must be regarded as introductory in character and tentative in its conclusions. It focuses on the share of financial intermediaries in financing each of six main sectors of the American economy, leaving the task of combining the separate sources-and-uses-of-funds statements and of examining the role of financial intermediaries in the national process of saving and investment to section 1 of Chapter IX.

2. *Summary*

The material presented in the chapter permits the following summary of tentative findings on the participation of financial intermediaries in financing the main sectors of the economy:

a. The share of financial intermediaries in total gross financing (i.e. external financing plus internal retained saving plus capital consumption allowances) is, as Table 45 shows, relatively low for all groups except the federal government. For the period as a whole it averages approximately 5 per cent for nonfarm households and agriculture, and between 12 and 15 per cent for unincorporated and corporate business and state and local governments. The very high rate for the Treasury—more than twice its total financing—reflects the large dissaving by the federal government, which necessitated borrowing well in excess of total net financing (borrowing minus dissaving).

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data on funds supplied by financial intermediaries and those supplied by other sources would have resulted. The differences between the estimates of supply of funds by financial intermediaries in this study and in *A Study of Saving . . .* are, however, rather small, with a few exceptions, particularly agriculture during the period 1946 to 1949—too small to affect any substantive conclusions that might be drawn from the figures. The tables showing the proportion of different types of assets held by financial intermediaries (Tables 49, 50, 52, 54, 55, 56, 58, 61, 75, 77 and 78), on the other hand, use the data for holdings by financial intermediaries developed in this study and, therefore, are entirely comparable with the figures used in the other chapters. The question of tying in with balance sheet data does not arise in the remaining tables.

[2] Sources-and-uses-of-funds statements for 1950 to 1952, comparable to those from *A Study of Saving . . .*, were available from other sources only for nonfinancial corporations, and could be prepared for state and local governments. The basic tables, therefore, extend through 1952 for only those two sectors, but end with 1949 in the case of the other four.

TABLE 45

Combined Share of Financial Intermediaries in Financing of Main Sectors of the Economy

(per cent)

Sector	1901 to 1912	1913 to 1922	1923 to 1929	1930 to 1933	1934 to 1939	1940 to 1945	1946 to 1949	1901 to 1949
I. *Total financing*								
1. Nonfarm households	6	5	10	−17	0	1	11	5
2. Agriculture	14	22	1	128[a]	3	−5	6	4
3. Unincorporated business	28	16	10	133[a]	−13	3	23	7
4. Nonfinancial corporations	16	12	18	422[a]	−3	3	19	12
5. State and local governments	17	22	16	27	19	−5	20	15
6. Federal government	7	137	−12	219	94	278	149	214
II. *Saving and external financing*								
1. Nonfarm households	9	7	15	636[a]	0	1	15	8
2. Agriculture	24	43	2	28[a]	5	−6	8	7
3. Unincorporated business	55	20	20	45[a]	−45	5	35	12
4. Nonfinancial corporations	24	18	29	12[a]	34[a]	6	27	23
5. State and local governments	22	28	20	65	37	−8	27	21
6. Federal government	8	145	−15	233	97	288	133	228

[a] Figures of limited significance as denominator is negative.

Source: Tables 48, 51, 53, 74, and 76. Figures for unincorporated business are very rough estimates derived from data given in *A Study of Saving . . .*, Vol. I, Tables U-3 to U-6, and Vol. III, Table W-29.

b. The ratios are substantially higher when the supply of funds by financial intermediaries is compared with only the sum of external financing and internal saving. This is for many purposes a more appropriate measure, since funds supplied by financial intermediaries are on a net basis and therefore should be compared with other net concepts such as saving rather than with a gross concept such as total internal financing. The share of financial intermediaries then averages one-fifth and one-fourth for the period as a whole in the case of nonfinancial corporations and state and local governments, but remains slightly below one-tenth for households, and is not much higher for unincorporated business enterprises.

Financial intermediaries thus supplied only the minority of funds financing asset expansion in all sectors except the federal government.

c. The share of financial intermediaries in total net financing has fluctuated considerably during the last half century. It was very small during the later thirties and World War II in all groups except the federal government.[3] In normal periods (1901 to 1929; 1946 to 1949) the share of financial intermediaries was highest (apart from the federal government) for unincorporated business, approximately one-third, and for corporations and state and local governments, about one-fourth. For all groups except the federal government the share was lower from 1946 to 1949 than in the three decades before the Great Depression, particularly in the case of agriculture and unincorporated business enterprises.

d. The picture is entirely different when attention is limited, as in Table 46, to external financing. In this field financial intermediaries have been predominant. For the period as a whole they have contributed between one-third and three-fourths of total external financing of all main groups. The share was highest for state, local, and federal governments and nonfarm households, and lowest for nonfinancial corporations and unincorporated business. These ratios give an indication of the importance of the growth of financial intermediaries and of the character of their investment policies for financing different sectors of the economy.

e. There has been a tendency, though far from regular, for the share of financial intermediaries in external financing to increase during the last half century. The ratios for 1946 to 1949 are somewhat higher than those for the three decades before the Great Depression.[4] For corporations, for instance, the share amounted to more than one-half in 1946-1949 against not much over one-third before 1930; for state and local governments, and the federal government, to three-fourths against less than one-half and approximately one-fourth respectively. We shall have to wait for figures covering a longer period after World War II before we can be reasonably certain that this increase in the share of financial intermediaries in external financing constitutes a significant structural change.

[3] The very high shares shown in Table 45 for the Great Depression reflect a more than proportional reduction of the funds supplied by financial intermediaries during the period when total net financing was negative, rather than a supply of funds in excess of total positive net financing (as for the federal government during most periods).

[4] The high values for the period 1930-1933 again reflect more than proportionate reduction in funds supplied by financial intermediaries.

TABLE 46

Combined Share of Financial Intermediaries in External Financing of Main Sectors of the Economy

(per cent)

Sector	*1901 to 1912*	*1913 to 1922*	*1923 to 1929*	*1930 to 1933*	*1934 to 1939*	*1940 to 1945*	*1946 to 1949*	*1901 to 1949*
I. *Total external financing*								
1. Nonfarm households	70	48	57	74	1	69	68	56
2. Agriculture	43	46	−15	56	−92	74	48	44
3. Unincorporated business	167	99	29	−71	106	128	136	89
4. Nonfinancial corporations	36	30	40	56	−122	16	53	37
5. State and local governments	43	43	51	67	878	28	74	74
6. Federal government	16	32	4	102	62	64	73	63
II. *Short-term external financing*[a]								
1. Nonfarm households	59	37	64	51	−25	67	29	36
2. Agriculture	51	46	42	55	41	−41	54	51
3. Unincorporated business	274	177	9	−60	83	108	356	46
4. Nonfinancial corporations	69	35	22	43	−335	16	19	19
III. *Long-term external financing*[a]								
1. Nonfarm households	81	59	53	129	317	73	90	70
2. Agriculture	58	50	−43	56	−29	103	50	69
3. Unincorporated business	79	41	34	1438	153	66	52	31
4. Nonfinancial corporations	29	26	42	26	−68	0	69	44

[a] Figure for share of financial intermediaries in short- and long-term financing of state, local, and federal governments are not given as it was not possible to segregate holdings of Treasury currency and other short-term government obligations in the asset statements of financial intermediaries.

Source: Same as Table 45.

f. The share of financial intermediaries is much higher for most sectors in long-term than in short-term financing.[5] For the period

[5] Unincorporated and nonfinancial corporate businesses are exceptions; their share is higher for short- than for long-term financing.

as a whole it averages at least 70 per cent of long-term financing for all groups except unincorporated and corporate businesses, for which it is slightly below one-half; whereas for short-term financing it is not in excess of one-half. The differences are more pronounced after World War II than before 1930, a development which is partly attributable to the increasing importance of accrued taxes which reduces the share of financial intermediaries in short-term financing. The high, increasing, and after World War II predominant, share of financial intermediaries in the long-term external financing of all major sectors of the economy, particularly in their long-term debt financing, is possibly the most interesting finding of this chapter.

3. *Problems of Measurement*

The contribution of financial intermediaries to the financing of the other groups in the economy[6] consists in supplying investors with funds, i.e. immediately effective purchasing power in the form of money. Funds may be made available as a loan involving repayment at a fixed amount (generally at or very close to the amount loaned), usually at fixed dates which may vary all the way from a few days to a century or more, and calling for payment of interest at rates stipulated in advance; or in equity form, i.e. as a rule without obligation of repayment and without payment of a stipulated rate of hire.[7]

This supply of funds does not, of course, exhaust the contribution which financial intermediaries make to the financing of investors, if that word is understood in the wider sense of financial management. In addition to supplying funds directly, financial intermediaries often assist investors in obtaining funds from other suppliers, especially by means of sales of securities through the investment banking machinery; in starting operations; in the management of their own funds; and in many other ways, e.g. by insuring them against certain risks. But the direct supply of funds is probably the most important contribution which financial intermediaries make to the financing of the economy; it is also the only field in which their contribution can be measured in quantitative terms and compared to that of other groups.

The measurement of funds supplied by financial intermediaries

[6] These groups will be designated as "investors" because it is they who are responsible for practically all investment in the sense of capital formation.

[7] Preferred stock, particularly of the cumulative type, constitutes in most respects an actual even if not a legal hybrid.

and comparison of them with total financing and with the funds provided internally or by other suppliers, if it is to be done adequately, calls for a rather detailed statement of sources and uses of funds of the various investor groups.[8] The outline of such a statement, adapted to the specific requirement of this study, is shown in Table 47.[9]

TABLE 47

Main Items in Uses-and-Sources-of-Funds Statement Segregating Relations with Financial Intermediaries

Uses	Sources
1. Expenditure on reproducible new durable tangible assets	8. Retained earnings
2. Cost of purchase of old durable tangible assets	9. Capital consumption allowances
a. From financial intermediaries	10. Proceeds from sale of old durable tangible assets
b. From others	a. To financial intermediaries
3. Cost of purchase of new intangible assets	b. To others
a. From financial intermediaries	11. Proceeds from sale of new intangible assets
b. From others	a. To financial intermediaries
4. Cost of purchase of old intangible assets[a]	b. To others
a. From financial intermediaries	12. Proceeds from sale of old intangible assets[b]
b. From others	a. To financial intermediaries
5. Accrued claims	b. To others
6. Net increase in cash	13. Accrued liabilities
7. Total uses	14. Net decrease in cash
a. Gross $(1 + 2 + 3 + 4 + 5 + 6)$	15. Total sources
b. Net $(1 + 2 - 10 + 3 - 11 + 4 - 12 + 5 - 13 + 6 - 14)$	a. Gross $(8 + 9 + 10 + 11 + 12 + 14)$
	b. Net $(8 + 9 + 10 - 2 + 11 - 3 + 12 - 4 + 13 - 5 + 14 - 6)$

[a] Includes acquisition by holders as well as retirement by issuer or debtor which should be separated.

[b] Includes sale by holders as well as repurchase or redemption by issuer or repayment by debtor.

[8] As the sources-and-uses-of-funds statement is a rather new accounting tool which has been developed essentially during the last ten to twenty years, the literature, particularly that combining economic and accounting considerations, is rather scarce. The most detailed technical treatment will be found in two unpublished documents: "Fund Flow Analysis in Economic Research," by H. H. Greenbaum, doctoral dissertation, Columbia University, 1952; and "Fund Flow Analysis: Industrial Demands upon the Money Market," by W. F. Payne, mimeo., 1952, National Bureau of Economic Research.

[9] The form of the statement shown in Table 47 should be regarded as illustrative only. In actual application the nature of the available data would, of course, call for several changes and simplifications. For example, some items (such as items in process of collection) might well be treated on a net basis—like cash in Table 47—rather than on a gross basis.

If such statements were available for the main groups of financial intermediaries and of investors, and if they were sufficiently detailed (in particular subdividing items 3, 4, 11 and 12 of Table 47 by distinguishing the major forms of intangible assets and of liabilities), it would be easy to determine the supply of funds by intermediaries to each investor group, either on a gross or on a net basis, and to compare it with supplies of funds from others and with internal funds (items 8 and 9). Actually, of course, such statements are virtually unavailable. Worse still, they cannot be derived from balance sheets alone, or even from a combination of balance sheets and income accounts, even if both were available in more detail than they usually are. Actual calculations of the share of funds supplied by financial intermediaries in the total available to the different investor groups must therefore be makeshifts, using and so modifying the available data that they approximate as far as possible the correct figures that would be shown by a detailed sources-and-uses-of-funds statement.[10]

With few exceptions estimates of the supply of funds by financial intermediaries to investors have to rely on combined balance sheets and income accounts of groups of intermediaries and investors if comprehensive figures are wanted. The three main drawbacks of these sources are:

a. Lack of sufficient detail with regard to types of assets and, still more, with respect to the identification of the groups to which the funds are made available by the different financial intermediaries. Even in the case of loans made directly by financial intermediaries to investors, the nature of the borrower's operations is seldom indicated. Where funds are made available in the form of purchases of securities the situation is better in that the character of the issuer is usually indicated, at least to the extent of distinguishing the half dozen major investor groups; but worse in that there rarely is any indication whether the securities were acquired in connection with a new issue or whether they represent open market purchases of outstanding securities.[11] Similarly, the balance sheets

[10] The annual reports of corporations filed with the Securities and Exchange Commission are one of the few generally available sources giving practically all the information necessary to devise a sources-and-uses-of-funds statement on a net basis. They have been tabulated only for the years 1935 to 1939 (cf. *Statistics of American Listed Corporations*, 1941, Part 2, particularly additions and charges to surplus in Tables 1, 2 and 4).

[11] Some of the information could be obtained for certain groups of intermediaries by a very laborious analysis of portfolio lists for successive balance sheet dates. The point is that the available combined balance sheets or other data

of the groups receiving funds from financial intermediaries often fail to separate their liabilities to such intermediaries from those to other creditors, and practically never indicate either the original purchasers or the present holders of securities issued, which are generally unknown to the issuer.

b. Lack of correspondence between classifications, both by type of assets and by investor groups, and between valuations used in published statements of financial intermediaries and in those of fund recipients. This makes it impossible, except in a few cases, to check the amount of loans to investor group A (or of securities of A) reported in the balance sheets of financial intermediaries group B against the liabilities to B reported in A's balance sheet.

c. Necessity of using (1) differences in the value of holdings of loans and securities (or of liabilities and securities outstanding) between balance sheet dates in lieu of (2) net flow of funds arising from the making and repayment of loans, the purchase and sale of other issuers' securities, and the issuance and retirement of own securities. This is probably the most serious single technical obstacle to the accurate measurement of the share of financial intermediaries in financing the different sectors of the economy, particularly in recent years when the balance sheet data available have become more abundant, more reliable and more detailed.

The nature of the difficulty will be understood if it is recalled that changes in the reported value of holdings (or outstandings) between two balance sheet dates for every type of obligation or security distinguished in the balance sheet $(H_1 - H_0)$ are the result of three separate factors:

1. The difference between cost of acquisition of securities, or making of loans, and proceeds from sale of securities, or collections of claims, $(P - S)$. This difference represents a net money-flow, both component flows occurring between the two balance sheet dates.

2. The difference between realized gains and losses on the sale of securities $(G - L)$. This again is a money-flow, but one in which in many instances one of the two components—generally the purchase of the security (or the making of the loan)—antedates the opening balance sheet date.

3. The difference between write-ups and write-downs $(U - D)$, i.e. essentially unrealized gains and losses. This is a purely accounting magnitude without corresponding money-flows.

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do not include information of this type and do not provide easy means of obtaining it.

We thus have:

$$(H_1 - H_0) = (P - S) + (G - L) + (U - D)$$

where each of the four brackets may be positive or negative. For an analysis in which exact figures are needed, it is not permissible to assume that the sum of realized capital gains and losses and of write-ups and write-downs is zero for the period under investigation, so that the change in reported holdings $(H_1 - H_0)$ can be treated as equal to the difference between acquisitions and dispositions $(P - S)$, which in turn can be taken as an adequate measure of the net supply of funds of one sector to another. Yet it is very difficult, and for many groups of financial intermediaries and of investors and for many periods almost impossible, to obtain comprehensive and reliable information on the amounts of net realized capital gains and of net valuation changes.[12] Even where data on realized and unrealized capital gains and losses are available they are, as a rule, given only in one total for all assets, or at best for all securities or all loans together; and do not provide similar information for individual types of assets, such as would be necessary to calculate net supplies of funds for these assets from the data on changes in reported holdings.

Since satisfactory estimates by which to transform the available data on changes in reported holdings into the desired figures for net acquisitions or dispositions of securities and claims by the different groups of financial intermediaries and investors are not available, and in view of the very large amount of effort needed to make even rough estimates with wide margins of error, this study adheres, though regretfully, to the still rougher though common approach of discussing the flow of funds on the basis of changes in reported holdings.

That procedure may possibly be condoned if account is taken in the analysis and interpretation of the figures of the differences between changes in reported holdings and net flows of funds, if not in explicit and quantitative terms at least implicitly. These differences are obviously of very different importance for various types of assets and liabilities, for different groups of financial intermediaries, and for different periods. Their size generally varies in proportion to asset price fluctuations. It is therefore smallest for short-

[12] An attempt was made in *A Study of Saving* . . . , particularly Volume II, Chapter VIII, to transform the data on changes in holdings into estimates of net acquisitions and dispositions with the help of scattered data and heroic assumptions which are open to considerable margins of error. Even then only aggregates for broad groups of assets could be obtained.

term obligations and largest for common stocks; and consequently relatively larger for institutions which keep a substantial proportion of their assets in stocks and corporate long-term bonds, and for periods in which asset prices have fluctuated violently. The last distinction is probably the most important one from a practical point of view, as only a few groups of financial intermediaries hold a large proportion of their assets in forms regularly subject to substantial price fluctuations. It means that all inferences on supply of funds and shares in financing drawn, as they must be, from changes in reported holdings, have to be treated with particular circumspection for the period between the benchmarks of 1929 and 1933, and with almost equal care for the periods between the 1922 and 1929 and the 1933 and 1939 benchmarks. For these periods, and particularly for the years of the Great Depression, recourse to estimates, even if very rough ones, of valuation changes which have entered into the differences in reported holdings is practically unavoidable.

4. *Nonfarm Households*

Nonfarm households make use of external financing for essentially three purposes. The first is the acquisition of durable and semidurable assets, the most important of which are houses for own occupancy, residential properties for rent, and durable and semidurable goods for household or professional use.[18] The second main purpose is the acquisition or carrying of intangible assets, primarily securities. Financing of current expenditures, which is the third main purpose, may be occasioned by a reduction of income below the accustomed standard of consumption; by unexpected expenditures, mostly those caused by illness or death; by bulky nonrepeating expenditures such as cost of children's higher education; or simply by the desire to enjoy a standard of living in excess of current income, perhaps in anticipation of future increases in income or gifts and inheritances. Tax accruals, i.e. the amount of taxes due on income earned during a period but payable after its end, have been included in the statistics of nonfarm household liabilities in order to conform to the principles of accounting, although they differ from other liabilities in not resulting from a flow of funds and, hence, for many purposes may be excluded from the consideration of nonfarm household financing.

[18] In the statistical data used, all private noncorporate investment in nonfarm residential real estate has been attributed to households, and all investment in non-farm nonresidential property to unincorporated business enterprises.

It is not always possible to allocate observed external financing for nonfarm households among the different purposes, particularly because the proceeds of financing ostensibly undertaken for one purpose may actually be used for others. Furthermore, the available statistics ignore financing of one household by another, and generally do not permit one to distinguish between financing for household and for professional use. We shall nevertheless follow broadly the classification of consumer financing by purpose as outlined above, with awareness both of fuzziness in some of the theoretical lines of demarcation and of practical difficulties in finding the statistical data which fit the theoretical concepts.

a. SHARE IN TOTAL FINANCING

From 1901 through 1949 net external financing of nonfarm households is estimated at $70 billion, i.e. borrowing of nonfarm households during the period exceeded repayments by that amount. Although large in absolute terms, this is a small figure compared to the combined income account or the balance sheet of all nonfarm households. It is equal to less than 10 per cent of total net worth of nonfarm households at the end of 1949, or to the increase in net worth since 1900; to less than one-sixth of their saving during the first half of this century; to about one-sixth of their expenditures on residential real estate and consumer durables, though to nearly one-half of net expenditures on such assets, calculating depreciation allowances on original cost basis;[14] to scarcely 2.5 per cent of total income; and to just about 3 per cent of total consumption expenditures.

So far as the statistics go, financial intermediaries have provided between one-half and three-quarters of total external financing of nonfarm households over the last half century.[15] If funds raised from other households and from other sources about which no information is on record could be included among funds supplied,

[14] The last two ratios are high in that they do not allow for that part of total external financing incurred for other purposes, but low in that they do not take account of rises in asset prices, particularly important in real estate financing.

[15] This ratio, as all figures utilized in this section, refers only to direct financing of nonfarm households by financial intermediaries; that is, to loans made directly by financial intermediaries to nonfarm households and to obligations of nonfarm households acquired from original creditors and held in the portfolios of financial intermediaries. The ratio would, of course, be higher if advances made by financial intermediaries, primarily commercial banks, to consumer finance organizations and to retailers (to enable the latter to extend credit to nonfarm households) were included.

the share of intermediaries would be somewhat lower. Even in that case, most likely it would still be over one-half for the period as a whole. Moreover, the figures used (see Table 48) treat tax accruals as a part of external financing of nonfarm households; under a different treatment the share of financial intermediaries in a comprehensive total of external financing of nonfarm households would be higher.

Approximately three-fifths of recorded external financing for nonfarm households in the period 1901 through 1949 took the form of mortgages on residential real estate. The proceeds of such mortgages are sometimes used for other purposes than to acquire or improve residential real estate.[16] On the other hand, some external funds raised in other forms, particularly by borrowing on securities or on unsecured personal notes, are actually used for financing residential properties. Hence the true share of residential real estate financing within total external financing of nonfarm households is probably not far from the indicated ratio of three-fifths. There is no question that the acquisition, holding, and improvement of residential real estate has been by far the most important single purpose for which nonfarm households require external financing.

Tax accruals have accounted for one-tenth of the statistical total of external financing by nonfarm households; and other purposes, much more difficult to disentangle statistically, for about 30 per cent. Among them the acquisition of consumer durables appears to have called for the relatively largest amounts of external funds, in the period as a whole probably for as much as 25 per cent of total external financing; funds used for current consumption seem to come next, with borrowing for the acquisition or carrying of securities of minor importance except during a few short periods.[17]

If attention is limited to total external financing and to the

[16] The treatment of loans made on vacant lots, in the statistics, is difficult. The amount of such loans, however, probably was not so large (cf. *A Study of Saving* . . . , Vol. II, Chapter IX, section 2.i) nor the share of financial intermediaries in them so different from that in all consumer financing, as to make the uncertainty a serious matter.

[17] In evaluating the relatively high shares of borrowing on securities in total external financing in the late twenties and during World War II shown in Table 48, it should be remembered that the figures for nonfarm households include unincorporated brokers and dealers in securities, which could not be segregated comprehensively and for the entire period. It is known, however, that most of the borrowing on securities during World War II was attributable to unincorporated brokers and dealers and was connected with their participation in Treasury financing.

TABLE 48

Sources of Funds of Nonfarm Households and the Amount and Share Supplied by Financial Intermediaries

Source	1901 to 1912	1913 to 1922	1923 to 1929	1930 to 1933	1934 to 1939	1940 to 1945	1946 to 1949	Total
				Amount (billions of dollars)				
1. Total sources of funds	55.7	119.4	146.6	33.2	67.3	193.7	177.9	793.9
2. Supplied by internal sources	51.1	107.7	120.4	41.0	62.6	190.8	149.9	723.5
a. Net saving	32.1	74.4	71.1	6.9	16.9	140.5	102.2	444.0
b. Capital consumption allowances	19.1	33.2	49.3	34.1	45.7	50.3	47.7	279.5
3. Supplied by external sources	4.6	11.8	26.2	−7.8	4.7	2.9	28.1	70.4
a. Notes and accounts payable	2.3	4.1	8.8	−7.3	2.4	0.5	9.3	20.1
b. Tax accruals	0.1	1.7	1.2	0.1	0.6	2.8	0.6	7.2
c. Mortgages	2.2	5.9	15.9	−2.3	0.4	1.0	18.3	41.3
d. Other	..	..	0.3	1.7	1.3	−1.5	−0.1	1.8
4. Supplied by financial intermediaries (change in holdings)	3.2	5.7	15.0	−5.8	0.1	2.0	19.2	39.3
a. Commercial bank loans, excl. mortgages	1.0	1.6	5.0	−5.2	0.7	2.5	2.2	7.9
b. Other receivables	0.5	0.6	1.6	2.4	−1.8	−1.3	0.6	2.5
c. Mortgages	1.7	3.5	8.4	−3.0	1.1	0.8	16.4	28.9
				Share (per cent)				
5. Share of financing by intermediaries								
a. Total financing	5.7	4.8	10.2	−17.4	0.1	1.0	10.8	4.9
b. External financing incl. tax accruals	69.5	48.3	57.1	74.2[a]	1.1	69.0	68.5	55.8
c. External financing excl. tax accruals	71.6	56.7	59.9	73.1[a]	1.2	3177.4[b]	70.0	62.2
d. Short-term financing	59.2	37.4	63.6	51.0[a]	−24.7	66.6	29.2	35.8
e. Long-term financing	80.9	59.1	52.8	129.1[a]	317.2[c]	73.2	89.5	69.9
f. Loan financing	69.5	48.3	57.1	74.2[a]	1.1	69.0	68.5	55.8

[a] Figures of limited significance as denominator is negative.

[b] Very high but without economic meaning because of the extremely small absolute size of external financing excluding tax accruals.

[c] Figure of limited significance as denominator is of small absolute size.

Source: *A Study of Saving . . .*, Vol. I, Table T-6 and other supplementary tables.

four- to twelve-year periods between benchmark dates, the variations in the share of financial intermediaries are not very pronounced, except in the thirties. The share averaged slightly over three-fifths between 1900 and 1933 (with a range between 45 and 75 per cent) and returned to that level after the Great Depression. When tax accruals are excluded from external financing the movements are less marked; the range is from 55 to 75 per cent. To understand these fluctuations and their differences it is necessary to look separately at the share of financial intermediaries in the main components of external financing of nonfarm households, primarily mortgages on residential real estate and short-term consumer loans.

b. SHARE IN HOME FINANCING

The share of all financial intermediaries in financing the acquisition and operation of urban residential real estate owned by nonfarm households[18] has been remarkably stable over the past fifty years, but the distribution among different types of financial intermediaries has varied greatly. These variations have resulted partly from financial intermediaries' differing rates of asset growth and partly from their differing trends in the proportion of assets held in the form of mortgages on residential real estate.

The share of financial intermediaries in financing residential real estate rose considerably between the benchmarks of 1900 and 1912, 1933 and 1939, and 1945 and 1949. It declined slightly between 1912 and 1933, and during World War II. As a result, all the net increase in the share of financing urban real estate by financial intermediaries observable during the first half of this century occurred after 1933. Even for the entire period including the further rise between 1949 and 1952, the increase in financial intermediaries' holdings of nonfarm residential mortgages was not spectacular, though certainly significant—from 67 per cent in 1900 to 90 per cent in 1952.[19] The smallness of the increase, however, is explained

[18] The figures in Table 49 relate the holdings of all mortgages on residential properties to total nonfarm mortgages outstanding; hence in this discussion residential nonfarm debt includes the relatively small proportion of debt on properties owned by corporations.

[19] Here, as in similar cases, a caution is necessary against using the difference between the aggregate share of holdings by financial intermediaries (as shown in the tables) and 100 per cent as a close measure of the share of holdings by nonfinancial owners, i.e. primarily individuals. When the calculated aggregate share of holdings by financial intermediaries approaches 100 per cent, even small differences in concepts and coverage and small errors in estimation may

TABLE 49

Shares of Financial Intermediaries in Total Nonfarm Residential Mortgages Outstanding

(per cent)

Intermediaries	*1900*	*1912*	*1922*	*1929*	*1933*	*1939*	*1945*	*1949*	*1952*
1. Commercial banks	7.0	12.8	12.3	12.0	11.3	12.0	13.8	18.8	18.1
2. Mutual savings banks	22.6	27.0	20.4	15.9	19.0	17.0	13.7	11.7	14.6
3. Private life insurance companies	6.3	9.6	7.1	10.0	11.5	11.2	15.0	18.3	22.7
4. Fraternal insurance organizations	0	0.1	0.2	0.3	0.4	0.3	0.4	0.4	0.4
5. Government trust funds	..	0	0	0.1	0.1	0.3	0.5	0.5	0.6
6. Fire and marine insurance companies	0.9	0.7	0.4	0.2	0.2	0.1	0.1	0.1	0.1
7. Casualty and misc. insurance companies	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0
8. Savings bank life insurance departments	..	0	0	0	0	0	0	0.1	0.1
9. Savings and loan associations	12.7	17.4	22.3	24.1	20.3	17.1	21.8	25.3	27.5
10. Credit unions	..	..	0	0	0	0.1	0.1	0.2	0.2
11. Investment companies	..	..	0	0.1	0.1	0.3	0.4	0.6	0.5
12. Government lending institutions	—	..	..	..	..	10.4	3.6	2.7	3.9
13. Personal trust departments	17.8	13.1	10.0	6.5	6.3	6.6	3.6	1.5	1.1
Total holdings by intermediaries	67.4	80.9	72.9	69.3	69.3	75.6	73.2	80.1	89.8
Total outstanding (billions)	$2.9	$4.9	$11.1	$27.0	$23.1	$22.7	$24.6	$45.9	$66.7

Source: Mortgage holdings of financial intermediaries from tables in Appendix A; outstandings from Table G-1 (Appendix Supplement).

by the decline in the share of urban residential mortgages held by personal trust funds administered by banks and trust companies, which in some respects are closer to individual than to institutional holdings. Without them the share of financial intermediaries in urban residential mortgages outstanding has risen markedly, from 50 per cent in 1900 to 89 per cent in 1952. Thus, financial intermediaries have always supplied the bulk of external financing required for nonfarm residential real estate.[20]

Although the share of all financial intermediaries taken together has shown a rising trend, several types of financial intermediaries supplied a considerably smaller proportion of residential real estate financing in 1952 than they did half a century earlier. The chief example is personal trust funds administered by banks and trust companies, the holdings of which are estimated, necessarily in very rough terms, to have declined almost continuously from 18 per cent of nonfarm residential mortgages outstanding in 1900 to 7 per cent in 1929 and to only 1 per cent in 1952. This was the result exclusively of a decline in the proportion of personal trust departments' assets taking the form of nonfarm residential mortgages—over one-sixth in 1900; 6 per cent in 1929; but only 1 per cent in 1952.[21] A substantial decline in the relative contribution to financing resi-

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lead to a serious under- or overstatement of the true share of other holders. The estimates of amounts outstanding, for instance, are usually expressed in terms of par or face value of the loans or securities. The data on holdings by financial intermediaries, usually taken from their balance sheets, often use a different basis of valuation, particularly in the case of securities, viz. original cost, sometimes modified by amortization of premium above par or other adjustments. These and similar discrepancies may easily amount to several per cent of total holdings and outstandings, entirely disregarding errors in estimation of either outstandings or holdings. While such errors are not likely to lead to a distortion of the trend of the share of financial intermediaries' holdings, or to a serious misstatement of their level, they may sometimes give a wrong impression of the share of noninstitutional holders when that share has become very small.

[20] The statistics may ignore some junior mortgages or classify them with other liabilities. If so, the level of financial intermediaries' share in financing nonfarm residential real estate would be slightly lower than our figures indicate. What is more significant, the increase in the share of financial intermediaries would be more pronounced, since junior liens were substantially more important up to 1929 than after the Great Depression, which wiped out many of them.

[21] That nonfarm residential mortgages held by personal trust departments constituted almost the same share in all such mortgages outstanding and in the total assets of personal trust departments is purely a coincidence, due to the fact that the asset and mortgage totals had almost exactly the same absolute values in each of the benchmark years mentioned.

dential mortgages is observable also in the case of mutual savings banks and of property insurance companies. Mutual savings banks, the more important lender of the two, in 1952 accounted for only 15 per cent of all urban residential mortgages outstanding against 16 per cent in 1929 and 23 per cent in 1900. These declines, however, were more than offset by increases in the shares of commercial banks, savings and loan associations and life insurance companies. At the turn of the century the three groups combined held slightly over one-fourth of all nonfarm residential mortgages. By 1929 their share had risen to 46 per cent. By 1952 it reached 68 per cent.[22] This was due primarily to the relatively rapid growth of their total assets. In the case of commercial banks, the increase in the share of total assets directed towards financing residential real estate (from 2 per cent in 1900 to approximately 5 per cent in 1929 and 1952) was an important contributing factor.

Government lending institutions have never financed a substantial part of urban residential mortgage debt directly. Even in 1939 their share in total mortgages outstanding was only 10 per cent, a large part of the holdings resulting from taking distressed mortgages over from institutional and individual holders. By 1952 the share of government lending institutions was down to 4 per cent since all of the portfolios acquired in the thirties held by the Home Owners' Loan Corporation had been liquidated. These figures, however, do not give a full indication of the importance of the federal government in financing nonfarm residential real estate. From the mid-thirties on an increasing proportion of urban residential mortgages, and particularly of those held by financial institutions, have been insured by the federal government. This guarantee, not generally available to noninstitutional lenders, has been a potent factor in increasing the share of financial intermediaries in financing residential real estate.[23] By the end of 1952 financial intermediaries (excluding personal trust departments and a few smaller groups) held approximately $25 billion of federally guaranteed home mortgages. These guaranteed holdings constituted well over one-third of the total home mortgage debt outstanding,

[22] If personal trust funds administered by banks and trust companies are included, the level is higher, but the increase much less spectacular—from 44 per cent in 1900 to 52 per cent in 1929 and 69 per cent in 1952.

[23] For an extensive discussion of these guarantees see *The Role of Federal Credit Aids in Private Residential Construction and Its Financing*, by Leo Grebler, National Bureau of Economic Research, Occasional Paper 39, 1953, Chapter III.

and approximately two-fifths of all home mortgages held by financial intermediaries.[24]

At the end of the period the stage was therefore reached where approximately nine-tenths of the funds required by nonfarm households to finance acquisition and holding of residential real estate—mostly their own homes—was provided by financial intermediaries,[25] and where a large part of the mortgages evidencing this financing were guaranteed in one form or another by the federal government.

While federal participation in the risk of financing residential real estate, even if not in supplying substantial funds for it, is an innovation, the high share of financial intermediaries in providing this type of financing goes back at least to the turn of the century, but it has become more pronounced over the last fifty years, particularly since the far-reaching reorganization of financing techniques and institutions in the thirties.[26] One of the most important reasons for the increasing share of residential real estate financing provided by financial intermediaries has been the progress made in standardizing loan terms, valuation procedures, and credit surveillance techniques, all of which have made it easier for financial intermediaries to make a very large number of individually small loans without prohibitive cost, and since the Great Depression without substantial losses, though aided in this respect by the strong upward trend in real estate values and federal credit insurance. A second and possibly equally important factor in increasing the predominant position of financial intermediaries in residential real

[24] The estimate of approximately $25 billion is based on the assumption that virtually all of the $11.8 billion of Federal Housing Administration guaranteed home mortgages and of the $14.6 billion of Veterans' Administration guaranteed loans are held by financial intermediaries. (Figures of institutional holdings of Federal Housing Administration loans are given in its *Annual Report*, 1952, Table 15; no similar breakdown exists for the Veterans' Administration loans.) Veterans' Administration guaranteed loans can be made by nonapproved lenders, e.g., individuals, while guarantees of the Federal Housing Administration are virtually limited to loans originally made by financial institutions.

[25] In comparing this proportion with the somewhat lower share of financial intermediaries in nonfarm mortgages made (see *ibid.*, pp. 256-258), it should be kept in mind that a substantial proportion of home mortgages in the portfolios of some financial intermediaries, particularly commercial banks and life insurance companies, are originated through other lenders, particularly mortgage banks and brokers, who in fact act as the agents of the ultimate providers of funds.

[26] On changes in techniques of urban residential mortgage financing and their significance see J. E. Morton's *Urban Mortgage Lending: Comparative Markets and Experience*, Princeton University Press for the National Bureau of Economic Research, 1956, particularly Chapter 4; see also John Lintner's *Mutual Savings Banks in the Savings and Mortgage Markets*, Harvard University, 1948, Part II.

estate financing was the growing predilection of individual savers for assets which can be liquidated at short notice without loss even if chosen at a sacrifice in yield compared to more risky investments.[27] This tendency has led to a reduction of the share of noninstitutional (and particularly individual) lending on residential real estate, and has limited it largely to purchase money mortgages and junior liens. A third powerful influence has already been alluded to, the limitation of the federal mortgage insurance to loans made by institutions. Finally, relaxation of legal restriction on real estate loans, particularly for commercial banks, has provided another stimulus.

c. SHARE IN SHORT-TERM DEBT

Residential mortgage financing is a compact field. It operates with reasonably standardized forms of credit, and is illuminated by good comprehensive current statistics, at least since the thirties. None of these characteristics applies to the financing of nonfarm households by means other than home mortgages. Here we lack benchmark information of a comprehensive and reliable character on the total volume of nonfarm households' debt and its distribution by lenders; and we possess practically no trustworthy statistics even for parts of the field for the period before 1929. Any statement about this aspect of the financing of nonfarm households which is intended to apply to the whole field—such as Table 50—must, therefore, be taken as approximative only, particularly for the first part of the period; and it is limited in essence to a rather narrow concept of household financing that excludes most intra-family and other intra-individual financing, such as the charge accounts of neighborhood stores or landlords. These limitations necessarily lead to an overstatement of the share of financial intermediaries in short-term household financing, and probably also to an overstatement of the increase in that share (or an understatement of the decrease) during the period. Notwithstanding these drawbacks, which are presently unavoidable and not likely to be remedied soon if at all, the figures point to a few important changes over the last fifty years in the role of financial intermediaries in the short-term financing of households.

[27] Urban residential first mortgages in 1949 still yielded on the average 4.5 per cent, or nearly 2 per cent more (i.e. three-quarters more) than high-grade corporate or United States government bonds, while the difference in the late twenties had amounted to only something like 1.5 per cent (or not much over one-third) of the yield on high-grade bonds.

TABLE 50

Shares of Financial Intermediaries in Total Non-Real-Estate Debt of Nonfarm Households

(per cent)

Type	*1900*	*1912*	*1922*	*1929*	*1933*	*1939*	*1945*	*1949*
				Including tax accruals				
1. Commercial banks	36.2	34.6	26.2	30.3	20.5	18.3	28.4	24.2
2. Mutual savings banks	1.5	0.9	0.4	0.3	0.1	0.1	0.1	0.2
3. Private life insurance companies	3.4	10.6	8.6	8.4	20.4	16.8	8.5	6.8
4. Fraternal insurance organizations	0	0.1	0.2	0.1	0.3	0.5	0.3	0.2
5. Government trust funds	..	..	..	0.7	8.8	0.8	0.5	0.4
6. Savings bank life insurance departments	..	0	0	0	0	0	0	0
7. Savings and loan associations	1.5	0.8	0.9	1.2	0.9	0.3	0.1	0.5
8. Credit unions	..	..	0.1	0.1	0.1	0.8	0.5	1.5
9. Investment companies	..	..	0	0	0	0.1	0	0.1
10. Sales finance companies	..	..	..	3.4	2.5	5.7	1.2	8.2
11. Personal finance companies	..	..	..	1.4	1.7	2.9	2.2	3.6
Total holdings	42.6	47.0	36.3	45.9	55.5	46.2	42.0	45.7
Total outstanding incl. tax accruals (billions)	$2.3	$4.9	$11.8	$25.5	$16.8	$17.5	$20.4	$29.6

	1900	1912	1922	1929	1933	1939	1945	1949
				Excluding tax accruals				
1. Commercial banks	46.3	39.9	32.8	35.4	26.4	24.3	43.8	32.8
2. Mutual savings banks	1.9	1.0	0.5	0.3	0.2	0.1	0.2	0.2
3. Private life insurance companies	4.3	12.2	10.8	9.8	26.3	22.4	13.1	9.2
4. Fraternal insurance organizations	0.1	0.1	0.2	0.2	0.3	0.6	0.5	0.3
5. Government trust funds	..	..	..	0.8	11.4	1.0	0.8	0.5
6. Savings bank life insurance departments	..	0	0	0	0	0	0	0
7. Savings and loan associations	1.9	0.9	1.1	1.4	1.2	0.5	0.2	0.7
8. Credit unions	..	..	0.1	0.1	0.2	1.0	0.8	2.0
9. Investment companies	..	..	0	0	0.1	0.1	0	0.1
10. Sales finance companies	..	..	..	4.0	3.2	7.6	1.9	11.2
11. Personal finance companies	..	..	..	1.6	2.2	3.9	3.4	4.9
Total holdings by intermediaries	54.5	54.1	45.6	53.5	71.4	61.5	64.7	61.9
Total outstanding excl. tax accruals (billions)	$1.8	$4.3	$9.4	$21.9	$13.0	$13.2	$13.2	$21.8

Source: Non-real-estate loans by financial intermediaries from tables in Appendix A; outstandings from *A Study of Saving . . .*, Vol. III, Table W-22, lines III 7, 8, 10 and 13.

1. The share of financial intermediaries in total short-term nonfarm household financing has shown no pronounced long-term movement if tax accruals are included, amounting at most benchmark dates to slightly less than one-half. As we may assume that the relative importance of short-term household financing not recorded in the statistics was greater in the earlier years of the century than it is now—this applies particularly to credit extended by neighborhood stores, to borrowing from loan sharks, and probably also to other intra-individual financing—it is likely that there has been a slight long-term increase in the share of financial intermediaries.

2. The upward tendency of the share of financial intermediaries is considerably clearer and more marked if two forms of short-term household financing as given in the statistics are excluded, namely tax accruals, which for reasons mentioned above might very well be regarded as not representing household financing at all, and borrowing on securities because they are undertaken primarily for investment or speculation rather than in connection with financing the acquisition of tangible assets or bridging temporary gaps between income and expenditures. In that case the share of financial intermediaries in short-term nonfarm household financing, more narrowly defined, has risen from not much over one-half in 1900 to over three-fifths in 1949. If account is taken of the aforementioned relative decline of unrecorded forms of financing, the increase in the share of financial intermediaries in short-term household financing over the past fifty years under the narrower definition would seem to have been quite substantial.

3. The participation of financial intermediaries differs greatly as between types of short-term consumer financing. It is obviously negligible in tax accruals and charge accounts. At the other extreme, loans on securities have been supplied almost exclusively by financial intermediaries except during a short period in the late twenties; and policy loans have been made either by insurance companies themselves or by commercial banks, and hence have been financed entirely by intermediaries. These special fields accounted for approximately one-fourth of total short-term nonfarm household financing, within the broader definition, throughout the period.

4. It is thus only in two fields that changes in the participation of financial intermediaries may reflect structural changes in financial organization—financing purchases of consumer durables and

providing cash loans for emergencies. We do not know enough statistically about the second field to be able to appraise changes quantitatively, particularly because intra-individual financing has always been quite important in this field. Nor can we evaluate changes in financing household acquisitions of perishables, which are not segregated in the available statistics, and where unorganized lenders such as neighborhood stores and farm landlords have played a very important and largely unrecorded role.

We are therefore limited to the financing of consumer durables, which is now quantitatively the largest field although it acquired real importance only after the twenties. The increasing importance of consumer durables within short-term household financing, of course, reflects the sharp increase in the proportion of consumer expenditures on durables and the similar increase of the share of consumer durables in nonfarm households' assets. In 1900 and 1929, for instance, holdings of consumer durables may be estimated as constituting less than 9 per cent of all assets of nonfarm households. Twenty years later, that share had risen to 11 per cent.[28] Similarly, expenditures on consumer durables represented less than 8 per cent of total consumer expenditures around the turn of the century,[29] but almost 12 per cent in 1929 and over 13 per cent in 1949.[30]

Of particular importance for the development of short-term household financing was the rise of the automobile. The family car involved a relatively large outlay, forcing many prospective buyers to resort to credit. It was bought by a large proportion of all households, and not once in a lifetime, like the previous chief objectives of consumer credit such as furniture and sewing machines, but at intervals of only a few years. It lent itself excellently to standardized credit procedures, particularly because of its resaleability in a broad market. All these characteristics made the financing of automobiles particularly suitable for large-scale operations both by old line financial intermediaries, primarily commercial banks, and by new specialized institutions, particularly finance companies.

In 1929, hardly more than a decade after its full development, installment credit already accounted for 12 per cent of total short-

[28] *A Study of Saving . . .*, Vol. III, Table W-22.

[29] Simon Kuznets, "Long-Term Changes in the National Income of the United States of America since 1870," *Income and Wealth*, Series II, Bowes and Bowes, 1952, p. 168.

[30] *National Income*, Department of Commerce, 1951 Edition, p. 150.

term credit outstanding under the broad definition, and its share rose to 25 per cent in 1939 and to almost 40 per cent in 1949. If tax accruals and loans on securities are excluded the shares are substantially higher, but the increase is equally pronounced, namely from 30 per cent in 1929 to 40 per cent in 1939 and almost 60 per cent in 1949. Not all installment credit is used to finance the purchase of consumer durables.[31] On the other hand, some single payment loans and charge accounts, particularly those of lower unit price, are actually used to buy consumer durables, as are some policy loans. It may therefore be permissible to assume that the share of financing consumer durables in total short-term household credit is at least as high as the proportion of installment credit, and to use movements in the share of financial intermediaries in installment credit as indicative of their participation in financing purchases of consumer durables by nonfarm households.

Including sales finance companies and small loan companies, the share of financial institutions in installment credit rose from 60 per cent in 1929 to almost 70 per cent in 1939 and to 80 per cent in 1949. Eliminating sales finance companies and small loan companies, the share is considerably lower, but the upward trend is more pronounced. In 1929 financial intermediaries, within the narrower definition, supplied slightly over 10 per cent of total installment credit directly (i.e., apart from their loans to sales finance and small loan companies which in turn may have enabled these organizations to finance purchases of consumer durables by households). By 1939 this share approached 30 per cent and by 1949 it was nearly 45 per cent. The share of financial intermediaries in installment credit, and hence by inference in financing the acquisition of consumer durables by households, thus shows a rising trend. The rise is almost entirely attributable to the expansion of installment credit supplied directly or indirectly by commercial banks.

5. *Agriculture*

Agriculture is a sector of the economy in whose total financing financial intermediaries have played a decreasing role; but they have supplied an increasing share of its external financing. The explanation of this apparent conflict of trends is, of course, a sharp rise in the proportion of self-financing in agriculture.

[31] The available statistics classify approximately 30 per cent of total installment credit in 1939 and 1949 as extended for purchases other than the financing of consumer durables. The figures shown in this paragraph and the next are based largely on data in the *Federal Reserve Bulletin* for 1947, p. 592, and for 1954, p. 386.

Between 1900 and 1949 agriculture is estimated to have absorbed a total of $144 billion of funds (Table 51). This, it is well to recall, is a net figure, with net absorption of funds in some periods offset by net repayments in others. Not less than $131 billion of the total may be regarded as provided internally, a figure which represents saving (including the excess of land improvement over land deterioration) plus capital consumption allowances. If depreciation is calculated on the basis of original cost, capital consumption allowances are estimated to have supplied $61 billion (or 46 per cent of internal financing and 42 per cent of total financing); saving provided the remaining $71 billion. Use of other methods of calculating capital consumption allowances would change the distribution of internal financing between saving and depreciation.[32] The total amount of internal financing and its relation to total financing, however, would remain unaltered. Of the more than $12 billion[33] of external financing, financial intermediaries supplied about $6 billion, or nearly one-half.

These broad and rough figures provide only a first impression of the participation of financial intermediaries in the financing of agriculture. For a fuller understanding and evaluation of their contribution, at least four breakdowns of the over-all figures are necessary. First, the fifty-year aggregates must be divided into shorter periods of economically reasonably homogeneous character. Secondly, the contribution made by different types of financial intermediaries must be distinguished. Thirdly, the main forms of financing must be separated. Fourthly, we must look for significant differences as among branches of agriculture, different parts of the country, and farms differing in size or other important characteristics.

The data on which this study has been based permit the first three breakdowns, at least to the extent of providing separate figures for seven subperiods, distinguishing between long- and short-term financing, and identifying the share of the main types of financial

[32] If, for instance, such allowances were calculated on the basis of replacement cost, only $59 billion or 45 per cent of internal financing would be allocated to saving, while capital consumption allowances would contribute $72 billion or 55 per cent.

[33] This figure makes rough allowance for the write-down of agricultural debt held by financial intermediaries (see *A Study of Saving* . . . , Vol. I, Table A-65). The figures in Table 51, section 4, are not adjusted for these write-downs, since they can be estimated only very roughly. They therefore understate funds supplied by financial intermediaries (or overstate the repayment of funds of financial intermediaries) by the amount of the write-downs.

TABLE 51

Sources of Agricultural Funds and the Amount and Share Supplied by Financial Intermediaries

Source	1901 to 1912	1913 to 1922	1923 to 1929	1930 to 1933	1934 to 1939	1940 to 1945	1946 to 1949	Total
	Amount (billions of dollars)							
1. Total sources of funds, excl. land costs	15.4	21.8	14.5	−2.2	13.3	36.4	32.9	132.0
Total sources of funds, incl. land costs	16.2	22.7	16.6	−1.7	15.1	41.2	33.6	143.7
2. Supplied by internal sources, excl. land costs	10.1	11.3	15.1	1.6	13.7	38.9	28.9	119.6
Supplied by internal sources, incl. land costs	10.8	12.1	17.2	2.2	15.5	43.8	29.7	131.3
a. Retained profits, excl. land costs	3.4	−0.1	4.7	−4.6	5.8	29.9	19.8	58.9
Retained profits, incl. land costs	4.1	0.8	6.8	−4.0	7.7	34.7	20.5	70.6
b. Capital consumption allowances	6.7	11.4	10.4	6.2	7.9	9.0	9.1	60.7
3. Supplied by external sources	5.4	10.6	−0.6	−3.8	−0.4	−2.5	3.9	12.4
a. Notes and accounts payable	2.1	3.4	−1.0	−2.1	0.5	−0.1	2.5	5.3
b. Tax accruals	0.1	0.3	0.1	0	−0.1	−0.1	0.2	0.6
c. Mortgages	2.0	6.4	−1.1	−1.8	−0.8	−1.9	0.7	3.6
d. Net sales of farm land	1.1	0.4	1.3	0	0	−0.5	0.4	2.9

Source	1901 to 1912	1913 to 1922	1923 to 1929	1930 to 1933	1934 to 1939	1940 to 1945	1946 to 1949	Total
4. Supplied by financial intermediaries (change in holdings)	2.3	4.9	0.1	−2.2	0.4	−1.9	1.9	5.5
a. Commercial bank loans, excl. mortgages	1.1	1.6	−0.5	−1.7	0.1	0.1	1.3	2.0
b. Other receivables	0.1	0.1	0.1	0.5	0.1	−0.1	0.2	1.0
c. Mortgages	1.2	3.2	0.5	−1.0	0.2	−1.9	0.4	2.5
	Amount (billions of dollars)							
5. Share of financing by intermediaries	*Share (per cent)*							
a. Total financing, excl. land costs	14.9	22.4	0.7	96.4[a]	2.9	−5.1	5.7	4.2
Total financing, incl. land costs	14.2	21.5	0.6	128.5[a]	2.6	−4.5	5.6	3.8
b. External financing	42.9	46.3	−15.3[a]	56.3[a]	−92.0[a]	74.2[a]	47.5	44.4
c. Short-term financing (excl. 3d)	51.1	45.8	42.2[a]	55.2[a]	40.8[b]	−41.0[a]	54.5	51.3
d. Long-term financing	58.4	49.8	−43.4[a]	56.2[a]	−29.0[a]	102.9[a]	49.5	68.8
e. Loan financing	54.6	48.3	−5.0[a]	55.7[a]	−97.0[a]	90.8[a]	53.4	58.0

[a] Figures of limited significance as denominator is negative.
[b] Figure of limited significance as denominator is of small absolute size.
Source: *A Study of Saving . . .*, Vol. I, Tables A-1 to A-66.

intermediaries in the financing of agriculture. Unfortunately it is not possible to extend the investigation to differences between regions, branches of agriculture and types of farms. Regional differences, however, will be discussed in another volume of this series.[34] No comprehensive data are available to determine trends in the contribution of financial intermediaries to financing different branches of agriculture or farms of different size. A considerable amount of relevant information could undoubtedly be extracted from data on agricultural debt in individual states, from farm management studies, and from the information on farmers provided in a number of general consumer household and expenditure surveys. An attempt to use this scattered material for over-all estimates was regarded as beyond the scope of this study.

Once the half century since 1900 is subdivided into about half a dozen economic periods, a sharp contrast appears between the first two decades on the one side and the following thirty years—or, better, the period from the early twenties to the end of World War II—on the other side. From 1900 to 1922 external sources provided approximately two-fifths of total funds used in agriculture, a rather high proportion even for a business sector and a very large one for a consumer sector. The proportion was considerably higher —almost reaching one-half—for the period 1913 to 1922, which is affected by the sharp rise in land prices and agricultural debt during and after World War I, than during the period 1901 to 1912, when the share of external financing averaged only one-third although agriculture was then still in the stage of rapid expansion. Participation of financial intermediaries in total external financing, however, did not vary much, slightly exceeding two-fifths in both periods.

From 1923 through 1945 agriculture did not on balance absorb any external funds. Indeed, repayments exceeded new financing by approximately $7.5 billion, or one-half of the net absorption during 1900-1922.[35] About one-half of the net return of funds from agriculture occurred during the Great Depression, and reflects primarily debt retirement under pressure. Similar small reductions occurred during the remainder of the twenties and thirties. The

[34] See *Capital in Agriculture: Its Formation and Financing since 1870*, by Alvin S. Tostlebe, Princeton University Press for the National Bureau of Economic Research, 1957.

[35] If the comparison is made, as it should be, after adjustment for changes in the purchasing power of money, the size of net repayments between 1923 and 1945 relative to the net absorption in the preceding two decades would be considerably lower, but would nevertheless amount to approximately one-third.

outflow of $2.5 billion of funds from 1940 to 1945, on the other hand, was a sign of farm prosperity and of restrictions on some types of spending, together resulting in the accumulation of large holdings of liquid assets in farmers' hands.

Between 1923 and 1945 financial intermediaries also on balance received funds from agriculture (without taking account of farmers' deposits in banks or other financial intermediaries which are not regarded as directly connected with the financing of agriculture) rather than supplying funds to it. The reduction, however, was essentially limited to the Great Depression and World War II; new funds approximately balanced repayments from 1923 to 1929 and from 1934 to 1939. For the entire quarter century financial intermediaries withdrew only approximately $2.5 billion (making adjustments for debt write-downs), while other sources reduced their contributions to the financing of agriculture by three times as much. As a result financial intermediaries held nearly 75 per cent of total agricultural debt at the end of World War II, against less than 50 per cent in 1922.

After World War II, use of funds in agriculture was so high that notwithstanding a high level of farm income recourse again was had to outside financing. From 1946 to 1949 the net absorption of external funds amounted to nearly $4 billion, i.e. $1 billion per year, or one-eighth of total funds used. This is considerably below the absorption of external funds during the first two decades of the century, when external financing accounted for more than two-fifths of total financing, and when its absolute volume (which averaged about $0.7 billion) was fully twice as large, taking account of changes in the price level, as in 1946-1949. The share of financial intermediaries in external financing, on the other hand, was on the same level after World War II as during the first quarter century, namely, at slightly over 40 per cent.[36]

The share of financial intermediaries differs considerably as between long-term and short-term financing. For the period as a whole financial intermediaries supplied two-thirds of the net long-term (mortgage) credit absorbed by agriculture, as Table 52 indicates. The corresponding figures for short-term financing are much

[36] Comparable figures have not been compiled for years after 1949, but the available data (*Balance Sheet of Agriculture*, Department of Agriculture, 1954) indicate that the absorption of external funds continued at the modest average annual rate of approximately $1 billion during 1950-1952, while the share of financial intermediaries in external financing was very high. The share of financial intermediaries in external financing for the seven years 1946 to 1952 is, therefore, considerably above 40 per cent, probably exceeding one-half.

TABLE 52

Shares of Financial Intermediaries in Total Farm Mortgages Outstanding

(per cent)

Intermediaries	*1900*	*1912*	*1922*	*1929*	*1933*	*1939*	*1945*	*1949*	*1952*
1. Commercial banks	5.8	13.8	13.6	9.6	9.6	8.9	10.9	16.1	14.6
2. Mutual savings banks	1.6	1.7	0.5	1.0	1.2	0.4	0.5	0.6	0.7
3. Private life insurance companies	6.2	13.2	14.8	21.8	21.0	13.3	16.3	20.4	23.9
4. Fraternal insurance organizations	..	0	0	0.2	0.2	0.2	0.3	0.4	0.5
5. Joint stock land banks	..	..	2.0	6.2	4.8	1.3	0	0	..
6. Federal land banks	..	..	6.0	12.5	16.2	31.2	21.6	15.8	15.1
7. Government lending institutions	—	..	..	..	..	11.3	8.8	4.4	3.9
8. Personal trust departments	17.7	13.1	10.0	6.5	6.2	6.7	3.6	1.6	1.1
Total holdings by intermediaries	31.4	41.9	47.1	57.7	59.3	73.4	62.2	59.4	59.9
Total outstanding (billions)	$2.3	$4.3	$10.8	$9.6	$7.7	$6.6	$4.8	$5.6	$7.1

Source: Farm mortgage holdings of financial intermediaries from tables in Appendix A; outstandings from G-1 (Appendix Supplement).

less certain, but indicate a considerably lower share for financial intermediaries, apparently in the order of one-half or slightly less.

The relative contributions of different groups of financial intermediaries to the long-term financing of agriculture have varied considerably over the last fifty years. Four main trends stand out.

The first is the increase in the share of farm mortgages held by commercial banks and life insurance companies. This expansion occurred mostly before 1929, and was responsible for almost all of the increase in the share of financial intermediaries in the first three decades of the century. During that period the share of commercial banks and life insurance companies in farm mortgage debt increased from 12 to 31 per cent, while that of all other financial intermediaries advanced only from 19 to 26 per cent. The increase was most pronounced and regular for life insurance companies, whose share in farm mortgages outstanding increased from 6 per cent at the turn of the century to 22 per cent in 1929, by which time they had become the largest single group of mortgagees. The increase in the share of commercial banks, on the other hand, was concentrated in the period between 1900 and 1912, and accompanied the rapid expansion of non-national banks (national banks were prevented from making mortgage loans until the twenties), particularly in rural areas. A substantial decline in the share of commercial banks in farm mortgage financing during the later twenties reflects partly the liquidation of numerous rural banks, and partly a marked reduction of long-term credit to agriculture by operating banks. Both commercial banks and life insurance companies considerably lowered the absolute amount of farm mortgages held between 1929 and the end of World War II. The reduction was particularly pronounced for life insurance companies: from $2.1 billion to $0.8 billion, or from 12 per cent to less than 2 per cent of their total assets. Because of the sharp decline of total farm mortgage debt the share of life insurance companies, however, declined only from 22 to 16 per cent. That of commercial banks even rose from 10 to 11 per cent, although the absolute volume of their farm mortgages was almost halved. In both cases part of the reduction in reported farm mortgage holdings represented write-downs on foreclosures or exchanges for bonds of the Federal Farm Mortgage Corporation, although most of it reflected a net withdrawal of funds from agriculture. After World War II, when the farm mortgage debt resumed its growth, both commercial banks and life insurance companies increased their share, repeating the pattern observed during

the first twenty years of the century. As a result the share of commercial banks in 1952, 15 per cent of total farm mortgage debt, was the highest recorded, and that of life insurance companies, 24 per cent, was slightly over the level of 1929 and 1933.

The second trend in farm mortgage financing is the result of the creation of the land bank system in 1917. By 1929 federal and joint stock land banks, both financed largely through the issuance of bonds purchased by the general public and to a smaller extent by other financial intermediaries, held almost one-fifth of the total farm mortgage debt. Their share further increased during the thirties as they managed, with government assistance, to expand the volume of their loans, while total farm mortgage debt declined considerably. As a result land banks in 1939 held approximately one-third of the entire farm mortgage debt, or almost as much as all other financial intermediaries together. From then on their share shrank rapidly as the joint stock land banks entered into liquidation and even the federal land banks, which were gradually transferred to private ownership in the late forties, reduced their activities. By 1952 the mortgage loans of land banks had declined to under one-half of the level of 1939 and contributed less than one-sixth of total farm mortgage debt.

The third trend, paralleling developments in many other fields, is the ascent of federal lending agencies during the thirties in this field, primarily the Federal Farm Mortgage Corporation, which was organized in 1934 to take over farm mortgage loans in distress in exchange for its own bonds. In 1939 this agency held 11 per cent of the total farm mortgage debt. Its importance declined rapidly during and after World War II as its mortgages were liquidated or taken over by other lenders. By 1952 its holdings represented less than 1 per cent of the total farm mortgage debt. However, the Farmers Home Administration, organized in 1939—apparently as a permanent part of the farm credit structure—primarily to facilitate acquisition of farms by tenants, in 1952 held an additional 4 per cent of all farm mortgages.

The decline in the share of farm mortgages held in personal trust funds administered by banks and trust companies constitutes the fourth change. At the turn of the century these trust departments, credited with almost one-fifth of the total farm mortgage debt, were the largest holder among financial intermediaries. By 1929 their share was down to less than 7 per cent, and by 1952 it had declined to approximately 1 per cent. This shrinkage was

mainly the result of the reduction of the share of total personal trust department assets invested in farm mortgages, from 14 per cent in 1900 to less than 1 per cent in 1952.

The main importance of the concentration of farm mortgages in the hands of financial intermediaries—from less than one-third in 1900 to three-fifths in 1952—probably lies, as in other fields of credit, in the standardization of loan techniques and terms, and in the extension of the original maturity of the loans. Financial institutions naturally are more inclined and better equipped to put their lending activities on a systematic basis and to employ standardized loan contracts than the scattered individual and nonfinancial business lenders who provided the bulk of farm mortgage credit until World War I. Institutional lenders also have taken advantage more rapidly of the improvements in the methods of credit analysis and of surveillance and guidance of borrowers which have been developed during the last twenty or thirty years, and particularly since the Great Depression.

The share of financial intermediaries in short-term financing of farmers is much more difficult to determine. The statistics, for example those in Table 51, show financial intermediaries to have accounted for approximately one-half of the total short-term financing of agriculture, with only minor changes over the last fifty years. Both the level and its relative stability, however, are largely the result of the crude methods of estimation which had to be used in the absence of comprehensive and reliable data on short-term borrowing of farmers from noninstitutional creditors.

The absolute amount of short-term financing of agriculture by financial intermediaries increased sharply, from $0.5 billion in 1900 to over $3 billion in 1922; shrank to $2 billion in 1933; remained at approximately that level through the end of World War II; and then rose to over $9 billion by the end of 1952 (Table 45). The movements of short-term farm financing thus were, as expected, generally more violent than the changes in the farm mortgage debt. In relation to total use of external funds in agriculture, short-term financing provided by financial intermediaries was most important in the periods following World Wars I and II. Until 1922 the share was only around one-fifth, but in the twenties it reached three-fifths. Thereafter it was about one-third, except for a very low level during the war.

Commercial banks have always supplied the bulk of institutional

short-term financing. Since the twenties, however, policy loans by life insurance companies have come to play a secondary role, and since the Great Depression loans by federal agencies or by organizations financed and sponsored by them have acquired substantial importance in this field. As a result commercial banks provided only about one-half of all short-term financing by financial intermediaries of agriculture during the 1930's, whereas they had furnished at least 85 per cent before the Great Depression. By 1952 the share of commercial banks had further declined to two-fifths if short-term loans made by government lending institutions are included, but had risen to almost three-fifths if such loans are excluded.[37]

A final source of financing is provided by the sale of farm land to nonfarmers either for continued agricultural operation or for removal from agricultural use, generally for the purpose of transformation into building lots. The funds raised by such sales can be regarded as equity financing in contrast to the debt financing represented by mortgage and short-term loans. For the entire period it is estimated roughly that agriculture raised less than $3 billion in this way, most of it during the first decade of the century and in the twenties. The figure is equivalent to about one-fifth of all external financing for the period as a whole. The relatively small amounts of external financing procured in this way reflect the fact that the proportion of farm properties owned by nonfarmers did not show a definite long-term trend over the period, so that this source was limited mostly to the sale of farm land for building lots. Financial intermediaries, of course, hardly contributed to that type of financing.

6. *Unincorporated Business*

Unincorporated enterprises are an important object of financing for at least one large group of financial intermediaries—commercial banks. Unfortunately, discussion of the share of intermediaries in the financing of unincorporated business enterprises is made particularly difficult by the scarcity of reliable data on practically every aspect of their financial operations; by the lack of detail in even the rough estimates of debt financing that can be contrived; and by the almost complete absence of estimates of equity financing. Any judgment in this field must therefore be tentative; and the statements which follow should be regarded only as approximative

[37] Based on data in Appendix A. See footnote 1 of this chapter.

and at best correctly reflecting the direction and order of magnitude of significant movements.[38]

a. Financing of unincorporated business enterprises by financial intermediaries has taken predominantly the form of short-term credits. Participation in equity financing is ruled out by the legal form in which unincorporated enterprises operate. Long-term debt financing, particularly through mortgages, would have appeared quite small but for the convention, adopted for this study, of regarding noncorporate ownership and operation of nonresidential real estate as an unincorporated business activity.

b. Only the minority of the short-term financing for the period as a whole was provided by financial intermediaries. The rough statistical estimates indicate a share of slightly less than one-half. The correct proportion is probably smaller because the estimates do not include part of the borrowing of unincorporated business enterprises from individuals and from other noninstitutional sources.

c. The relation between short-term financing by intermediaries and by trade creditors changed considerably over the period. The share of financial intermediaries apparently was considerably higher up to World War I than afterwards. Between the benchmarks of 1900 and 1922 the increase in short-term credit extended by financial intermediaries seems to have been considerably larger than that of trade accounts payable. In the twenties financing from both sources appears to have changed but little on balance. During the thirties financing by intermediaries was cut by more than one-half, while the volume of trade credit declined much less. Between 1939 and 1949 financing by intermediaries increased relatively more than trade financing. In absolute amount, financial intermediaries still furnished only approximately one-third of total short-term financing.

d. Commercial banks predominated among financial intermediaries furnishing short-term credits. None of the other groups of financial intermediaries extended substantial amounts of short-term credits to unincorporated business. Even government lending institutions contributed only relatively small amounts, as the Reconstruction Finance Corporation in practice concentrated on loans to medium-sized and larger enterprises, most of which may be assumed to operate in corporate form.

[38] The discussion is based primarily on data given in *A Study of Saving . . .*, Vol. I, Tables U-3 to U-6, and Vol. III, Table W-29. It will be recalled that ownership and operation of residential noncorporate real estate has been treated as part of household rather than unincorporated business activities.

e. Financial intermediaries probably were considerably more important in providing mortgage credit to unincorporated business enterprises (including all urban nonresidential real estate holdings in that category). An accurate statistical picture cannot be given as the balance sheets of financial intermediaries do not include a breakdown of urban nonresidential mortgage loans by form of business of borrower. From very rough estimates of this breakdown it appears, however, that over the fifty-year period approximately 30 per cent of mortgage financing of unincorporated business was supplied by financial intermediaries, and it is probable that the share increased over the period, at least after the thirties.

f. For short-term credits and mortgages together, the available data indicate that financial intermediaries provided approximately two-fifths of all debt financing of unincorporated business enterprises over the entire period. Because of the omission of some noninstitutional financing from the figures, the true share of financial intermediaries probably was not much over one-third. It appears to have been higher up to 1920 and since World War II than in the intervening twenty-five years. The explanation probably is that in periods of rapid asset expansion of unincorporated business enterprises such as occurred in the first two decades of the century and after World War II, the demand for external financing is relatively high, and has to be satisfied to a considerable extent by financial intermediaries, primarily commercial banks.[39]

g. To assess the importance of financial intermediaries within the total financing of unincorporated business enterprises is very difficult.[40] Retained earnings and net investment by proprietors together (the two cannot be separated statistically) are estimated for the period as a whole at about $33 billion.[41] This is approximately twice as large as total external financing even if allowance is made for unrecorded financing by noninstitutional sources. Since financial intermediaries provided about two-fifths of total external fi-

[39] The picture is quite different if external trade financing is measured not by the volume of accounts payable but only by the excess of trade payables over receivables. In that case there was hardly any net financing of unincorporated business enterprises by trade sources, i.e. by nonfinancial corporations. Virtually all external financing is then attributable to financial intermediaries.

[40] See *A Study of Saving* . . . , Introduction to Vol. I, section 4d; and Vol. II, Chapter XIII.

[41] The figure is calculated on the basis of depreciation allowances at original cost and includes net inventory profits. If replacement cost depreciation allowances are used and inventory profits and losses eliminated, it is decreased to about $22 billion.

nancing for the period as a whole, their share in total financing (excluding capital consumption allowances) was not much over one-tenth.

7. *Corporations*

a. SUMMARY

As the participation of financial intermediaries in the supply of funds to corporations is probably the most important of their activities, and the material, although restricted in some respects, is more plentiful than for other sectors, the reader may wish a brief summary. The findings regarding all nonfinancial corporations as a group will be set forth in subsection c; here we focus on differences in the intermediaries' role in financing corporations in different industries and of different size, and on changes in these relationships during the half century covered by the study.

1. Financial intermediaries have supplied throughout the period a large part of long-term debt and preferred stock financing of railroads and public utilities. Since these industries make little use of short-term financing, it follows that financial intermediaries have predominated in their total debt financing. The share of financial intermediaries has been considerably higher since the twenties than during the first two decades of the century. Indeed, beginning with the thirties virtually all debt financing has been supplied by financial intermediaries, and in the case of public utilities also a considerable part of equity financing. In these important industries external financing is now predominantly institutional.

2. Manufacturing corporations have relied considerably less on financial intermediaries as a source of their external or their total financing. The reason is that these corporations have provided most of their funds internally, and have raised a considerable part of external funds through the sale of common stock in which financial intermediaries did not participate to a large extent, through trade receivables, and through tax accruals. In long-term and intermediate debt financing, however, manufacturing corporations also have relied more and more on financial intermediaries. Since the thirties virtually all long-term debt financing has been provided by financial intermediaries just as for railroads and public utilities.

3. We know relatively little about the financing of corporations outside of manufacturing, railroads, and public utilities, particularly on a historical basis. At the present time short-term bank credit is of considerably greater importance for trade corporations, particularly those in wholesale trade, and for service and construc-

tion corporations, than for manufacturing, mining, railroads, and utilities.

4. Short-term bank credit is more important for small than for large corporations. On the other hand, financial intermediaries supply a larger part of long-term debt and preferred stock financing in the case of large than of small corporations. Although the net effect of these opposing tendencies is difficult to evaluate, probably the share of financial intermediaries in total external financing is somewhat higher (outside of railroads and public utilities) for small than for large corporations. It is also probable that the tendency for the share of financial intermediaries in external financing to increase with corporate size has become more pronounced during the period. Indeed before World War I there may be no correlation at all between size and the share of financial intermediaries in external financing.

5. An essential feature of the share of financial intermediaries in the supply of funds is the great variability among industries and among individual corporations within an industry, although a definite systematic influence of size on specific sources of funds and on total external financing does seem to be present.

6. Insofar as the material permits the quantitative investigation of structural changes in the role of financial intermediaries in supplying funds to corporations, two trends emerge. The first is an increase in the share of financial intermediaries in long-term debt financing, pronounced enough to be reflected in a more moderate increase in their share in external and total financing of large corporations. The second is the declining importance of short-term financing by intermediaries, primarily commercial banks, particularly for large corporations. The combined effect of these two tendencies probably has been to increase the share of financial intermediaries in supplying funds to large corporations, and to decrease their share in financing small corporations.

b. NATURE OF MATERIAL

Corporate business enterprises are of particular importance for an inquiry into the participation of financial intermediaries in financing the different sectors of the economy. First, the financing of business, and that in twentieth century America means primarily corporate enterprises, has traditionally been regarded as the main function of most financial intermediaries so far as their lending and investment activities are concerned. Secondly, business corporations

have been, except in war periods, the largest users of funds in the economy.

For a picture of the role of financial intermediaries in financing corporate business which is at the same time comprehensive and reasonably detailed, two sets of data are needed: first, sources-and-uses-of-funds statements for all corporations, and for those industrial or size groups that we want to distinguish; and second, statistics on holdings by financial intermediaries of the securities issued by the various groups of corporations. Of these data the sources-and-uses-of-funds statements, though still scarce, present the lesser difficulties. We possess since World War II fairly detailed annual aggregate sources-and-uses-of-funds statements for all nonfinancial corporations, developed by the Department of Commerce. Similar statements for 300 large corporations, divided into about a dozen industry groups, compiled by the Board of Governors of the Federal Reserve System, now go back to the late thirties. A comparable, though slightly less detailed and much more tenuous statement for all nonfinancial corporations was prepared for use in *A Study of Saving . . .*, to cover the period back to 1900 on an annual basis, and a few attempts have been made to prepare similar statements for groups of large corporations in the twenties and thirties.[42, 43] The holdings of corporate securities by financial intermediaries have been estimated in this study for nine benchmark dates, both in the aggregate and separately for railroad, public utility, and all other bonds. These materials enable us to present at least a rough sketch of the participation of financial intermediaries in the financing of nonfinancial corporations as a group throughout the last fifty years. What we unfortunately cannot do, except to a limited extent for the last few years, is to give similar pictures for individual industries or for corporations of different size. This prevents us from examining quantitatively the differences in the role of financial intermediaries in financing corporations in different industries or of different size, although we are able on the basis of scattered statistics and of the literature to make broad statements about these differences.[44] In one field there is even a good statistical basis, though

[42] See *The Financing of Large Corporations, 1920-39*, by A. R. Koch, National Bureau of Economic Research, 1943.

[43] Sources-and-uses-of-funds statements for railroads and some branches of the public utility industry are being prepared by other sectors of the Capital Formation Project, but were not available in time to be used here.

[44] There are at least three reasons why the comprehensive balance sheet statistics of the Bureau of Internal Revenue, with their rich industry and size detail, cannot be used for this purpose, namely the failure to segregate bank

only for recent years, viz. the distribution of bank credits, one of the most important sources of financing, among corporations in different industries and of different size.[45] These figures, however, cannot be tied in with financing from other sources, and hence cannot be used to assess the relative importance of bank credit financing.

In the circumstances it has been necessary to divide the discussion into two parts of different character. The first part (subsection c) is restricted to all nonfinancial corporations as a group, and is based on the sources-and-uses-of-funds statement developed by *A Study of Saving* . . . and on the estimates of holdings of corporate securities by financial intermediaries made in the present study. This part is comprehensive and quantitative in nature, although the underlying figures are rough and subject to considerable margins of error. The second part (subsections d and e) indicates probable differences in the share of financial intermediaries in financing corporations in the main industries and corporations of different size. It is based on scattered information and largely limited to the last decade or two.

c. ALL NONFINANCIAL CORPORATIONS

The historical data bearing on the participation of financial intermediaries in the supply of funds to nonfinancial corporations are of the roughest and had to be developed precariously from scattered material of differing scope and reliability, as has been indicated above. The resulting estimates, summarized in Table 53 should nevertheless be sufficient to establish the order of magnitudes involved, and to indicate major structural changes in the relationships, though not in every detail, nor reliably as to every feature.

In a summary picture for the entire period of fifty-two years, the following basic features emerge from Tables 53 to 55:

1. External financing supplied nonfinancial corporations with slightly over one-third of all funds if capital consumption allow-

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debt from other liabilities; the absence of usable information on financing through the sale of securities; and the impossibility of obtaining matching information on the holdings of corporate securities by financial intermediaries.

[45] See particularly the results of the sample survey of business loans by banks as of November 30, 1946 reported in the *Federal Reserve Bulletin*, March, May, and August 1947. Similar, though of course much less detailed, data for 1939—derived from a sample of borrowers rather than from banks—are provided in "Industry and Commercial Debt—A Balance Sheet Analysis, 1939," by Carl Kaysen (unpublished mimeographed report, National Bureau of Economic Research, Financial Research Program, July 1942).

ances (at original cost) are regarded as a source of funds; but with nearly two-thirds if internal financing is limited to corporate saving.

2. Financial intermediaries supplied approximately two-fifths of total external financing. Their contribution thus was equivalent to slightly more than one-seventh of total financing if the latter includes capital consumption allowances.

3. Most of external financing supplied by financial intermediaries took the form of purchases of corporate bonds. Bank credits (partly in the form of term loans) and mortgage loans supplied approximately one-fifth and one-seventh, respectively, of all funds raised from financial intermediaries. Equity funds constituted only a small portion—about one-sixth—of total funds supplied by financial intermediaries, but in relation to total equity financing of nonfinancial corporations the intermediaries' share was substantial, particularly in the case of preferred stock, of which about one-half was ultimately absorbed by them.

4. The importance of financial intermediaries was considerably higher for debt than for equity financing, and for long-term than for short-term debt financing. The intermediaries probably supplied not more than 11 per cent of all funds raised through sale of stock, as Table 55 shows. On the other hand they accounted for almost one-half of debt financing even if tax accruals are included. If the latter are eliminated, as not comparable to other debt financing and as important only in the last decade of the period, the share of financial intermediaries in debt financing rises to almost three-fifths. Their share in short-term debt financing is even more influenced by the treatment of tax accruals. If that item is included, financial intermediaries supplied slightly more than one-fifth of all short-term debt; if it is excluded, their share is as high as three-tenths. Both ratios are substantially lower than the share of financial intermediaries in long-term debt financing, which is close to one-half.

Turning to the changes in the structure of financing throughout the period, but disregarding the Great Depression and World War II, we find, first, that external financing has been somewhat less important since World War II in relation to internal financing than before 1929 if capital consumption allowances are regarded as part of internal financing. The decline is much more pronounced if internal financing is limited to retained earnings. In that case external financing was on the average more than twice as large as

TABLE 53

Sources of Funds of Nonfinancial Corporations and the Amount and Share Supplied by Financial Intermediaries

SOURCE	1901 TO 1912 (1)	1913 TO 1922 (2)	1923 TO 1929 (3)	1930 TO 1933 (4)	1934 TO 1939 (5)	1940 TO 1945 (6)	1946 TO 1949 (7)	1946 TO 1949 (8)	1950 TO 1952 (9)	1950 TO 1952 (10)	1901 TO 1949 (11)	1901 TO 1952 (12)
	"A Study of Saving . . ." Figures							Dept. of Commerce Figures		Financial Intermed. Figures		
	Amount (billions of dollars)											
1. Total sources of funds	40.0	76.1	86.1	−0.6	28.9	75.4	110.6	98.6	113.9	..	416.5	530.4
2. Supplied by internal sources	22.1	46.0	47.1	4.1	28.2	60.5	71.3	61.3	55.9	..	279.3	335.2
a. Retained profits	8.7	20.4	15.0	−16.7	−3.3	23.9	37.6	38.6	29.0	..	85.5	114.5
b. Capital consumption allowances	13.4	25.6	32.1	20.8	31.4	36.6	33.7	22.7	26.9	..	193.7	220.6
3. Supplied by external sources	17.9	30.1	39.0	−4.8	0.7	14.9	39.3	37.3	58.0	..	137.2	195.2
a. Borrowing	4.1	15.2	10.1	−8.8	−0.3	15.2	19.0	19.7	40.1	..	54.5	94.6
1. Notes and accounts payable	3.0	11.1	2.8	−6.4	−1.4	7.2	9.3	17.7	28.5	..	25.6	54.1
2. Tax accruals	0.2	1.5	0.9	−2.1	1.7	8.1	3.2	−0.7	9.0	..	13.6	22.6
3. Mortgages	0.8	2.6	6.4	−0.3	−0.7	0	6.5	2.7	2.6	..	15.4	18.0
b. Sale of securities	13.8	15.0	28.9	4.0	1.1	−0.3	20.2	17.6	17.9	..	82.7	100.6
1. Bonds and notes	8.2	6.5	12.2	1.2	−1.5	−3.8	12.1	12.1	10.5	..	34.9	45.4
2. Stocks	5.6	8.5	16.7	2.8	2.6	3.5	8.1	5.5	7.4	..	47.8	55.2
4. Supplied by financial intermediaries (change in holdings)	6.5	9.0	15.7	−2.7	−0.9	2.4	20.8	..	..	27.6	50.8	78.4
a. Commercial bank loans excl. mortgages	2.2	4.4	0.6	−4.4	−0.3	2.7	2.4	4.0	8.5	7.8	7.6	15.4
b. Other receivables	0	0.1	0.2	0.8	−0.8	−0.3	0	..	..	1.7	0	1.7
c. Mortgages	0.8	1.7	4.7	−0.7	−0.2	−0.3	4.2	..	..	1.4	10.1	11.5
d. Bonds	3.2	2.5	5.3	0.4	0.8	0.2	12.3	..	..	11.7	24.7	36.4
e. Stocks	0.3	0.3	4.9	1.2	−0.3	0.2	1.8	..	..	5.0	8.4	13.4

	1901 TO 1912 (1)	1913 TO 1922 (2)	1923 TO 1929 (3)	1930 TO 1933 (4)	1934 TO 1939 (5)	1940 TO 1945 (6)	1946 TO 1949 (7)	1946 TO 1949 (8)	1950 TO 1952 (9)	1950 TO 1952 (10)	1901 TO 1949 (11)	1901 TO 1952 (12)
						Share (per cent)						
5. Share of financing by intermediaries												
a. Total financing	16.2	11.8	18.2	421.6[a]	−3.0	3.2	18.8	..	..	24.2	12.2	14.8
b. External financing	36.1	29.8	40.2	55.6[a]	−121.5[b]	16.3	52.9	..	..	47.6	37.0	40.2
c. Short-term financing	68.7	35.4	21.6	42.5[a]	−334.8[b]	15.9	19.3	..	..	25.3	19.3	22.3
d. Long-term financing	28.9	25.7	42.1	25.8	−67.8	0	68.7	..	..	88.2	44.1	51.7
e. Loan financing	50.0	40.0	48.2	50.9[a]	30.1[a]	19.8	60.8	..	..	44.7	47.4	46.4
f. Equity financing incl. Retained profits	2.1	1.0	15.5	−8.8[a]	45.6[a]	0.6	4.0	..	..	13.7	6.3	7.9
Equity financing excl. Retained profits	5.4	3.5	29.5	42.9	−12.6	4.7	22.7	..	..	6.8	17.6	24.3

[a] Figures of limited significance as denominator is negative.

[b] Denominator is of small absolute size.

Source

Column	Section	
1-7	1-5	*A Study of Saving . . .*, Vol. II, derived from sources given in Table B-19 (Appendix Supplement).
8-9	1-4	*Survey of Current Business*, September 1954, p. 5.
10	4	Derived from tables in Appendix A except for line e, which is based on sum of the change in corporate stock holdings of commercial banks, mutual savings banks, private life insurance companies, fraternal organizations, private pension funds, fire and marine insurance companies, casualty and miscellaneous insurance companies, government lending institutions, and rough estimates for personal trust departments and investment companies (estimate based on four-fifths of net new issues of securities during period).
	5	Col. 10, sec. 4, divided by col. 9, secs. 1-3.
11	1-4	Sum of cols. 1 to 7.
	5	Derived from sections 1 to 4.
12	1-3	Sum of cols. 9 and 11.
	4	Sum of cols. 10 and 11.
	5	Derived from sections 1 to 4.

TABLE 54

Shares of Financial Intermediaries in Domestic Corporate Bonds Outstanding

(per cent)

Intermediaries	*1900*	*1912*	*1922*	*1929*	*1933*	*1939*	*1945*	*1949*	*1952*
1. Commercial banks	9.8	11.5	13.9	12.1	10.7	10.2	10.6	8.0	6.7
2. Mutual savings banks	6.4	5.5	5.1	5.2	5.5	4.1	3.5	5.2	4.9
3. Private life insurance companies	7.9	9.1	9.2	12.0	13.3	24.7	37.3	54.6	58.0
4. Fraternal insurance organizations	0	0.1	0.1	0.2	0.3	0.4	1.7	1.7	1.8
5. Private noninsured pension funds	..	..	0.2	0.8	1.1	1.7	3.9	7.1	8.9
6. Government trust funds	..	0	0	0	0.1	0.2	0.5	0.5	0.8
7. Fire and marine insurance companies	1.4	1.6	2.0	2.1	1.6	1.1	0.7	0.7	0.6
8. Casualty and misc. insurance companies	0.3	0.4	0.6	1.2	1.0	0.9	0.8	1.0	1.3
9. Savings bank life insurance departments	..	..	..	0	0	0	0	0	0
10. Investment companies	..	..	0.1	0.3	0.2	0.4	0.8	0.4	0.6
11. Personal trust departments	8.7	8.0	14.9	17.3	13.0	20.9	13.4	10.2	9.9
Total holdings by intermediaries	34.5	36.2	46.1	51.3	46.7	64.6	73.0	89.5	93.6[a]
Total outstanding (billions)	$6.9	$17.5	$24.2	$39.0	$38.5	$33.5	$27.0	$39.3	$50.4

[a] See text footnote 19.

Source: Corporate bond holdings of financial intermediaries from tables in Appendix A; outstandings from Table G-1 (Appendix Supplement).

TABLE 55

Shares of Financial Intermediaries in Domestic Corporate Stock Outstanding

(per cent)

Intermediaries	*1900*	*1912*	*1922*	*1929*	*1933*	*1939*	*1945*	*1949*	*1952*
1. Commercial banks	0.8	0.9	0.9	0.8	1.6	0.8	0.3	0.3	0.2
2. Mutual savings banks	0.3	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2
3. Private life insurance companies	0.5	0.3	0.1	0.2	0.9	0.7	0.8	1.3	1.3
4. Fraternal insurance organizations	..	..	..	..	0	0	0	0.1	0
5. Private noninsured pension funds	..	..	0	0.1	0.2	0.3	0.3	0.6	0.9
6. Fire and marine insurance companies	0.9	0.6	0.5	0.8	1.1	1.3	1.4	1.7	1.6
7. Casualty and misc. insurance companies	0.1	0.1	0.1	0.2	0.4	0.5	0.5	0.7	0.6
8. Savings and loan associations	..	..	..	..	0	0.1	0.1	0.1	0.2
9. Credit unions	..	..	0	0	0	0	0	0	0.1
10. Investment companies	..	..	0.1	1.5	1.6	1.5	1.6	1.9	2.6
11. Government lending institutions	—	0	0	0	0.4	1.0	0.3	0.1	0
12. Personal trust departments	4.9	7.6	11.0	8.6	12.8	16.0	14.3	15.4	12.8
Total holdings by intermediaries	7.6	9.6	12.9	12.3	19.3	22.2	19.6	22.2	20.5
Total outstanding (billions)	$12.3	$32.1	$57.1	$146.9	$62.5	$81.1	$126.2	$129.9	$195.0

Source: Corporate stock holdings of financial intermediaries from tables in Appendix A; outstandings from Table G-1 (Appendix Supplement).

internal financing between 1900 and 1929, while the two were of approximately equal size after World War II.[46]

We find, secondly—and this is more important from our point of view—that the share of financial intermediaries in total external financing has increased considerably. It averaged somewhat more than one-third between 1900 and 1929. After falling to a very low level from the Great Depression to the end of World War II, the share reached about one-half from 1946 to 1949, and 1950 to 1952, the last two periods covered in Table 53.

d. CORPORATIONS IN DIFFERENT INDUSTRIES

No comprehensive data exist for a systematic investigation of differences in the share of financial intermediaries in total or external financing of corporations in different industries for the entire period from 1900 to 1950, or even for a large part of it. We have to rely on scattered data of varying scope, detail, and quality, available for varying periods. There is no point in examining these materials one by one. We may instead limit ourselves to a few conclusions pieced together that seem at the same time significant for understanding the role of intermediaries in financing different industries and reasonably well established. It is advisable to treat separately the three main channels through which financial intermediaries have supplied funds to corporations: the extension of short-term credit, mortgage loans, and the acquisition of securities, primarily long-term bonds. Commercial banks have made use of all three channels; some of the other financial intermediaries have generally limited themselves to long-term funds, and some—like property insurance companies and private pension funds—have provided funds almost exclusively through the acquisition of securities.

1. *Railroads.* Throughout the fifty-year period, the participation of financial intermediaries in the financing of railroads has been essentially limited to the purchase of securities, particularly bonds and equipment trust certificates. Short-term credits by banks to railroads have always been small, both as a proportion of total

[46] These ratios are based on estimates of undistributed profits using original cost depreciation and not eliminating inventory profits and losses, a measurement appropriate in determining the share of different sources in total financing. If the figures for corporate saving had instead been based on replacement cost depreciation and had eliminated inventory profits and losses, as is sometimes done under the social accounting approach (e.g., in *A Study of Saving . . .*), the decline in the ratio of external to internal financing would have been less pronounced.

funds absorbed by the railroads and of total loans by banks.[47] Short-term financing by intermediaries was of some importance during World War I and in the thirties, and during those periods was provided primarily by government lending institutions.

In contrast financial intermediaries have always contributed a substantial part of the long-term debt financing of railroads, as Table 56 shows. At the turn of the century financial intermediaries held about $2 billion of railroad bonds (including equipment trust certificates), or nearly 40 per cent of the total outstanding.[48] This

TABLE 56

Railroad Bonds
(billions of dollars)

YEAR	CHANGE IN TOTAL BONDS OUTSTANDING (1)	CHANGE IN HOLDINGS OF FINANCIAL INTERMEDIARIES	
		Reported (2)	*Estimated Total* (3)
1901-1912	4.59	1.80	2.23
1913-1922	1.04	1.15	2.43
1923-1929	1.51	1.65	2.89
1930-1933	0.08	−0.23	−0.30
1934-1939	−0.56	−0.93	−1.27
1940-1945	−1.73	−0.23	−1.72
1946-1949	−0.14	0.40	0.17
1950-1952	0.07	0.64	0.90
1901-1952	4.86	4.25	5.34

Column — Source

1 Derived from figures given in Appendix Supplement, Table G-2 (1900-1939); in *The Volume of Corporate Bond Financing since 1900*, by W. B. Hickman, Princeton University Press for the National Bureau of Economic Research, 1953, p. 253 (1945, 1949); and in *Individuals' Saving: Volume and Composition*, by I. Friend and V. Natrella, Wiley & Son, 1954, pp. 232-233.

2 From Appendix A, various tables.

3 Col. 2 increased to cover intermediaries which do not report a breakdown of their corporate bond holdings, e.g. personal trust departments, private pension funds, and a few other smaller groups.

[47] "Loans and bills payable" of all Class I railroads, as reported in *Statistics of Railways*, which may be presumed to include all bank credits but also to cover other loans, amounted to only $132 million in 1922; $71 million in 1929; $239 million in 1939; and $11 million in 1949.

[48] The share is reduced to less than 30 per cent if railroad bonds in personal trust funds administered by banks and trust companies and a few other small groups for which a breakdown of their corporate bond holdings is not given are excluded.

figure, of course, does not represent exactly the share of financial intermediaries in funds raised through the sale of debt securities, or the contribution made at the time the railroads originally raised the funds, but should nevertheless provide a rough measure of financial intermediaries' share in long-term debt financing of railroads. Between 1900 and 1912 the holdings of financial intermediaries increased by nearly $2.5 billion, which is equivalent to approximately one-half of the addition to the long-term debt of the railroads.[49] While this ratio again is not an exact measure, it indicates that during this period which witnessed the last large-scale expansion of the American railroad system, a very substantial part of total debt financing was provided by financial intermediaries. The role of financial intermediaries became still more important in the next two decades. Between 1912 and 1929 the increase in the holdings by financial intermediaries (more than $5 billion including, and approximately $3 billion excluding, personal trust departments) was considerably larger than the total net long-term debt financing of railroads of $2.5 billion.

From the mid-twenties to the end of World War II there has been no net debt financing, or for that matter hardly any net financing, by railroads (for the postwar period see Table 57). Financial intermediaries have, of course, continued to acquire part of new long-term issues—most of which were for refunding purposes —either when they were first offered or through later purchases in the open market. They have also always held most of the equipment trust certificates issued by railroads, which have continued to grow in volume. They have, moreover, played an important part in the financial reorganization of many railroads during the past two decades. But on a net basis, and disregarding short-term movements, financial intermediaries have not made available any funds to railroads. Indeed, the holdings of railroad securities by financial intermediaries declined between 1929 and 1952 by nearly $0.5 billion, if nonreporting intermediaries (primarily personal trust departments) are excluded, and by as much as $2 billion if they are included. While part of these reductions reflect valuation changes rather than net sales, there is little doubt that during this period financial intermediaries actually reduced the funds which they have made available directly or indirectly to the railroads. The reduction may have been as large as, or even somewhat larger than, the

[49] Exclusion of holdings of personal trust departments and nonreporting intermediaries diminishes the share to approximately two-fifths.

TABLE 57

Sources of Funds of 20 Large Railroads
(dollars in billions)

Source	*1946 to 1949*	*1950 to 1952*	*1946 to 1952*	*1946 to 1949*	*1950 to 1952*	*1946 to 1952*
1. Total sources of funds	$1.61	$2.90	$4.51	100.0%	100.0%	100.0%
2. Supplied by internal sources	1.69	2.02	3.72	105.0	69.7	82.5
a. Retained profits	0.44	0.86	1.30	27.3	29.7	28.8
b. Capital consumption allowances	1.04	0.92	1.96	64.6	31.7	43.5
c. Other	0.21	0.25	0.46	13.0	8.6	10.2
3. Supplied by external sources	−0.08	0.87	0.79	−5.0	30.3	17.5
a. Trade payables	−0.08	0.09	0	−5.0	3.1	0
b. Bank loans, short-term	[a]	[a]	[a]	[a]	[a]	[a]
c. Bank loans, long-term	[a]	[a]	[a]	[a]	[a]	[a]
d. Accrued income taxes	−0.12	0.24	0.12	−7.5	8.3	2.6
e. Other current liabilities	−0.13	0.06	−0.06	−8.1	2.1	−1.3
f. Mortgages, bonds, other liabilities	0.08	0.41	0.49	5.0	14.1	10.8
g. Capital stock	0	0.04	0.04	0	1.4	0.9
h. Other sources	0.17	0.04	0.21	10.6	1.4	4.6

[a] Included with other short- and long-term liabilities.
Source: *Federal Reserve Bulletin*, 1949, pp. 632-633; 1950, p. 641; 1952, p. 643; 1953, p. 717; 1954, p. 819.

reduction in total railroad debt of $2 billion, which also is affected by writedowns.

Up to the twenties the railroads procured a substantial part of their external funds through the sale of stock. Financial intermediaries did not participate to a large extent in this form of financing except in the late twenties. It may be estimated most roughly that between 1900 and 1922 railroads raised almost $2 billion through sale of stock (excluding intercorporate transactions),[50] while the holdings of railroad stock by financial intermediaries (excluding personal trust departments) increased by not much over $50 million. Between 1922 and 1929, however, the holdings of financial intermediaries increased by nearly $1 billion, most of the rise being due to the advent of investment companies, while net stock issues totaled only $0.3 billion. Although part of the reported increase in holdings represents valuation changes and another part intercorporate transactions, financial intermediaries during this period probably acquired considerable amounts of outstanding railroad stock from individual holders and some newly issued stock directly or indirectly from the issuers, in both cases contributing to the equity financing of railroads.

It thus appears that financial intermediaries contributed a substantial part of the total external financing of railroads between 1900 and 1929, when the demand virtually ceased. For the period as a whole their share, based on a net supply of funds of approximately $9 billion, mostly in the form of purchases of long-term debt securities, probably was equivalent to at least three-fourths of the total external financing of railroads. The proportion in total financing was, of course, considerably lower.

2. *Public Utilities.* The financing of public utility corporations, primarily in the electric light, power, and telephone industries, has been similar to that of railroads in that short-term credits have been negligible,[51] and a large part of long-term fixed-interest funds have been supplied by financial intermediaries. The two industries, however, differ greatly in that the net demand for funds by public utilities continued throughout the period instead of ceasing in 1929.

[50] *A Study of Saving . . .* , Vol. I, Tables V-27 and V-28.

[51] In 1937, for example, notes payable of electric, gas, and water utilities registered with the Securities and Exchange Commission were equal to only 0.5 per cent of their assets (*Statistics of American Listed Corporations*, Part I, Table 64). *Statistics of Income* shows a ratio in 1949 of 1.5 per cent for the broad concept of all "bonds, notes and mortgages with an original maturity of less than one year" for electric and gas utilities.

Up to the twenties, financial intermediaries apparently supplied only the minority of the funds raised by public utilities through sale of bonds (cf. Table 58). Between 1900 and 1922 financial intermediaries, even including personal trust departments, acquired about $2 billion of public utility bonds, while the amount outstanding increased by nearly $6 billion. During the twenties financial intermediaries provided more than half the long-term bond money raised by public utilities. Their share has been still higher since the Great Depression. Between 1933 and 1952 holdings of public utility bonds by financial intermediaries went up by $12 billion, although total outstandings grew by only $8 billion. Financial intermediaries thus took over, during that period, a considerable part of the long-term debt financing formerly supplied to public utilities by noninstitutional investors. For the entire half century, the increase in holdings of public utility bonds by financial intermediaries, $18 billion, was practically equivalent to the total amount of funds raised by public utilities through the sale of bonds.[52] Even allowing for the roughness of the figures it is evident that over the last twenty years virtually all net debt financing of public utilities has been supplied by financial intermediaries.

TABLE 58

Public Utility Bonds
(billions of dollars)

YEAR	CHANGE IN TOTAL BONDS OUTSTANDING (1)	CHANGE IN HOLDINGS OF FINANCIAL INTERMEDIARIES	
		Reported (2)	*Estimated Total* (3)
1901-1912	3.73	0.72	0.92
1913-1922	2.06	0.62	1.12
1923-1929	4.42	2.32	3.75
1930-1933	1.04	0.08	0.17
1934-1939	−0.86	1.76	3.00
1940-1945	−1.31	0.94	−0.37
1946-1949	5.95	5.09	5.91
1950-1952	4.20	2.74	3.69
1901-1952	19.23	14.27	18.19

Source: Same as in Table 56.

[52] If personal trust departments are excluded the increase in holdings exceeds $14 billion, or three-quarters of the total growth in outstandings.

Financial intermediaries also played a considerable role in providing public utilities with preferred stock money, but the quantitative relationships cannot be exactly determined. By the end of 1949 life insurance companies alone held about 10 per cent of preferred stock outstanding. The total holdings of financial intermediaries, even excluding personal trust departments and a few other intermediaries, may have amounted to as much as one-fifth of all preferred stock outstanding.

There is little doubt that only a small proportion of the funds raised by public utilities through common stock has been provided by financial intermediaries, although the exact ratios are again uncertain and their fluctuations over time cannot be traced. At the end of 1949 financial intermediaries, other than personal trust departments, probably held less than $1 billion of common stock of utilities, mostly in the hands of management investment and property insurance companies, when the total market value of utility common stock was approximately $12 billion.[53]

Financial intermediaries thus have played an important role in the external financing of public utilities, particularly since the twenties. For the period 1946 through 1952 a sources-and-uses-of-funds statement is available for a large segment of the industry, the 36 companies covered in Table 59 in 1946 accounting for approximately 68 per cent of total assets of all utilities.[54] It shows that bank loans and long-term debt, almost all of which may be regarded as supplied by financial intermediaries, represented about one-half of total external financing, though less than one-third of total financing. As financial intermediaries also provided substantial amounts through purchases of preferred stock and smaller ones through common stock, their aggregate share in external financing probably approached three-fifths.

3. *Other Industries: Major Groups.* In contrast to the situation in the railroads and public utilities, a considerable part of the financing of other nonfinancial industries (a grouping which includes manufacturing, mining, trade, service and construction) has taken the form of short-term bank credit. The acquisition of bonds and debentures by financial intermediaries has also played an important role in some of these industries, though generally a lesser one than in railroads or utilities. Participation of financial intermediaries in equity financing has been small in these industries too, although not negligible for preferred stock.

[53] Appendix F, Tables F-1 and F-11.

[54] *Federal Reserve Bulletin*, June 1949, p. 630.

TABLE 59

Sources of Funds of 36 Large Public Utilities
(dollars in billions)

Source	*1946 to 1949*	*1950 to 1952*	*1946 to 1952*	*1946 to 1949*	*1950 to 1952*	*1946 to 1952*
1. Total sources of funds	$8.45	$8.06	$16.51	100.0%	100.0%	100.0%
2. Supplied by internal sources	2.81	2.99	5.80	33.3	37.1	35.1
a. Retained profits	0.43	0.61	1.04	5.1	7.6	6.3
b. Capital consumption allowances	2.06	2.05	4.11	24.4	25.4	24.9
c. Other	0.32	0.33	0.65	3.8	4.1	3.9
3. Supplied by external sources	5.64	5.07	10.71	66.7	62.9	64.9
a. Trade payables	0.19	0.18	0.37	2.2	2.2	2.2
b. Bank loans, short-term	0.21	−0.05	0.16	2.5	−0.6	1.0
c. Bank loans, long-term	0	−0.01	0	0	−0.1	0
d. Accrued income taxes	−0.09	0.58	0.49	−1.1	7.2	3.0
e. Other current liabilities	0.05	0.12	0.17	0.6	1.5	1.0
f. Mortgages, bonds, other liabilities	3.63	1.47	5.10	43.0	18.2	30.9
g. Capital stock	1.56	2.73	4.30	18.5	33.9	26.0
h. Other sources	0.08	0.06	0.13	0.9	0.7	0.8

Source: *Federal Reserve Bulletin*, 1949, p. 633; 1950, p. 641; 1952, p. 643; 1953, p. 718 and 1954, p. 819.

Here we do not have the materials for even a rough historical sketch of the share of financial intermediaries in the supply of funds such as we were able to piece together for railroads and public utilities. We are virtually limited to the period after World War II. The only sector for which some historical material is available back to the twenties consists of large manufacturing corporations. The pertinent data are summarized in Table 60.

We may first limit ourselves to the consideration of the direct participation of financial intermediaries (i.e. loans made directly to the large corporations and their new securities acquired at issuance). We then find by examining Table 60 that, possibly contrary to common impression, the reliance of large manufacturing corporations on financial intermediaries as a source of funds was considerably greater after World War II than during the twenties or thirties. In the period from 1921 to 1929 a group of 84 large manufacturing corporations (accounting for nearly one-third of the total assets of manufacturing corporations reporting to the Bureau of Internal Revenue, and for approximately one-half of those with assets of over $10 billion) reduced their indebtedness to banks; and on balance issued no bonds in the financing of which intermediaries could have participated. The aggregate net supply of funds by financial intermediaries to these corporations therefore was negative. From 1934 to 1939 net changes in bank debt were negligible. Even if it is assumed that all net new bonds issued were acquired by financial intermediaries, they would have furnished only about one-fifth of recorded external financing,[55] and less than 5 per cent of total financing.[56] After World War II, on the other hand, large manufacturing corporations borrowed on balance substantial amounts from the banks and increased their funded debt very materially. On the same assumptions (i.e., the acquisition of virtually all net new bond issues by financial intermediaries and the omission of tax accruals and some other categories of liabilities), about two-fifths of recorded external financing and well over one-tenth of total financing was supplied by financial intermediaries.

We may, however, go one step further and also consider indirect

[55] The figures of Table 60 on which this ratio is based are incomplete as they do not cover mortgages, tax accruals, and several minor types of liabilities. If allowance could be made for these sources of external financing, the share of financial intermediaries would in most periods be slightly lower than is indicated in the text.

[56] Total financing for the purposes of this calculation includes, in addition to external financing, both undistributed earnings and capital consumption allowances.

TABLE 60

Financing of Large Manufacturing Corporations

(per cent)

YEAR	TOTAL RECORDED FINANCING[a] (1)	INTERNAL FINANCING		EXTERNAL FINANCING					
		Total (2)	*Undistributed Earnings*[b] (3)	*Total* (4)	*Short-term Debt*		*Securities*		
					Total (5)	*Notes Payable* (6)	*Total* (7)	*Bonds* (8)	*Stocks* (9)
1921-1929	100	89	35	11	−7	−7	18	−1	19
1934-1939	100	81	26	19	11	0	8	4	4
1940-1945	100	84	31	16	17	4	−1	−2	0
1946-1949	100	77	39	23	8	2	16	11	5
1950-1952	100	65	30	35	23	5	12	10	2
1946-1952	100	70	34	30	16	4	14	10	3

[a] Total excludes tax accruals and several minor types of liabilities. Also excludes mortgages for 1925-1929 and 1934-1939.

[b] Net profit after taxes less dividends.

Year — Source

1921-1939 A. R. Koch, *The Financing of Large Corporations*, National Bureau of Economic Research, 1943, pp. 67, 103, 107. Based on 84 corporations.

1940-1952 *Federal Reserve Bulletin*, various issues, e.g. 1953, p. 713. Based on 199 to 202 corporations, including most of those in Koch's study.

forms of financing: the acquisition of outstanding securities by financial intermediaries from other holders, and the loans made by financial intermediaries which enabled their borrowers to acquire newly issued or outstanding securities of the selected large corporations. The first of these forms of indirect financing was of considerable importance in the thirties and forties as the share of holdings of corporate bonds by financial intermediaries in total outstandings rose greatly.[57] The second form was at its height in the late twenties, evidenced in the extraordinary expansion of bank loans on securities to the banks' own customers as well as to security brokers and dealers. These indirect forms of financing cannot be measured, since it is impossible to segregate the loans on securities made to the corporations included in the statistics of Table 60, or the acquisition of their outstanding securities by financial intermediaries. It is evident, however, that if these indirect forms of financing are taken into account they would offset much, or even all, of the reduction in bank loans shown in Table 60 for the twenties. In the thirties and forties inclusion of these indirect forms of financing would increase the share of financial intermediaries considerably beyond the proportion indicated by direct financing alone.

There is one other point—this time concerning a form of financing rather than a group of corporations—on which historical data are available, the share of financial intermediaries in supplying funds through the acquisition of bonds to nonfinancial corporations other than railroads and public utilities. Table 61 shows developments similar to those with public utility bonds. Financial intermediaries absorbed only approximately two-fifths of net bond issues from 1901 to 1922, and as little as one-fourth from 1923 to 1929 because of heavy issues of real estate bonds only very few of which were acquired by financial institutions. But since then, except in the Great Depression, they have increased their holdings of industrial and miscellaneous bonds by more than total outstandings, thus virtually pre-empting this field of financing.[58]

[57] See Table 54.

[58] Table 61 presents us with an apparent anomaly: The estimated increase in holdings by financial intermediaries over the entire period from 1901 through 1952 is in excess of total bond issues (net of redemptions) plus bonds outstanding in 1900. While the excess is not much over $2 billion (estimating the amount of industrial and miscellaneous corporate bonds outstanding at the end of 1900 at approximately $0.5 billion; Hickman, *op. cit.*, p. 255), it indicates—together with the fact that there were still small noninstitutional holdings of such bonds at the end of 1952—substantial discrepancies in coverage or errors of estimation in columns 1, 2 or 3 of Table 61 or in all of them. Specifically, either column 1

TABLE 61

Industrial and Miscellaneous Corporate Bonds
(billions of dollars)

YEAR	CHANGE IN TOTAL BONDS OUTSTANDING (1)	CHANGE IN HOLDINGS OF FINANCIAL INTERMEDIARIES	
		Reported (2)	*Estimated Total* (3)
1901-1912	2.32	0.64	0.82
1913-1922	2.97	0.75	1.27
1923-1929	8.22	1.32	2.18
1930-1933	−1.69	−1.30	−2.02
1934-1939	−4.35	0.98	1.66
1940-1945	−2.37	0.58	0.05
1946-1949	6.01	7.19	8.83
1950-1952	6.14	5.45	7.14
1901-1952	17.25	15.61	19.92

Figures include manufacturing, mining, trade, services, real estate, investment, finance and miscellaneous corporate bonds outstanding.
Source: Same as in Table 56.

4. *Other Industries: Minor Groups.* Returning to the scattered material on industries outside the railroads and public utilities and large manufacturing corporations, Tables 62 to 67 and other relevant data permit the following tentative conclusions:

(a) Short-term bank credit is at the present time of considerably greater importance, measured by its share in total assets, for trade corporations, particularly those in wholesale trade, and for service and construction corporations, than for manufacturing or for mining firms (Table 62). Its role varies greatly, however, within those broad groups. Among manufacturing industries, for instance, the share of short-term bank credit is relatively high for the food, tobacco, textiles and leather industries; and relatively low for the metal, the

is understated—it would seem by approximately $3 billion—or column 3 is overstated by the same amount, or the difference is allocable in part to each of the two columns. It is likely that differences in coverage (omission of some minor categories of bonds from column 1) and in valuation (essentially par value in column 1, book value in column 3) account for a good part of the discrepancy, and that most of it is attributable to the period from 1930 to 1939. The two main conclusions that can be drawn from Table 61—the relatively small proportion of net issues acquired by financial intermediaries up to 1929, and the acquisition by them of more than total net new issues since the mid-thirties—are not invalidated, or even seriously affected, by these defects of the figures that have to be used.

TABLE 62

Relation of Bonds, Notes and Mortgages Payable to Selected Balance Sheet Items of Corporations in Different Industries, 1949

INDUSTRY GROUP	BONDS ETC. OF LESS THAN 1 YEAR ORIGINAL MATURITY AS PERCENTAGE OF:			BONDS ETC. OF 1 YEAR OR MORE ORIGINAL MATURITY AS PERCENTAGE OF:		
	Total Assets (1)	*Total Liabilities* (2)	*Accounts Payable* (3)	*Total Assets* (4)	*Total Liabilities* (5)	*Equity* (6)
1. Manufacturing	2.5	7.6	30.6	9.9	30.0	14.3
2. Mining	3.5	10.3	53.5	13.8	40.5	18.3
3. Transportation	0.9	2.0	21.0	32.5	68.3	56.1
4. Communications	2.2	5.2	55.1	30.0	71.8	50.8
5. Electric, gas, and other utilities	1.5	2.9	75.3	41.8	79.8	85.8
6. Wholesale trade	7.4	16.4	34.3	7.0	15.6	12.0
7. Retail trade	4.4	12.2	36.8	8.2	22.8	12.1
8. Trade not allocable	6.1	15.9	39.8	7.8	20.4	11.9
9. Banks	..	..	..	..	..	..
10. Insurance carriers	..	..	..	..	..	..
11. Real estate	4.6	7.2	94.8	48.2	75.0	97.6
12. Other finance	11.1	20.8	170.1	24.1	45.2	39.7
13. Services	5.6	11.7	60.2	21.7	44.9	34.1
14. Construction	5.2	9.6	30.4	6.3	11.5	12.7
15. Agriculture	6.5	17.4	77.6	12.0	32.4	15.6
16. Not allocable	5.9	11.4	26.8	12.4	24.1	10.8
All industries	2.2	3.4	47.4	11.4	17.9	28.9

Source: Treasury Department, Release S-3079, June 20, 1952, Table 3.

petroleum and coal, and the stone, clay and glass industries (Table 63). There is an obvious correlation between the importance of short-term bank credit in financing and the share of inventories in total assets. Hence inter-industrial differences in the share of financing through short-term bank credit during much or all of the period under review were probably similar to those now observed (whatever the level of the ratios of bank credit to total assets or liabilities). In 1927, at least, the earliest year for which comprehensive data are available, the differences in the importance of short-term bank credit as a means of financing were approximately the same as in 1949, both for major industry groups (Table 65) and, though less clearly so, for manufacturing subgroups (Table 66). Two differences appear: the considerably higher level of the ratios in 1927 than in 1949; and the narrower range of inter-industrial differences in the twenties than in the late forties.

(b) Since the mid-thirties, when term loans by banks acquired importance as a form of financing, such loans have constituted a larger share of total assets in the manufacturing and service industries than for public utility or trade corporations (Table 67). The differences between broad industrial groups, however, appear to have narrowed since 1941 and 1946. Within manufacturing, the share of term loans in total assets has been above average for the oil, paper, and tobacco industries, and below it for the metal and textile industries.

(c) Neither the records of fund suppliers or recipients yield direct comprehensive data on the industrial distribution of mortgage loans made by financial intermediaries to corporations, or of the bonds and stock of nonfinancial corporations other than railroads and public utilities held by financial intermediaries[59] (except those acquired by direct placement). Thus nothing can be said with confidence about differences as between individual industries in the participation of financial intermediaries in long-term financing, outside of the railroads and public utilities.

e. CORPORATIONS OF DIFFERENT SIZE

No statement of sources and uses of funds exists for corporations of different size, nor do we have information on the distribution of

[59] Statistics of this type could be derived from available raw material for security holdings of insurance companies and investment companies. The laborious task of working them up, however, would still leave large gaps with respect to the security holdings of commercial and savings banks, private pension funds and personal trust departments, and would provide no information on the distribution of mortgage loans among financial intermediaries.

TABLE 63

Share of Commercial Banks in the Debt Financing of Manufacturing Corporations, 1949

(per cent)

INDUSTRY	SHARE OF BANK CREDIT IN TOTAL LIABILITIES			SHARE OF BANK CREDIT IN LIABILITIES EXCLUDING TAX ACCRUALS			SHARE OF SHORT-TERM BANK CREDIT IN SHORT-TERM LIABILITIES		SHARE OF LONG-TERM BANK DEBT IN LONG-TERM LIABILITIES
	Total	*Less than One Year*	*One Year and More*	*Total*	*Less than One Year*	*One Year and More*	*Incl. Tax Accruals*	*Excl. Tax Accruals*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Food	22.6	16.1	6.5	27.7	19.7	8.0	25.6	35.9	18.5
2. Tobacco manufactures	26.2	23.1	3.1	29.2	25.8	3.4	57.8	77.9	5.2
3. Textile mill products	15.7	10.5	5.2	20.0	13.4	6.6	13.9	19.5	21.8
4. Apparel and finished textiles	24.3	17.7	6.6	27.9	20.3	7.6	20.4	23.9	55.6
5. Lumber and wood products	14.8	8.9	5.9	19.1	11.5	7.6	11.7	16.5	28.1
6. Furniture and fixtures	22.1	13.0	9.1	27.2	16.0	11.2	17.4	23.4	38.3
7. Paper and allied products	17.7	4.6	13.1	22.0	5.7	16.3	8.3	12.7	30.4
8. Printing and publishing	11.0	6.9	4.1	13.0	8.1	4.9	10.6	13.7	20.5
9. Chemicals and allied products	15.5	9.5	6.0	21.0	12.8	8.2	14.5	24.0	18.8
10. Products of petroleum and coal	17.9	2.2	15.7	19.7	2.4	17.3	5.4	6.9	27.6

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11. Rubber products	8.7	4.3	4.4	10.2	5.0	5.2	9.0	12.9	8.5
12. Leather and leather products	23.6	20.5	3.1	28.2	24.4	3.8	23.0	28.3	32.0
13. Stone, clay and glass products	13.6	3.5	10.1	19.3	5.0	14.3	5.2	9.0	33.9
14. Primary nonferrous metals	10.7	4.6	6.1	13.3	5.7	7.6	8.4	13.3	13.7
15. Primary iron and steel	3.6	1.6	2.0	5.0	2.2	2.8	2.4	4.0	6.1
16. Fabricated metal products	9.2	4.6	4.6	12.4	6.2	6.2	6.1	9.3	19.8
17. Machinery	9.7	4.7	5.0	12.6	6.1	6.5	6.7	10.1	17.3
18. Electrical machinery	5.4	2.8	2.6	6.5	3.4	3.1	4.2	5.6	9.0
19. Transportation equipment	7.4	5.5	1.9	9.0	6.7	2.3	6.8	8.8	11.9
20. Motor vehicles and parts	5.9	3.4	2.5	9.2	5.3	3.9	3.9	6.6	30.2
21. Instruments, photographic and optical goods; clocks and watches	13.4	6.0	7.4	17.9	8.0	9.9	8.0	12.3	29.5
22. Misc. manufacturing including ordnance	19.1	10.8	8.3	23.2	13.1	10.1	14.2	18.5	39.8

Source: *Quarterly Financial Report*, U.S. Manufacturing Corporations, Federal Trade Commission and Securities and Exchange Commission, Fourth Quarter, 1949.

TABLE 64

Share of Commercial Banks in Debt Financing of Retail and Wholesale Trade Corporations, 1950

(per cent)

INDUSTRY	SHARE OF BANK CREDIT IN TOTAL LIABILITIES			SHARE OF BANK CREDIT IN LIABILITIES EXCLUDING TAX ACCRUALS			SHARE OF SHORT-TERM BANK CREDIT IN SHORT-TERM LIABILITIES		SHARE OF LONG-TERM BANK DEBT IN LONG-TERM LIABILITIES
	Total	*Less than One Year*	*One Year and More*	*Total*	*Less than One Year*	*One Year and More*	*Incl. Tax Accruals*	*Excl. Tax Accruals*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
I. *Retail trade*									
1. Building materials and farm equipment	21.8	19.3	2.5	24.5	21.7	2.8	23.0	26.5	21.1
2. General merchandise	11.3	5.9	5.4	15.0	7.9	7.1	7.8	11.4	25.4
3. Food	10.7	7.8	2.9	12.6	9.2	3.4	9.7	12.8	16.2
4. Automotive dealers and gas service stations	9.9	7.5	2.4	13.1	9.9	3.2	9.1	13.1	18.2
5. Apparel and accessories	10.8	7.6	3.2	12.4	8.7	3.7	9.8	11.8	16.9
6. Furniture, home furnishings and equipment	22.7	18.5	4.2	24.4	19.9	4.5	24.1	26.7	23.5
7. Eating and drinking places	9.1	4.7	4.4	9.7	5.0	4.7	6.9	7.7	19.7
8. Misc. retail stores	12.9	9.7	3.2	13.8	10.4	3.4	12.5	13.6	18.9

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
II. *Wholesale trade*									
1. Motor vehicles and automotive equipment	12.2	9.9	2.3	13.7	11.1	2.6	12.0	13.8	17.9
2. Drugs, chemicals and allied products	9.9	8.4	1.5	11.3	9.6	1.7	11.3	13.4	18.8
3. Dry goods and apparel	19.9	18.7	1.2	22.0	20.6	1.4	19.9	22.1	28.6
4. Groceries and food specialties	33.7	30.8	2.9	35.8	32.8	3.0	41.3	44.9	28.6
5. Farm products: goods for immediate consumption	17.6	14.4	3.2	19.5	15.9	3.6	17.6	20.0	21.4
6. Electrical goods	14.9	14.3	0.6	17.2	16.6	0.6	15.6	18.5	9.4
7. Hardware, plumbing and heating equipment	18.6	16.1	2.5	22.7	19.6	3.1	18.2	22.7	31.6
8. Machinery, equipment and supplies	17.6	15.3	2.3	20.3	17.7	2.6	18.0	21.3	26.3
9. Misc. merchant wholesalers	27.6	25.5	2.1	30.6	28.3	2.3	29.3	33.0	23.1

Source: *Quarterly Financial Report*, U.S. Retail and Wholesale Corporations, 1951, Federal Trade Commission and Securities and Exchange Commission.

TABLE 65

Financing Ratios of Major Industry Groups, 1927

INDUSTRY GROUP	NOTES PAYABLE AS % OF:			BONDED DEBT AND MORTGAGES AS % OF:		PREFERRED STOCK AS % OF TOTAL ASSETS	COMMON STOCK EQUITY[a] AS % OF TOTAL ASSETS
	Total Assets (1)	*Total Liabilities* (2)	*Accounts Payable* (3)	*Total Assets* (4)	*Total Liabilities* (5)	(6)	(7)
1. Manufacturing	5.8	21.5	105.1	7.3	27.4	11.2	62.1
2. Mining	4.2	14.0	111.0	7.9	26.3	5.0	65.0
3. Public utilities (including transportation)	1.8	3.6	85.3	30.8	61.0	7.4	42.0
4. Trade	13.0	35.4	107.4	4.2	11.4	9.2	54.4
5. Finance	3.4	4.4	165.6	5.4	6.9	2.0	20.2
6. Service	9.0	18.9	140.7	20.6	43.2	8.9	43.0
7. Construction	10.6	18.4	72.3	8.6	15.0	3.6	39.0
8. Agriculture	12.1	29.5	212.1	8.2	20.0	8.1	51.1
9. Not allocated	14.8	55.6	125.0	3.2	12.3	9.3	49.4
All industries	4.5	8.4	117.3	12.1	22.4	6.2	41.2

[a] Stated value of common stock plus surplus.

Source: *Statistics of Income for 1927*, pp. 372-373.

TABLE 66

Financing Ratios of Manufacturing Corporations, 1927

INDUSTRY	NOTES PAYABLE AS % OF:			BONDED DEBT AND MORTGAGES AS % OF:		PREFERRED STOCK AS % OF TOTAL ASSETS	COMMON STOCK EQUITY[a] AS % OF TOTAL ASSETS
	Total Assets	*Total Liabilities*	*Accounts Payable*	*Total Assets*	*Total Liabilities*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. Food, beverage and tobacco	7.3	31.0	118.9	9.7	41.4	14.6	56.0
2. Textiles	9.1	33.6	122.5	3.5	13.0	12.8	60.2
3. Leather	9.4	35.9	130.3	2.4	9.3	17.2	56.5
4. Rubber	4.0	10.5	33.3	15.8	41.9	16.5	45.7
5. Lumber and wood	11.6	38.3	196.0	4.2	14.0	5.5	64.1
6. Paper and pulp	4.5	15.4	96.1	12.6	43.4	10.4	60.4
7. Printing and publishing	7.8	22.2	103.6	9.3	26.5	8.7	56.4
8. Chemicals	2.6	11.2	60.0	6.4	28.0	7.1	70.0
9. Stone, clay and glass	5.0	25.2	125.8	5.6	28.6	12.5	67.9
10. Metals	4.6	17.8	100.7	7.9	31.0	11.8	62.7
11. Miscellaneous	7.2	24.5	113.6	4.6	15.8	13.8	56.9

[a] Stated value of common stock plus surplus.

Source: *Statistics of Income for 1927*, pp. 372-373.

TABLE 67

Term Loans of Banks
as Percentages of Major Industry Groups' Total Assets

Industry Group	*June 30, 1941*[a]	*November 20, 1946*[b]
1. Manufacturing and mining	1.16	2.11
a. Food, liquor and tobacco	0.95	2.82
b. Textiles, apparel and leather	0.48	1.00
c. Metals and metal products	0.67	1.86
d. Oil, coal, chemicals and rubber	1.62	2.51
e. All other manufacturing and mining	1.67	2.04
2. Wholesale trade	0.12	1.02
3. Retail trade	0.33	1.16
4. Public utilities	0.62	1.37
5. Service	0.79	2.05
6. Finance and all other corporations	0.10	0.09
All corporations	0.43	0.82

[a] Term loans of 99 banks (including those to unincorporated business) from *Term Lending to Business*, N. H. Jacoby and R. J. Saulnier, National Bureau of Economic Research, 1942, p. 54, reduced on basis of 1946 relationship to eliminate term loans to unincorporated business (term loans by these banks apparently account for approximately 68 per cent of term loans of all commercial banks; *ibid.*, p. 30). Total assets of corporations as of end of fiscal year 1940 from *Statistics of Income for 1940*, pp. 96-129.

[b] Term loans from *Federal Reserve Bulletin*, 1947, p. 504. Total assets of corporations as of end of fiscal year 1946 from *Statistics of Income for 1946*, pp. 146-79.

holdings of corporate securities by financial intermediaries classified by size of the issuer. Statistical analysis of the relation between corporate size and the share of intermediaries in financing is therefore impossible. We are limited to indirect measures such as the ratio of notes payable and bonded debts to assets or to all liabilities. Such balance sheet ratios do provide a general impression about the proportion of funds supplied by financial intermediaries, since bank debt constitutes a large proportion of notes payable, and since the share of corporate bonds held by financial intermediaries is known. It can further be assumed that a positive correlation exists between the proportion of bonds outstanding held by financial intermediaries and the size of the issuer. While such indirect indicators are valuable in the absence of more adequate information, their approximative nature and the substantial margin of error which attaches to them must be kept in mind. Even these indirect measures are, with few exceptions, available only for the last dec-

ade or two; and often they are limited to manufacturing corporations—not such a serious drawback as it might seem, since the manufacturing industries account for nearly two-thirds of the total assets of all nonfinancial corporations other than railroads and public utilities.

For nonfinancial corporations, data are available for the period after World War II which permit us to separate 300 large corporations accounting for approximately one-third of total assets from the remaining 500,000 corporations .The figures are summarized in Table 68 for the periods 1946-1949, 1946-1952, and 1950-1952.

The main difference between the two groups is the considerably lower share of bank debt and trade payables, and the higher share of stocks, in the total and the internal financing of large corporations. The share of bonds and mortgages is, rather unexpectedly, approximately equal for both groups.[60] These data, the only statistics available for all nonfinancial corporations, which segregate only the very large corporations (average assets approximately $300 million) from the aggregate of moderately large, medium-sized, and small corporations, show no marked relationship between size of firms and the share of financial intermediaries in the supply of funds. The lower share of bank credit in the financing of very large corporations is probably offset by the higher share of financial intermediaries in stock financing, particularly in the form of preferred stock, and in long-term debt financing.

Study of the relationship between methods of financing and corporate size requires a less coarse size breakdown and separate figures for the major industrial groups. The necessary data are available only for manufacturing and trade corporations. For these the following conclusions are indicated, and probably apply also to nonfinancial corporations outside of manufacturing and trade:

1. Bank credit is more important as a source of funds for small and medium-sized than for very large corporations. This is indicated in Tables 69 and 70.

Business-size differences in the share of bank credit in total assets or total liabilities are not very pronounced in Table 69, which reflects the situation of manufacturing corporations at the end of 1949. The explanation is that the proportion of term loans from

[60] This may be due to differences in the classification of liabilities for all and for the 300 large corporations, which possibly distort the picture, obtained as a residual, for corporations other than the selected 300.

TABLE 68. Sources of Funds of Large and Other Nonfinancial Corporations, 1946-1952

SOURCE	AMOUNT (BILLIONS OF DOLLARS)			SHARE (PER CENT)		
	All Non-financial Corps. (1)	*300 Large Corps.* (2)	*All Other Corps.* (3)	*All Non-financial Corps.* (4)	*300 Large Corps.* (5)	*All Other Corps.* (6)
			1946-1952			
1. Total sources of funds	212.5	74.3	138.2	100.0	100.0	100.0
2. Supplied by internal sources	117.2	43.9[a]	73.3	55.2	59.1	53.0
a. Retained profits	67.6	19.3	48.3	31.8	26.0	34.9
b. Capital consumption allowances	49.6	20.1	29.5	23.3	27.1	21.3
3. Supplied by external sources	95.3	30.3	65.0	44.8	40.8	47.0
a. Trade payables	24.3	3.3	21.0	11.4	4.4	15.2
b. Bank loans	12.5	2.1	10.4	5.9	2.8	7.5
c. Accrued income taxes	8.3	4.6	3.7	3.9	6.2	2.7
d. Other liabilities	9.4	3.8	5.6	4.4	5.1	4.1
e. Mortgages, bonds	27.9	10.5	17.4	13.1	14.1	12.6
f. Capital stock	12.9	6.0	6.9	6.1	8.1	5.0
			1946-1949			
1. Total sources of funds	98.6	33.2	65.4	100.0	100.0	100.0
2. Supplied by internal sources	61.3	21.6[b]	39.7	62.2	65.1	60.7
a. Retained profits	38.6	9.9	28.7	39.1	29.8	43.9
b. Capital consumption allowances	22.7	9.4	13.3	23.0	28.3	20.3
3. Supplied by external sources	37.3	11.5	25.8	37.8	34.6	39.4
a. Trade payables	9.2	0.9	8.3	9.3	2.7	12.7
b. Bank loans	4.0	0.6	3.4	4.1	1.8	5.2
c. Accrued income taxes	−0.7	0.4	−1.1	−0.7	1.2	−1.7
d. Other liabilities	4.5	0.9	3.6	4.6	2.7	5.5
e. Mortgages, bonds	14.8	6.1	8.7	15.0	18.4	13.3
f. Capital stock	5.5	2.6	2.9	5.6	7.8	4.4

	(1)	(2)	(3)	(4)	(5)	(6)
			1950-1952			
1. Total sources of funds	113.9	41.1	72.8	100.0	100.0	100.0
2. Supplied by internal sources	55.9	22.3[c]	33.6	49.1	54.3	46.2
a. Retained profits	29.0	9.5	19.5	25.5	23.1	26.8
b. Capital consumption allowances	26.9	10.7	16.2	23.6	26.0	22.3
3. Supplied by external sources	58.0	18.8	39.2	50.9	45.7	53.8
a. Trade payables	15.1	2.4	12.7	13.3	5.8	17.4
b. Bank loans	8.5	1.5	7.0	7.5	3.6	9.6
c. Accrued income taxes	9.0	4.2	4.8	7.9	10.2	6.6
d. Other liabilities	4.9	2.8	2.1	4.3	6.8	2.9
e. Mortgages, bonds	13.1	4.5	8.6	11.5	10.9	11.8
f. Capital stock	7.4	3.4	4.0	6.5	8.3	5.5

[a] Includes other internal sources of $4.5 billion.
[b] Includes other internal sources of $2.3 billion.
[c] Includes other internal sources of $2.1 billion.

Column — Source

1 *Survey of Current Business*, September 1954, p. 5.
2 *Federal Reserve Bulletin*, 1954, pp. 818, 820; 1953, p. 713; 1952, pp. 642-643; 1950, pp. 640-641; 1949, pp. 632-633.
3 Col. 1 minus col. 2.
4-6 Derived from cols. 1 to 3.

TABLE 69

Relation of Bank Credit to Liabilities and Assets of Manufacturing Corporations of Different Size, 1949

(per cent)

TYPE OF CREDIT	CORPORATIONS OF ALL SIZES	CORPORATIONS WITH ASSETS ($000,000) OF: *Less than ¼*	*¼ to 1*	*10 to 50*	*50 to 100*	*100 and over*
1. Share of bank credit in total liabilities	14.0	14.5	17.2	19.7	17.2	10.7
a. Credit of less than 1 year	7.2	11.1	12.3	13.3	9.3	4.0
b. Credit of 1 year and more	6.8	3.4	4.9	6.4	7.9	6.7
2. Share in liabilities excluding tax accruals	17.5	15.8	21.0	24.8	21.7	13.4
a. Credit of less than 1 year	9.0	12.0	15.0	16.7	11.8	5.0
b. Credit of 1 year and more	8.5	3.8	6.0	8.1	9.9	8.4
3. Share of short-term bank credit						
a. In total short-term liabilities	10.3	14.9	15.7	17.2	14.3	6.9
b. In short-term liabilities excluding tax accruals	16.6	16.7	20.3	23.4	21.1	10.6
4. Share of long-term bank credit in long-term liabilities	20.0	16.0	26.3	31.6	24.0	16.7
5. Proportion of short-term bank credit to other notes and accounts payable	31.2	25.8	34.0	43.8	45.1	19.3
6. Share in total assets						
a. Bank credit of less than 1 year	2.0	4.0	3.3	3.5	2.5	1.2
b. Credit of 1 year or more	1.9	1.2	1.3	1.7	2.1	1.9
c. Other long-term debt	7.7	6.4	3.8	3.6	6.8	9.6
Total assets (billions)	$109.73	$2.62	$5.81	$12.16	$34.76	$54.39

Source: Federal Trade Commission–Securities and Exchange Commission, *Quarterly Financial Report*, U.S. Manufacturing Corporations, Fourth Quarter, 1949.

TABLE 70

Liability Structure of Registered Manufacturing and Merchandising Corporations, 1937, by Size

(per cent of total assets)

ASSET SIZE OF CORPORATION	MANUFACTURING (1,034 CORPORATIONS)				MERCHANDISING (169 CORPORATIONS)			
	Notes Payable (1)	*Funded Debt*[a] (2)	*Preferred Stock* (3)	*Common Stock*[b] (4)	*Notes Payable* (5)	*Funded Debt*[a] (6)	*Preferred Stock* (7)	*Common Stock*[b] (8)
Less than $1 million	3.5	1.1	10.9	66.7	4.0	2.5	29.8	53.2
$1 to 3 million	4.0	1.9	11.4	54.1	4.5	1.6	12.8	34.0
3 to 5 million	4.7	4.5	10.1	48.6	6.2	0.6	19.8	44.2
5 to 10 million	4.1	5.1	12.7	48.8	3.4	2.9	23.6	43.7
10 to 20 million	3.4	5.2	12.5	48.0	4.0	2.8	17.1	33.1
20 to 50 million	3.2	6.2	11.9	47.7	4.8	3.5	14.2	32.2
50 to 100 million	2.8	6.7	15.6	41.4	0.1	7.1	14.7	39.6
100 to 200 million	2.5	7.6	16.7	45.4	..	..	..	44.1
200 to 500 million	1.6	10.9	9.8	47.7	..	1.4	..	58.0
Over 500 million	0.8	5.9	8.1	50.3	..	..	..	..
Corporations of all sizes	2.1	7.0	11.5	47.7	2.0	3.4	11.5	42.7

[a] Excludes funded debt maturing within one year.

[b] Stated value plus capital surplus.

Source: *Statistics of American Listed Corporations*, Securities and Exchange Commission, Part 1 (1940), Table 64.

banks (i.e. credits with an original maturity of more than one year) increases with the size of the corporation, while the share of short-term bank credit decreases, the two movements nearly offsetting each other except for very large corporations. For these the proportion of total bank credit is definitely lower than for all other groups. Since term loans by banks represent essentially a new development originating in the mid-thirties, one might expect that at earlier dates the share of bank credit declined more regularly with increasing size of corporation.

Table 70, based on the balance sheets for 1937 of manufacturing and trading corporations registered with the Securities and Exchange Commission, lends some corroboration to this surmise. Notes payable (which, it should be recalled, include various liabilities in addition to bank borrowing) are definitely higher in relation to either total assets or total liabilities for small than for large corporations. The ratio is highest, however, not for the smallest corporations but for those of medium size ($1 to $10 million total assets). This irregularity may be due to the fact that the sample is not adequate for very small corporations. Unfortunately no comparable data are available for any date before the Great Depression, but there is no reason to doubt that the inverse correlation between corporate size and share of bank credit was also present then. Indeed, the difference between the share of bank debt in large and in small corporations may well have been larger before than after the Great Depression, since it is known that the ratio of bank credit to total assets and liabilities of all nonfinancial corporations other than railroads and public utilities was higher in the first three decades of the century than in the thirties and forties,[61] and that large corporations made relatively little use of bank credit, at least in the twenties.[62]

The relation between business size and the use of funds provided by financial intermediaries is shown for trade corporations in Tables 71 and 72 for 1950 (data for 1949 being unavailable). As in the case of manufacturing, the share of total bank credit in total liabilities

[61] The share of notes payable in total assets of all manufacturing corporations in 1927 was nearly 6 per cent (Table 65), compared to 2 per cent in 1937 (Table 70; corporations registered with Securities and Exchange Commission) and 4 per cent in 1949 (Table 69; all manufacturing corporations). See also *A Study of Saving . . .*, Vol. III, Table W-31.

[62] In Koch's sample of large manufacturing corporations (*op. cit.*, p. 67) notes payable in the mid-twenties amounted to only about 1 per cent of total assets. This is considerably less than the comparable ratio for 1937 (Table 70), and still more below the ratio for 1949 (Table 69).

TABLE 71

Relation of Bank Credit to Liabilities and Assets in Retail Trade Corporations, 1950

(per cent)

TYPE OF CREDIT	CORPORATIONS OF ALL SIZES	CORPORATIONS WITH ASSETS ($000,000) OF:						
		Less than ¼	*¼ to 1*	*1 to 5*	*5 to 10*	*10 to 50*	*50 to 100*	*100 and over*
1. Share of bank credit in total liabilities	13.1	13.3	14.2	17.1	20.4	15.2	11.3	5.3
a. Credit of less than 1 year	9.4	10.1	11.2	13.2	13.0	8.7	8.7	2.9
b. Credit of 1 year and more	3.7	3.2	3.0	3.9	7.4	6.5	2.6	2.4
2. Share in liabilities excluding tax accruals	15.6	14.4	16.9	20.4	23.8	18.0	13.6	7.6
a. Credit of less than 1 year	11.2	11.0	13.3	15.8	15.2	10.3	10.5	4.1
b. Credit of 1 year and more	4.4	3.4	3.6	4.6	8.6	7.7	3.1	3.5
3. Share of short-term bank credit								
a. In total short-term liabilities	11.9	12.8	13.9	16.6	17.6	13.1	12.6	3.4
b. In total short-term liabilities, excluding tax accruals	15.1	14.3	17.2	20.9	21.9	17.3	16.8	5.2
4. Share of long-term bank credit in long-term liabilities	17.0	15.0	15.7	18.9	28.0	19.1	8.2	17.0
5. Proportion of short-term bank credit to other notes and accounts payable	23.0	19.7	25.7	33.3	37.9	31.0	28.3	8.3
6. Share in total assets								
a. Bank credit of less than 1 year	3.4	3.9	4.1	4.7	5.0	3.1	3.2	0.9
b. Bank credit of 1 year and more	1.3	1.2	1.1	1.4	2.8	2.3	0.9	0.8
c. Other long-term debt	5.0	4.5	4.1	4.5	5.9	8.6	9.0	3.6
Total assets (billions)	$23.55	$5.87	$4.76	$3.31	$1.06	$2.75	$1.06	$4.73

TABLE 72

Relation of Bank Credit to Liabilities and Assets in Wholesale Trade Corporations, 1950

(per cent)

TYPE OF CREDIT	CORPORATIONS OF ALL SIZES	CORPORATIONS WITH ASSETS ($000,000) OF: *Less than 1/4*	*1/4 to 1*	*1 to 5*	*5 to 10*	*10 to 50*	*50 and over*
1. Share of bank credit in total liabilities	23.6	15.6	18.8	23.3	31.8	37.3	34.4
a. Credit of less than 1 year	21.5	13.3	16.9	21.6	29.7	34.0	32.0
b. Credit of 1 year and more	2.1	2.3	1.9	1.7	2.1	3.3	2.4
2. Share in liabilities excluding tax accruals	26.5	16.7	21.1	26.7	35.5	42.2	37.3
a. Credit of less than 1 year	24.1	14.2	19.0	24.8	33.2	38.5	34.7
b. Credit of 1 year and more	2.4	2.5	2.1	1.9	2.3	3.7	2.6
3. Share of short-term bank credit							
a. In total liabilities	25.3	16.2	19.9	25.2	33.8	38.8	37.2
b. In total short-term liabilities, excluding tax accruals	28.9	17.6	22.9	29.7	38.5	44.7	40.9
4. Share of long-term bank credit in long-term liabilities	14.2	12.9	12.2	11.7	16.8	26.7	17.3
5. Proportion of short-term bank credit to other notes and accounts payable	47.1	24.3	33.9	48.1	71.0	100.7	98.3
6. Share in total assets							
a. Bank credit of less than 1 year	9.8	5.8	7.4	10.0	14.4	16.5	13.9
b. Bank credit of 1 year and more	1.0	1.0	0.8	0.8	1.0	1.6	1.1
c. Other long-term debt	3.1	3.2	2.9	3.0	2.6	3.4	3.7
Total assets (billions)	$17.67	$3.31	$5.01	$4.83	$1.60	$1.69	$1.23

or in total assets is higher for medium-sized than for small and particularly than for very large corporations in retail and wholesale trade. The level of the share of bank credit, however, is slightly lower in retail but considerably higher in wholesale trade than in manufacturing. Furthermore, the asset size at which bank credit reaches its highest proportion to total assets or liabilities is slightly higher in retail trade than in manufacturing. In other words, trade corporations as they grow in size become more independent of bank credit only well after manufacturing corporations do. The importance of long-term debt increases irregularly with size in trade corporations as it does in manufacturing, and the rise in the share supplied by financial intermediaries may be assumed to be steeper.

2. Probably the share of financial intermediaries in mortgage credit to nonfinancial corporations, about which almost nothing is known in quantitative terms, tends to increase with the size of the borrower. Whether or not this assumption is correct is of relatively small importance within the entire financing picture, since the share of mortgage loans in total financing is rather small for most nonfinancial corporations except, of course, real estate corporations. For these there is little doubt, despite lack of quantitative evidence, that there is a marked positive correlation between size of the mortgage or of the mortgagee and the share of financial intermediaries as suppliers.

3. It is quite certain, although statistical corroboration is woefully lacking, that the share of corporate bonds held by financial intermediaries tends to increase with size of issuer. Financial intermediaries, by the very nature of their operations, concentrate on issues of well-known firms with a high financial rating, and these are usually corporations of large size. In addition the share of funded debt (bonds and debentures) in total financing increases markedly with size. Among manufacturing corporations long-term debt (excluding term loans from banks but including unfunded debt) amounted at the end of 1949 to 4 per cent of assets for corporations with assets of less than $5 million, to 7 per cent for those with assets between $5 million and $100 million, but to nearly 10 per cent for corporations with assets of $100 million or more[63] (Table 69). From the combination of these two tendencies the

[63] The increase probably would be more pronounced if figures were available separately for bonds and debentures, permitting elimination of unfunded long-term debt, for which the positive correlation with size may well be less pronounced if it exists at all.

share of funds supplied by financial intermediaries through long-term debt securities undoubtedly increases, and probably to a very marked extent, with the size of the corporation.[64] Indeed, for very large corporations it may be inferred from the relationship between total bonds outstanding and the holdings of financial intermediaries (Table 73) that virtually all long-term debt money is now supplied by financial intermediaries. This is certainly not the case for smaller corporations. Hence, the difference in the proportion of total funds supplied by financial intermediaries through bonds and debentures is in fact considerably larger than that indicated by the balance-sheet share of long-term debt in total liabilities or total assets.

4. Similar relations probably prevail for the supply of funds in the form of preferred stock, although the statistical material is scarcer still. The proportion of preferred stocks to total assets or total external financing increases with size of corporation (Table 70), although much more irregularly and less markedly than in the case of funded debt. The preferred stock holdings of financial intermediaries are also concentrated in issues of large corporations, but probably to a lesser extent than in the case of bonds and debentures. Business-size differences in the contribution of financial intermediaries to financing are therefore probably less pronounced for preferred stock than for funded debt, though still noticeable.

5. Participation by financial intermediaries in financing through common stocks is largely limited to property insurance companies, investment companies, private pension funds and personal trust departments. In all cases except personal trust departments, most of the holdings consist of the issues of large corporations. Thus there is hardly any doubt that the contribution of financial intermediaries through the acquisition of common stock—in any case small in relation to total common stock financing—is substantially higher for large than for small corporations.

[64] An indication of this relationship is provided in Table 73 comparing the distribution, by asset size of issuer, of (1) all corporate bonds, notes and mortgages with original maturity of over one year outstanding at the end of 1947; (2) all corporate bonds issued from 1945 to 1949; and (3) corporate bonds held in 1948 by 28 large life insurance companies, which account for approximately 60 per cent of corporate bond holdings of all financial intermediaries (70 per cent if personal trust departments and private pension funds are excluded). Though the inclusion of mortgages obscures the relation, it is clear from a comparison of columns 1 and 3 of Table 73 that the bonds of small and medium-sized issuers account for a smaller percentage of institutional portfolios than corresponds to their share in outstandings, while the opposite relation holds for bond issues of large corporations.

TABLE 73

Percentage Distribution of Long-Term Debt by Size of Issuer, 1945-1949

ASSET SIZE OF OBLIGOR	ALL CORPORATE BONDS, NOTES AND MORTGAGES OVER ONE YEAR (1947) (1)	NEW BOND ISSUES[a] (1945-1949) (2)	CORPORATE BONDS HELD BY 28 LIFE INSURANCE COMPANIES (1948)		
			All (3)	*Acquired in Direct Placements* (4)	*Other* (5)
Under $5 million	26.7	0.3	3.0	5.4	0.3
$5 to 10 million	4.1	0.8	2.9	5.1	0.4
10 to 50 million	11.4	7.3	15.6	22.3	7.8
50 to 100 million	8.4	12.1	13.5	13.5	13.4
100 million and over	49.4	77.0	64.3	52.7	77.5
Unallocated	..	2.4	0.7	0.9	0.6
All obligors	100.0	100.0	100.0	100.0	100.0
Amount, all obligors (billions)	$50.11	$9.09	$17.28	$9.25	$8.03

[a] Only issues offered through investment bankers to general public; hence to be compared with col. 5.

Column — Source

1 *Statistics of Income for 1947*, Part II, p. 248.

2 Estimated on basis of *Costs of Flotation 1945 to 1949*, Securities and Exchange Commission, pp. 16-28.

3-5 *Investment Bulletin 59*, Life Insurance Association of America, February 1950, p. 4.

6. While for separate types of financing a fairly definite and reasonably reliable picture can be obtained of the relation between business size and the share of financial intermediaries in financing nonfinancial corporations other than railroads and public utilities, it is difficult to estimate the share of intermediaries in total financing, or even external financing only, in relation to corporate size. We are hampered not only by the lack of quantitative precision in the surmises about the share of financing intermediaries in different forms of financing, but also by the absence of sources-and-uses-of-funds statements for nonfinancial corporations of different size which would permit combining the information for the different types of financing. Such a combination is particularly hazardous because the direction of the relationship between corporate size and the share of financial intermediaries differs by type of financing, the correlation being negative for short-term bank debt, but positive for most other forms of financing, particularly term loans by banks, long-term bonds, and preferred stock. It is probably safe to say, however, that the share of financial intermediaries in total external financing is substantially higher for large than for small nonfinancial corporations other than railroads and public utilities, and probably has been so throughout the period since 1900. The relation for total financing is probably in the same direction; i.e., financial intermediaries are likely to have accounted for a larger proportion of combined internal and external financing of large than small corporations.

Finally—though one would not want to be positive on this point—the tendency for the share of financial intermediaries in financing to increase with corporate size is probably more pronounced now than it was before the Great Depression. This would follow from the growth in relative importance of term loans by banks and holdings of corporate bonds by intermediaries, both of which are positively correlated with size; and from the decline of short-term bank loans, for which the correlation is negative. Indeed one might be inclined to venture the guess—and nothing but a guess is possible—that in the first two decades of the century, for nonfinancial corporations other than railroads and public utilities, the correlation between corporate size and the share of financial intermediaries in total financing was negative rather than positive.

8. *State and Local Governments*

For the period from 1901 through 1952 securities outstanding, which represent practically all external financing done by state

and local governments, have increased by $28 billion, of which financial intermediaries have taken approximately $22 billion (cf. Table 74). On the other hand, retained current income totaled $67 billion, and net capital expenditures came to $39 billion.[65] External financing has provided, for the period as a whole, less than three-tenths of total net funds (external financing plus retained income). It averaged approximately one-half before 1929; and after erratic behavior between 1930 and 1945 it accounted for approximately one-third of total funds for the period 1946-1952, but this ratio may not be representative for an extended postwar period.

State governments and local units differ considerably in degree of reliance on external financing. For state governments external financing has provided only approximately one-eighth of total net funds; for local governments, more than two-fifths. Whether the share of financial intermediaries in total external financing has been significantly different for particular groups of state or local governments, and especially whether they have differed for certain groups of municipal issues and certain types of their securities, it is impossible to say, since the balance sheets of financial intermediaries as a rule fail to provide any breakdown of aggregate holdings of state and local government securities.

The share of financial intermediaries in total external financing has shown a definite increase, though not without interruptions, from slightly more than two-fifths between 1901 and 1922 to approximately one-half in the twenties and two-thirds in the Great Depression. From 1934 to 1939 the increases in the holdings of state and local government securities by financial intermediaries were considerably larger than the very small total external financing by state and local governments. During World War II state and local governments reduced their securities outstanding by nearly one-fifth, but financial intermediaries liquidated their holdings only to a considerably smaller extent. As a result, the share of financial intermediaries in state and local government securities outstanding (including sinking fund holdings) increased throughout the thirties and early forties to 72 per cent at the end of 1945. If sinking fund holdings are excluded from outstandings, the share of financial

[65] Both figures are calculated on the basis of original cost depreciation; if replacement cost is used, they are reduced to approximately $50 billion and a little over $25 billion respectively. It is hardly necessary to recall that the budgets of state and local governments generally do not use concepts like retained income and net capital expenditures, but that these figures have been constructed, as well as possible, from the data now available (for some of the conceptual and practical difficulties involved cf. *A Study of Saving . . .*, Volume II, Chapter XVII).

TABLE 74

Sources of State and Local Government Funds, and the Amount and Share Supplied by Financial Intermediaries

Source	1901 to 1912	1913 to 1922	1923 to 1929	1930 to 1933	1934 to 1939	1940 to 1945	1946 to 1949	1950 to 1952	1901 to 1949	1901 to 1952
					Amount (billions of dollars)					
1. Total sources of funds	6.0	11.9	20.2	6.6	14.6	20.9	22.4	32.2	102.5	134.7
2. Supplied by internal sources	3.6	5.9	13.7	4.0	14.3	24.5	16.4	24.0	82.3	106.3
a. Retained income	2.3	3.4	9.6	0.1	7.2	16.2	10.5	18.1	49.2	67.3
b. Capital consumption allowances	1.3	2.6	4.1	3.9	7.1	8.3	5.9	5.9	33.1	39.0
3. Supplied by external sources	2.4	6.0	6.5	2.6	0.3	−3.6	6.0	8.2	20.2	28.4
a. Borrowing	..	..	..	0.4	−0.4	0.3	0.1	0	0.4	0.4
b. Sale of securities	2.4	6.0	6.5	2.2	0.7	−3.9	5.9	8.2	19.8	28.0
4. Supplied by financial intermediaries (change in holdings)	1.0	2.6	3.3	1.8	2.8	−1.0	4.4	7.3	14.9	22.2
5. Share of financing by intermediaries					*Share (per cent)*					
a. Total financing	17.4	21.7	16.3	26.7	19.1	−4.7	19.8	22.7	14.5	16.5
b. External financing	42.9	43.3	50.7	67.1	878.3[a]	27.6[b]	74.0	89.0	73.7	78.2

[a] Figure of limited significance as denominator is of small absolute size.

[b] Figure of limited significance as denominator is negative.

Source: *A Study of Saving . . .*, Vol. I, 1955, Tables G-1 to G-21 and supplementary data from sources listed there.

intermediaries in state and local government securities outstanding, as shown in Table 75 declined from three-fifths in 1900 to a little over one-half in the early twenties, showed a minor upward trend to the Great Depression, shot up during the thirties and early forties to over three-fourths, and remained at about that level through 1952. After World War II financial intermediaries maintained their high share in securities outstanding.[66]

The marked increase in the share of all financial intermediaries in the external financing of state and local governments obscures sharp shifts in the shares of different groups of intermediaries as shown in Table 75. The most radical change is the virtual disappearance of mutual savings banks as suppliers of such financing. These banks at the turn of the century had been the most important institutional source of financing of state and local governments, owning one-third of outstanding state and municipal securities, and making available approximately one-fourth of their total funds to state and local governments. Mutual savings banks increased the absolute volume of their holdings of state and local government securities slowly and sporadically from less than $600 million in 1900 to approximately $900 million in 1929, but at the same time the share of these securities, because of the sharp increase in total outstandings, fell from fully one-third to only 6 per cent. After the Great Depression mutual savings banks virtually liquidated their holdings of state and local government securities, particularly during World War II. From World War I on, the main reason for the withdrawal of mutual savings banks from financing state and local governments probably was the reduction in the yield of state and local government securities compared to that of other high-grade securities like United States government and prime corporate bonds, a reduction primarily due to the privilege of tax exemption. This privilege made state and local government securities particularly attractive to individuals and corporations subject to high rates of income tax, an effect that increased as income tax rates rose in the thirties and forties. For mutual savings banks, which until recently were not subject to income taxation,

[66] The data may overstate the proportion of state and local government securities held by financial intermediaries because such securities may now be carried on the average at slightly above par in the balance sheets of financial intermediaries, whereas the statistics of outstandings are all expressed in par values. While this circumstance and a few other less important statistical difficulties may, and probably do, lead to a slight overstatement of the share of financial intermediaries, the error is not likely to be of considerable size and should not affect the main trends shown.

TABLE 75

Shares of Financial Intermediaries in State and Local Government Securities Outstanding
(per cent of outstandings excluding sinking funds)

Intermediaries	*1900*	*1912*	*1922*	*1929*	*1933*	*1939*	*1945*	*1949*	*1952*
1. Federal Reserve Banks	..	..	..	0.1	0	..	..	..	..
2. Commercial banks	10.5	13.8	12.6	14.1	15.1	19.4	26.8	31.5	34.7
3. Mutual savings banks	33.5	20.6	7.8	6.2	5.2	3.4	0.6	0.4	1.1
4. Private life insurance companies	4.1	4.9	4.1	3.9	4.9	9.8	4.9	5.1	3.9
5. Fraternal insurance organizations	0.8	2.5	3.2	3.3	2.6	2.9	2.5	2.0	1.1
6. Government trust funds	0.3	0.4	1.5	3.1	4.0	7.3	7.4	7.7	8.2
7. Fire and marine insurance companies	1.4	1.9	1.3	1.5	1.0	0.9	0.8	1.8	3.2
8. Casualty and misc. insurance companies	0.9	1.2	1.3	1.4	0.9	0.9	1.1	2.0	2.7
9. Savings bank life insurance departments	..	..	..	0	0	0	0	0	0
10. Savings and loan associations	..	0.1	0.1	0.2	0.2	0.1	0.2	0.3	0.3
11. Investment companies	..	..	0	0	0	0	0	0	0
12. Government lending institutions	..	..	..	..	0.3	1.6	3.3	2.0	3.5
13. Personal trust departments	8.7	9.2	20.1	20.6	21.5	23.3	30.3	24.0	20.5
Total holdings by intermediaries	60.0	54.4	52.0	54.5	55.5	69.6	77.8	76.7	79.2
Total outstanding excl. sinking funds (billions)	$1.7	$3.8	$9.0	$14.6	$17.5	$18.0	$14.9	$20.8	$29.3

Source: Holdings of state and local government securities by financial intermediaries from tables in Appendix A; outstandings from Table G-1 (Appendix Supplement).

state and local government securities lost their attractiveness as their yield fell more and more below that of other investments of comparable quality.

The same forces, only in reverse, may be seen at work in the increase of state and local government security holdings of personal trust funds administered by banks and trust companies, most of the beneficiaries of which are individuals subject to relatively high income tax rates. These departments seem to have accounted for less than one-tenth of state and local government securities outstanding in 1900 and 1912, when the tax exemption privilege was of virtually no importance. They increased their share to one-fifth and more for the benchmark dates from 1922 through 1939, and reached a peak with 30 per cent in 1945. This resulted partly from the increasing size of assets administered by personal trust departments. It also reflected in the early years the rising share of state and local government securities within these funds. The decline in the share of personal trust funds between 1945 and 1952 is not due to an absolute decline in their holdings of tax-exempt securities, but simply to the fact that the funds were not large enough to absorb a proportion of the heavy net issues equal to the share they had held in 1945 after a period of fifteen years in which state and local governments had, on balance, made no appeal to external funds.

Commercial banks sharply increased their participation in the financing of state and local governments, both in absolute terms and in relation to total outstandings. Their share in outstandings rose fairly steadily from approximately one-tenth in 1900 to fully one-seventh in 1933. Since then they have increased their holdings of state and local government securities sharply to $4.0 billion in 1945 and to $10.2 billion in 1952. As a result, commercial banks in 1952 were the most important single source of financing for state and local governments, owning over 30 per cent of their total securities outstanding, more than any one other group of financial intermediaries, and more than all noninstitutional holders together. This rise paralleled the absolute growth of total assets of commercial banks between 1933 and 1945, though state and local government securities in 1945 accounted for a smaller proportion of total assets than in 1933. Between 1945 and 1952, however, commercial banks' holdings of state and local government securities rose more rapidly than total assets—their share increased from 2.5 to 5 per cent—and more rapidly than the total debt of state and local governments. One of the reasons for the increasing importance of state and local

government securities among commercial bank assets, and of their holdings to the total supply of such securities, is again the tax exemption feature, which in a period of rising corporate tax rates constitutes an attraction for commercial banks, whose profits are taxable; an attraction which does not extend to mutual savings banks or life insurance companies, whose earnings, broadly speaking, are not subject to corporate income tax. Another reason is the close connection between commercial banks and their own localities and states, which in many cases may have made participation in the financing of the heavy expenditures required after World War II appear in the nature of accommodating a regular important customer.

State, local and federal trust funds have supplied about $2.5 billion, or 8 per cent of total external financing for state and local governments during the period as a whole. Their share rose from virtually nothing before 1912 to 2 per cent in 1922, and to 7 per cent in 1939 and after World War II. Financial intermediaries other than banks and private and public trust funds participated only to a minor extent in financing state and local government securities, and increased their share slowly though steadily. Insurance companies, savings and loan associations, and a few other smaller groups together accounted only for 7 per cent of state and local government securities outstanding in 1900, 10 per cent in 1929, and 15 per cent in 1952.

As a result of these developments the financing of state and local governments has become predominantly an institutional affair. The only other group participating in it substantially are individuals in the upper income brackets, and even they apparently now supply less than one-fifth of the external financing of state and local governments. But if personal trust departments are included, because their beneficiaries belong to the same group of people, the share for individuals in the upper income groups rises to about two-fifths. This distribution of the sources of external financing of state and local governments is obviously determined more by the tax exemption privilege than by other considerations. Except for that privilege, state and local governments could not finance so large a part of their external requirements at such low rates either from wealthy individuals (directly or through personal trust departments), who are subject to high personal tax rates, or from commercial banks, which are liable to approximately as high corpo-

rate profit taxes; these two groups in 1952 held about three-fourths of total state and local government securities outstanding.[67]

9. *Federal Government*

During the last half century the federal government[68] has absorbed more external funds than any other sector of the economy except financial intermediaries. It has also made more use of funds from financial intermediaries, in absolute amounts or in relation to its total external financing, than any other group. The transactions of the federal government were so large during both world wars that they entirely dominated the national flow of funds in the war periods, but they have been of rather secondary importance for most other periods, a contrast not duplicated by the behavior of other sectors.[69]

From 1900 through 1949 the federal government utilized nearly $700 billion of funds, raising nearly $400 billion from current revenue and small amounts from imputed depreciation allowances. External funds totaling approximately $285 billion were absorbed, of which more than $20 billion were raised during World War I and the years immediately following, about $45 billion during the depression of the thirties, and over $240 billion during World War II (Table 76). During the remaining nearly thirty years of the period the Treasury generally was able to reduce its external financing, in the aggregate by nearly $25 billion.

Of the total external supply of funds, $255 billion (nine-tenths) was raised through the sale of securities, netting repayments and retirements against new issues. The rest was provided mostly by the issuance of currency (including Treasury currency in circulation as well as gold certificates held by the Federal Reserve Banks), most of which in turn was absorbed directly or indirectly by the general public. To follow the participation of financial intermediaries in the external financing of the federal government, it is therefore

[67] This assumes, as is probably correct, that only a small proportion of state and local government securities in personal trust funds or held by noninstitutional investors is in the hands of people with moderate incomes.

[68] Refers to the Treasury and to government corporations and credit agencies. Federal land banks are included, although the Treasury's proprietary interest in them ended in 1947.

[69] The distinction between current and capital expenditures and the estimates of capital consumption allowances, of course, are not taken directly from the budgets of the federal government, but are roughly estimated from budget and other data; for derivation and limitations of these figures, see *A Study of Saving . . .*, Volume II, Chapter XVIII.

TABLE 76

Sources of Funds of Federal Government, and the Amount and Share Supplied by Financial Intermediaries

Source	1901 to 1912	1913 to 1922	1923 to 1929	1930 to 1933	1934 to 1939	1940 to 1945	1946 to 1949	Total
				Amount (billions of dollars)				
1. Total sources of funds	1.8	5.8	1.7	3.7	24.5	55.5	−9.6	83.4
2. Supplied by internal sources	1.0	−18.9	7.8	−4.2	−12.6	−185.1	9.9	−202.1
a. Retained income	0.8	−19.2	7.5	−4.4	−13.2	−187.2	8.8	−207.0
b. Capital consumption allowances	0.2	0.3	0.3	0.2	0.7	2.1	1.2	5.0
3. Supplied by external sources	0.8	24.7	−6.0	7.8	37.1	240.6	−19.6	285.5
a. Borrowing	0.8	2.4	0	0	14.2	10.6	2.0	30.2
1. Currency	0.8	1.9	0.2	−0.2	13.5	2.9	5.6	24.8
2. Other	0	0.5	−0.2	0.2	0.7	7.7	−3.5	5.4
b. Sale of securities	0	22.3	−6.0	7.8	22.9	230.0	−21.6	255.3
4. Supplied by financial intermediaries (change in security holdings)	0.1	8.0	−0.2	8.0	23.0	154.0	−14.3	178.7
				Share (per cent)				
5. Share of financing by intermediaries								
a. Total financing	7.4	137.3	−12.2	218.5	93.9	277.5	149.0[a]	214.2
b. External financing[b]	16.5	32.3	3.5[a]	102.5	62.1	64.0	73.3[a]	62.6
c. Long-term financing[c]	−272.9[d]	35.8	3.5[a]	103.1	100.8	67.0	66.4[a]	70.0

[a] Figures of limited significance as denominator is negative.
[b] Numerator excludes Treasury currency.
[c] Numerator and denominator exclude Treasury currency.
[d] Figure of limited significance as denominator is of small absolute size.
Source: *A Study of Saving . . .*, Vol. I, Tables F-1 to F-30.

sufficient to observe the changes in their share in government securities outstanding, the more so since in this case differences between the face value of the Treasury's obligations as shown in its own statements and the value at which they are carried in the balance sheets of the holders, though not negligible, are of considerably less importance than for other saver groups and in no way obscure the picture.

From 1900 to World War I the net borrowing of the federal government was insignificant; small issues in some years, particularly to finance the acquisition and construction of the Panama Canal, were offset by net retirements in others. During this period, as during the preceding two decades, the bulk of the federal government's debt—very small compared to the government's budget, to national income, or to national assets—was held by the national banks as cover for their note issue.[70] The share of Treasury securities held by commercial banks actually rose from 42 per cent in 1900 to 65 per cent in 1912,[71] though the absolute amount of the increase—a little over $250 million—was very small in proportion to the growth in the total assets of the banking system. The increase for commercial banks occurred at the expense of the holdings of individuals, nonfinancial corporations, and also of other financial intermediaries, groups which had absorbed most of the securities sold just before the start of the period to finance the Spanish-American war. Holdings of other financial intermediaries were small, and declined sharply from less than $150 million, or 12 per cent of United States government securities outstanding in 1900, to not much over $20 million in 1912. This was due mostly to a reduction of the holdings of mutual savings banks, as those of insurance companies and other financial intermediaries were almost negligible throughout the period.[72] The concentration of United States government bonds in the portfolios of national banks was, of course, the result of the extra income that they enabled national banks to make, which was not available to other holders, and which made it possible for national banks to buy United States

[70] Approximately 85 per cent of United States government securities held by commercial banks in 1900 and 97 per cent in 1912 were in the hands of national banks.

[71] At the end of 1916 the share of Treasury securities held by commercial banks stood at 69 per cent.

[72] Holdings of financial intermediaries other than commercial banks would be shown as slightly higher in absolute amounts, and their decline would possibly appear less pronounced, if account could have been taken of the undoubtedly small holdings of personal trust departments in 1900 or 1912.

government bonds at yields out of line with those of other high-grade investments and therefore not attractive to other investors.

Of the $22 billion increase in the federal debt between 1912 and 1922, almost entirely reflecting borrowing in connection with World War I, $8 billion, or 36 per cent, was provided by financial intermediaries. The share was smaller for the war period proper. It may be estimated that of the $25 billion increase in the federal debt between the end of 1916 and the end of 1919, not much over one-fourth was supplied by financial intermediaries. About three-fourths of the funds required to finance World War I thus came from individuals, nonfinancial business and nonprofit organizations, mostly the former. As a result, the share of financial intermediaries declined to less than two-fifths in 1922, well under the level of 1912 and 1900.

Participation in the government's war financing had two significant consequences for financial intermediaries. The first was that the large-scale acquisition of government securities by the banking system—$5.5 billion from 1912 to 1922, or $4.5 billion between 1916 and 1919—contributed considerably to the expansion of bank credit during and immediately after World War I.[73] The holdings of United States government securities by commercial banks, moreover, underwent a change of function. They now were held predominantly as secondary reserves rather than as cover for notes. The second consequence was that for the first time since the Civil War, government securities came to constitute an appreciable proportion of the total assets of financial intermediaries, not only for commercial banks (10 per cent in 1922), but also for savings banks (17 per cent), life insurance companies (10 per cent), property insurance companies (21 per cent), and the personal trust departments of banks and trust companies (5 per cent).

Developments between 1922 and 1929 are interesting. A combination of net debt retirement by the Treasury, maintenance of holdings, at least in the aggregate, by financial intermediaries, and heavy sales or redemptions by noninstitutional holders, contributed to increase the share of financial intermediaries in total United States government securities outstanding from 38 per cent in 1922 to over 50 per cent in 1929 (Table 77). Virtually the entire increase was attributable to a small rise in the holdings of commercial banks in the face of a much larger expansion of their total assets and a

[73] Commercial bank deposits increased by about $20 billion between 1912 and 1922, approximately $10 billion of the increase occurring between 1916 and 1919.

TABLE 77

Shares of Financial Intermediaries in Total United States Government Direct and Fully Guaranteed Securities Outstanding

(per cent)

Intermediaries	*1900*	*1912*	*1922*	*1929*	*1933*	*1939*	*1945*	*1949*	*1952*
1. Federal Reserve Banks	—	—	1.9	3.1	10.2	5.2	8.7	7.3	9.2
2. Commercial banks	41.6	64.8	19.9	28.6	34.7	34.2	32.5	26.1	23.7
3. Mutual savings banks	8.2	1.0	4.7	3.3	3.5	6.5	3.8	4.4	3.5
4. Postal savings system	—	..	0.3	0.2	0.8	2.5	1.0	1.2	1.0
5. Private life insurance companies	0.5	0.1	3.8	2.1	3.6	11.3	7.4	5.9	3.8
6. Fraternal insurance organizations	0.1	0.2	0.1	0	0	0.1	0.1	0.1	0.1
7. Private noninsured pension funds	..	..	0	0.3	0.3	0.3	0.5	0.8	0.8
8. Federal trust funds	..	..	0.5	4.7	1.9	9.3	8.1	13.3	15.3
9. State and local trust funds	..	..	..	..	0.2	0.4	0.6	1.1	1.6
10. Fire and marine insurance companies	3.1	0.5	1.3	1.7	1.1	1.2	0.5	1.0	1.0
11. Casualty and misc. insurance companies	0	0.1	0.7	1.2	0.7	1.2	0.6	1.0	1.1
12. Savings bank life insurance departments	—	..	..	..	0	0	0	0	0
13. Savings and loan associations	..	..	0.1	0.1	0.2	0.2	0.9	0.6	0.7
14. Credit unions	..	..	..	..	0	0	0.1	0.1	0.1
15. Investment companies	..	..	0	0.2	0	0	0	0.1	0.1
16. Joint stock land banks	..	..	0.1	0	0	0	0	0	0
17. Federal land banks	—	—	0.2	0.1	0.3	0.2	0.1	0	0
18. Government lending institutions	—	..	0.5	0	0.2	1.7	0.6	0.8	0.9
19. Finance companies	..	..	..	0.3	0.1	0	0.1	0	0.1
20. Personal trust departments	..	..	3.9	5.5	10.4	7.3	4.4	5.8	6.5
Total holdings by intermediaries	53.5	66.7	38.2	51.4	68.3	81.9	70.0	69.7	69.5
Total outstanding (billions)	$1.2	$1.4	$23.0	$16.3	$24.0	$47.6	$278.7	$257.2	$267.4

Source: Appendix A.

reduction by over one-fourth in the federal debt outstanding; and to the first stages of the substantial accumulation of Treasury securities by government pension and trust funds. Smaller increases by other groups of financial intermediaries (e.g. the Federal Reserve Banks, property insurance companies, personal trust departments) were offset by a decline of the share of Treasury securities held by mutual savings banks and by life insurance companies—together, from 8 to 5 per cent of total federal debt—which reflected sharp reductions in both absolute amounts and proportion of total assets.

From 1929 to 1939 financial intermediaries supplied virtually the total long-term (excluding Treasury currency) financing of the federal government. This applies not only for the ten years taken together, but also for the subperiods 1930-1933 and 1934-1939, which differ considerably in economic character but are similar in that the federal government had almost continual recourse to debt financing. Within the decade of the thirties, federal securities outstanding increased by $31 billion to nearly $50 billion at the end of 1939; and in the same period, reported holdings of financial intermediaries rose by $31 billion to nearly $40 billion.[74] As a result the share of financial intermediaries in outstandings shot up from 50 to 80 per cent. It thus surpassed in 1939 even the highest pre-World War I proportion. What is more significant, virtually all types of financial intermediaries now participated in the financing of the federal government, and for most of them this participation absorbed a substantial part of their total assets.

Of the $31 billion debt financing of the federal government between 1929 and 1939 the banking system supplied almost three-fifths, while life insurance companies contributed approximately one-sixth and government trust funds one-eighth. In rate of increase however, commercial banks were far exceeded by life insurance companies, mutual savings banks, savings and loan associations, and government trust funds, each of which increased their holdings of Treasury securities fivefold between 1929 and 1939. Moreover, the large-scale financing of the federal government rep-

[74] A small part of the increase in the holdings of both financial intermediaries and of other holders represents not net purchases but exchanges for other assets, primarily in connection with the mortgage refinancing operations of the Home Owners' Loan Corporation and the Federal Farm Mortgage Corporation. If accurate figures on cash flows were available they would probably show a share of financing by financial intermediaries not much different from the 97 per cent indicated by the rough comparison of changes in securities outstanding and in reported holdings.

resented a change in investment policy for insurance companies, commercial banks, and mutual savings banks, the result primarily of a dearth of other high-grade investment opportunities; while the increase in the holdings of the Federal Reserve Banks, the postal savings system, savings and loan associations and government trust funds was primarily the result of the expansion of their total assets. This difference is evident in the movements of the share of United States government securities in total assets as shown in Table 78.

By far the largest demand for external funds by the federal government, of course, was caused by its participation in World War II. Between the end of 1939 and the end of 1945 the government raised no less than $230 billion through the sale of its securities, virtually all in the four years 1942-1945. This financing is equivalent to five times the total federal debt outstanding at the beginning of 1939. To make another significant comparison, it is equal to approximately one-third of the total national assets of 1939.

Financial intermediaries supplied approximately $155 billion, or slightly more than two-thirds of these massive requirements of the federal government, quintupling their 1939 holdings and in almost every case sharply increasing the proportion of United States government securities in total assets. Nevertheless, the share of financial intermediaries in total government debt at the end of the war amounted to only 70 per cent, 10 points below their share in 1939, although the absolute amount was higher than that at all previous benchmark dates. Commercial banks alone accounted for almost one-half of total funds supplied to the federal government by financial intermediaries. The share of the banking system as a whole (including mutual savings banks, Federal Reserve Banks, and the postal savings system) was even as high as two-thirds. Next came, as in 1929-1939 though at a great distance, life insurance companies and government trust funds, each of which absorbed almost one-tenth of the securities sold by the federal government to financial intermediaries.

This large-scale participation in the financing of the federal government was made possible only through considerable increase in the share of total assets made available to the Treasury, even though total assets increased sharply for most financial intermediaries and at the same time the absolute volume of financing for other sectors of the economy evidently did not decline and even expanded. In the case of commercial banks, for example, federal

TABLE 78

Proportion of Total Assets of Main Groups of Financial Intermediaries Invested in United States Government Securities

(per cent)

Intermediaries	*1900*	*1912*	*1922*	*1929*	*1933*	*1939*	*1945*	*1949*	*1952*
1. Federal Reserve Banks	—	—	8.3	9.4	34.6	13.1	53.8	41.4	47.6
2. Commercial banks	5.2	3.5	9.7	7.1	18.1	25.1	56.5	42.5	33.6
3. Mutual savings banks	4.2	0.3	16.5	5.4	7.8	26.2	62.8	53.2	37.3
4. Postal savings system	—	..	54.6	14.9	16.2	90.4	93.9	94.1	93.2
5. Private life insurance companies	0.3	0	10.1	1.9	4.1	18.5	45.9	25.6	14.0
6. Fraternal insurance organizations	4.0	1.2	3.4	0.4	0.2	5.1	21.0	14.3	10.9
7. Private noninsured pension funds	..	..	10.0	10.0	10.0	15.0	45.0	35.0	25.0
8. Federal trust funds	..	..	100.0	80.2	21.4	96.6	99.5	99.6	99.7
9. State and local trust funds	..	..	..	..	5.0	10.0	52.8	57.0	56.0
10. Fire and marine insurance companies	9.2	0.8	19.7	8.8	12.0	20.4	34.6	37.8	30.7
11. Casualty and misc. insurance companies	0	0.4	23.5	11.8	12.6	29.0	51.0	47.6	42.8
12. Savings bank life insurance departments	—	..	..	..	6.7	31.2	67.2	46.9	34.8
13. Savings and loan associations	..	..	1.0	0.3	0.9	1.9	28.1	10.1	8.0
14. Credit unions	..	..	0	0	5.4	3.1	48.3	19.1	15.8
15. Investment companies	..	..	0.9	0.9	0.6	1.1	4.6	5.2	2.9
16. Joint stock land banks	..	..	10.8	0.6	0.9	9.3	0	0	0
17. Federal land banks	—	—	5.2	1.7	4.4	3.9	11.8	10.5	6.9
18. Government lending institutions	—	—	17.0	1.1	1.6	8.2	4.7	8.6	8.1
19. Sales finance companies	..	..	..	2.0	2.7	0.8	19.8	1.8	1.7
20. Personal finance companies	..	..	..	4.6	2.1	0	4.0	0.2	0.3
21. Personal trust departments	..	..	5.0	3.0	10.0	10.0	27.5	30.0	29.2

Source: Appendix A.

government securities accounted for 57 per cent of total assets at the end of 1945 compared to 25 per cent in 1939. For life insurance companies the rise was equally sharp—from 19 per cent to 46 per cent.

In all these respects—a sharp increase of holdings of Treasury securities in absolute terms and in relation to total assets; a decline in the proportion of total federal debt carried by financial intermediaries; and the dominant position of the banking system among intermediaries as supplier of funds to the federal government—changes between 1939 and 1945 paralleled those observed during World War I. Developments since 1946, however, are in contrast to those after World War I. This time financial intermediaries substantially reduced their holdings of government securities. They were able to do so primarily because the Treasury had very large cash balances at the end of the war, which it used, together with cash surpluses during most of the period, to reduce its total debt by $22 billion between the end of 1945 and 1949. The decline in holdings of Treasury securities was small—approximately $15 billion or 7.5 per cent—for all financial intermediaries together. The smallness of the decline was due to continued rapid accumulation of Treasury securities by government trust funds and private pension funds. Excluding them, the reduction in holdings of Treasury securities by financial intermediaries is close to $30 billion, or fully one-sixth of their holdings at the end of World War II. The proportion is even larger for commercial banks, Federal Reserve Banks, life insurance companies, and savings and loan associations (approximately one-fourth). The sharp curtailment of funds made available to the federal government usually involved equally large declines in the shares of federal government securities in total assets.

The same tendencies continued in the three years 1950-1952,[75] a period during which the net external financing by the federal government was very small—totaling only $8 billion—and erratic. Commercial banks and life insurance companies continued to reduce their holdings of Treasury securities, though much more slowly than in the first years after the war, while government trust funds continued to absorb amounts approximately sufficient to offset the reduction in Treasury securities carried by the former two groups. The amount and proportion of United States government securities

[75] Not covered in Table 76. But main movements in the holdings of United States government securities by financial intermediaries can be followed in Table 77.

held by all financial intermediaries thus was approximately the same at the end of 1952 as three years earlier.[76]

As a result of these divergent tendencies, the share of financial intermediaries in financing the federal government, measured by the percentage of Treasury securities held, was only moderately higher at the end of 1949, or 1952, than it had been in 1929, although the absolute amounts involved were, of course, several times higher. The increase in the share of all financial intermediaries from approximately 50 per cent in 1929 to 70 per cent in 1952 was mostly due to a sharp increase in the share of federal securities taken by pension and retirement funds, particularly by federal, and state and local government funds. Public pension and retirement funds accounted for less than 5 per cent of the federal debt in 1929, but for over 15 per cent in 1952, while the share of private intermediaries (even including the Federal Reserve Banks) hardly increased at all—standing at 45 per cent in 1929, 55 per cent in 1949, and 50 per cent in 1952.

The share of financial intermediaries as a whole and of their main groups differs, of course, as between different types of securities through which the federal government finances itself, particularly as between long-term, medium-term and short-term financing. These differences can be followed in detail only since World War II, but that is fortunately the most significant period for this purpose.

At the end of 1949 financial intermediaries (excluding personal trust departments and some smaller institutions) held 59 per cent of the federal debt. Financial intermediaries held 60 per cent of the short-term (less than one year) debt, 46 per cent of the medium-term (one to ten years) debt, and 85 per cent of the long-term debt.[77] These figures are more informative if holdings by United States government funds, mostly pension and retirement funds, are eliminated. (They owned $39 billion, mostly in long-term special issues.) It then appears that other financial intermediaries accounted for 59 per cent of the short-term securities issued by the Treasury, 44 per cent of its medium-term securities, but only 27 per cent

[76] For a detailed discussion of changes in holdings of government securities after World War II see *The Federal Debt*, by Charles C. Abbott, Twentieth Century Fund, 1953, particularly Chapters 8 to 10.

[77] The classification is based on nearest maturity or call date, savings bonds being regarded as medium-term securities. This is obviously a classification from the holder's point of view rather than that of the Treasury (except in the case of savings bonds), which in many cases could extend the maturity by not exercising its call privileges.

of its long-term bonds. Thus, the longer the maturity the smaller the proportion held by financial intermediaries. This is to be expected, since the financial intermediaries with the largest absolute holdings—commercial and Federal Reserve Banks—by the nature of their operations participate mostly in short-term financing. Thus, of total holdings of commercial banks 40 per cent were short-term and only 4 per cent long-term federal securities. In contrast, life insurance companies held one-half of their Treasury securities in long-term maturities, and mutual savings banks approximately one-third, while most of the remainder consisted in both cases of medium-term obligations. Details of the distribution of holdings of Treasury securities by maturity for the main groups of financial intermediaries at the end of 1945, 1949 and 1952 can be followed in Table 79.

There are thus three periods during which the federal government has absorbed funds on a large scale, the two world wars and the thirties. Financial intermediaries furnished about one-third of the funds during World War I; about two-thirds during World War II; and practically 100 per cent during the thirties. They also, as a rule, increased their holdings, or at least decreased them but little, in periods when the total federal debt was stable, or when the Treasury supplied rather than absorbed funds. As a result the holdings of United States government securities by financial intermediaries increased by $179 billion between 1900 and 1949, or by almost 70 per cent of the total increase in the federal debt. Governmental organizations supplied 22 per cent, the commercial banking system 26 per cent, and other private financial intermediaries the remaining 21 per cent. Financial intermediaries thus were the main source of supply of funds for the federal government not only for the period as a whole, but also for all significant subperiods except World War I.

TABLE 79

Share of Main Holder Groups in Federal Debt, by Maturity, 1945, 1949, and 1952
(per cent of total outstanding)

Maturity (years to first call date)	*Reporting Institutions*								
	All (1)	*Excluding United States Govt. Accounts* (2)	*Federal Reserve Banks* (3)	*Commercial Banks* (4)	*Mutual Savings Banks* (5)	*Life Insurance Companies* (6)	*Property Insurance Companies* (7)	*United States Govt. Accounts* (8)	*Other* (9)
I. *Dec. 31, 1945*									
1. Less than 1	70.0	69.6	29.1	39.6	0.2	0.4	0.4	0.4	30.0
2. 1 to 15[a]	50.3	49.0	0.7	37.8	4.7	4.1	1.6	1.3	49.7
3. 15 and over[b]	75.2	35.2	0.1	4.0	6.9	23.4	0.8	40.0	24.8
Total	61.6	51.8	8.8	30.7	3.9	7.4	1.1	9.8	38.4
II. *Dec. 31, 1949*									
1. Less than 1	59.7	59.5	18.6	38.1	0.7	0.5	1.7	0.2	40.3
2. 1 to 15[a]	45.8	44.5	2.9	27.4	5.9	5.9	2.3	1.3	54.2
3. 15 and over[b]	84.6	26.8	4.9	4.0	5.4	11.6	1.0	57.8	15.4
Total	59.2	43.8	7.4	24.2	4.5	6.0	1.8	15.4	40.8
III. *Dec. 31, 1952*									
1. Less than 1	58.9	58.7	19.4	36.4	0.6	0.7	1.5	0.2	41.1
2. 1 to 15[a]	45.8	41.3	6.2	19.6	6.1	6.6	2.8	4.5	54.2
3. 15 and over[b]	100.0	..	..	..	..	..	..	100.0	..
Total	57.8	40.5	9.3	21.8	3.6	3.8	2.0	17.3	42.2

[a] Includes all United States Savings Bonds.
[b] Includes all Special Issues.
Source: *Treasury Bulletin*, March 1946, pp. 51 ff.; March 1950, pp. 33, 35; March 1953, pp. 37, 38.