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Volume Author/Editor: Raymond W. Goldsmith

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Chapter Author: Raymond W. Goldsmith

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CHAPTER IX

THE ROLE OF FINANCIAL INTERMEDIARIES IN THE FINANCIAL STRUCTURE OF THE AMERICAN ECONOMY

The preceding chapters have presented a mass of facts and figures on the activities of financial intermediaries in the United States since the turn of the century; on the size and distribution of their assets and liabilities; on their geographical distribution; on the degree of concentration of assets within the different groups of financial intermediaries; on their share, both absolute and relative, in financing the main sectors of the American economy; and on their importance as outlets for individuals' funds. Supplementary material has been provided in Appendix A of this volume and in separate Appendixes B through I. An attempt has been made in these essentially factual and descriptive chapters to bring out significant long-term movements, to connect them with structural changes in the American economy, and to indicate the reasons behind them. But comments have been made only as need arose, and with reference only to the immediate subject being discussed. It is now necessary to bring together these individual threads. Three summary indicators of the role of financial intermediaries in the process of saving and investment in the United States will be discussed in turn—their share in the financing of the American economy as a whole during the past fifty years, their share in individuals' aggregate saving, and their share in national assets and wealth.

1. *Share of Financial Intermediaries in Financing the American Economy as a Whole*

Chapter VII reviewed the share of financial intermediaries in supplying funds to each of the six other main sectors of the American economy—nonfarm households, agriculture, unincorporated business, nonfinancial corporations, state and local governments, and the federal government. An aggregation of those figures permits us to calculate the share of financial intermediaries in financing the American economy taken as a whole.[1] The necessary data are shown in Table 89 and illustrated in Chart 11. The rounding to full bil-

[1] The aggregates, of course, are calculated on the assumption of financial independence of each unit; i.e., are based on combined rather than on consolidated group and national balance sheets.

TABLE 89

Share of Financial Intermediaries in Aggregate Sources of Funds of All Other Sectors of the Economy

Source of Funds	*1901 to 1912*	*1913 to 1922*	*1923 to 1929*	*1930 to 1933*	*1934 to 1939*	*1940 to 1945*	*1946 to 1949*	*1901 to 1949*
				Amount (billions of dollars)				
1. Total sources of funds	125	251	283	39	158	413	349	1619
2. Supplied by internal sources	93	166	214	41	116	160	289	1079
a. Saving	50	88	112	–28	18	49	187	475
b. Capital consumption allowances	43	77	102	69	98	112	102	604
3. Supplied by external sources	32	86	69	–2	41	253	60	539
4. Supplied by financial intermediaries (change in holdings)	15	33	35	–4	24	156	35	295
				Share (per cent)				
5. Share of total gross financing (line 1) supplied by financial intermediaries	12	13	12	–10	16	38	10	18
a. Nonfarm households	6	5	10	–17	0	1	11	5
b. Agriculture	14	22	1	129[a]	3	–5	6	4
c. Unincorporated business	28	16	10	133[a]	–13	3	23	7
d. Nonfinancial corporations	16	12	18	422[a]	–3	3	19	12
e. State and local governments	17	22	16	27	19	–5	20	15
f. Federal government	7	137	–12	219	94	278	149[a]	214
6. Share of total net financing (lines 2.a + 3) supplied by financial intermediaries	18	19	19	12[a]	41	52	14	29
a. Nonfarm households	9	7	15	636[a]	0	1	15	8
b. Agriculture	24	43	2	28[a]	5	–6	8	7
c. Unincorporated business	55	20	20	45[a]	–45	5	35	12
d. Nonfinancial corporations	24	18	29	12[a]	34[a]	6	27	23
e. State and local governments	22	28	20	65	37	–8	27	21
f. Federal government	8	145	–15	233	97	288	133[a]	228

	1901 to 1912	*1913 to 1922*	*1923 to 1929*	*1930 to 1933*	*1934 to 1939*	*1940 to 1945*	*1946 to 1949*	*1901 to 1949*
7. Share of external financing (line 3) supplied by financial intermediaries	46	38	51	207[a]	59	62	59	55
a. Nonfarm households	70	48	57	74[a]	1	69	68	56
b. Agriculture	43	46	−15[a]	56[a]	−92[a]	74[a]	48	44
c. Unincorporated business	167	99	29	−71	106[a]	128	136	39
d. Nonfinancial corporations	36	30	40	56[a]	−122[b]	16	53	37
e. State and local governments	43	43	51	67	878[b]	28[a]	74	74
f. Federal government	16	32	4[a]	102	62	64	73[a]	63

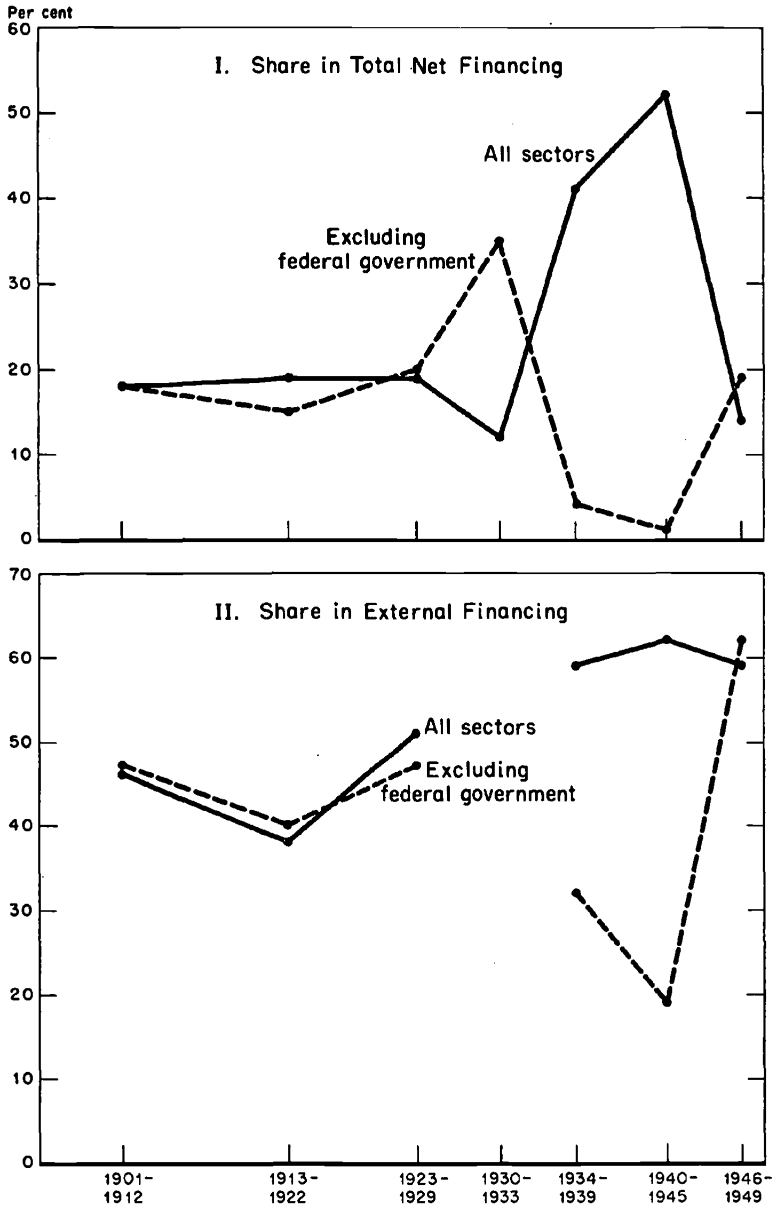
[a] Figures of limited significance as denominators are negative.

[b] Figures of limited significance as denominators are of small absolute size.

Source: Derived from Tables 45, 46, 48, 51, 53, 74, 76, and data on unincorporated business given in *A Study of Saving . . .* , Vol. I, Tables U-1 to U-3.

CHART 11

Share of Financial Intermediaries in Financing the American Economy, Benchmark Dates, 1900-1949



Source: Table 89.

lion dollars and full percentages is an indication, though an insufficient one, of the roughness of the figures; but there is no reason to doubt them as to the order of the magnitudes involved.

Under the broadest concept of financing, which includes earned capital consumption allowances, funds from all sources for sectors other than financial intermediaries appear to have totaled over \$1,600 billion for the period from 1901 through 1949.[2] Of this total, gross internal financing (the sum of retained earnings and capital consumption allowances) accounted for almost two-thirds, and external financing for a little over one-third. On a net basis (omitting capital consumption allowances from sources of funds) external financing was, of course, considerably more important and even slightly exceeded retained earnings. Thus, the share of indirect external financing (i.e. that provided by financial intermediaries) was slightly over one-half of all external financing. The contribution of financial intermediaries remained substantial even when compared to total financing. Their share amounted to nearly 30 per cent on a net basis, and to somewhat less than 20 per cent on a gross basis.

Possibly the most interesting finding of Table 89 is the indication that the share of financial intermediaries in the total supply of external funds has been of the same order of magnitude throughout the entire period, excluding only the years of the Great Depression (1930 to 1933), when total external financing was negative. For the other six periods—varying from three to twelve years in duration—distinguished throughout this study, the share of financial intermediaries in external financing has kept within the rather narrow range of approximately two-fifths to three-fifths. Within that range, however, there seems to have occurred a rather significant increase in the share of financial intermediaries in external financing. Compared to an average of somewhat less than 45 per cent for the period 1901 to 1929, the share rose to approximately 60 per cent for the years 1934 to 1949. The increase, however, was not very regular.

Similar movements are shown for the share of financial intermediaries in total gross financing and in total net financing, with the exception of the World War II period. In this case, however, no long-term increase is observable, such as characterized the share

[2] All the figures through 1949 in this section and in section 2 are taken from *A Study of Saving . . .*, Vol. I. The data referring to financial intermediaries are not identical with those used throughout this study, but the differences are not so great as to affect the conclusions.

of financial intermediaries in external financing. Instead we find some decline between the first three decades of the century on the one hand, and the period after World War II on the other. The level of the share of financial intermediaries in the supply of funds is naturally much lower for total than for external financing, generally not much above one-tenth for total gross financing—excluding World War II as well as the Great Depression—and somewhat below one-fifth for total net financing.

The reason for the diverging trends in the share of financial intermediaries in total and in external financing is, of course, the increase in the proportion of internal financing, gross or net, in total financing.[3] This change in the relationship between internal and external financing is a basic development in the American economy, and to explain it satisfactorily would take us well beyond the scope of this study.

Some of these trends stand out even more clearly when financing of the federal government is eliminated from consideration; that is, when the share of financing by financial intermediaries is calculated for the aggregate of the other five sectors, as is done in Table 90. One basic feature remains the same: the substantial increase in the share of financial intermediaries in external financing between the 1901-1929 period and the years after World War II. A second feature, however—the decline in the share of financial intermediaries in total financing—disappears. Now financial intermediaries are seen to have furnished in 1946 to 1949 approximately the same proportion of all funds used by the combined nongovernmental, nonfinancial sectors as they supplied in the three decades before 1930.

2. *Share of Financial Intermediaries in Personal Saving*

Concurrently with their important function of supplying funds to other sectors, financial intermediaries exercise a second main function as channels for saving. The nature of the data narrows the discussion to personal saving, i.e. the aggregate saving of households, agriculture, and unincorporated business enterprises (Table 91 and Chart 12). The restriction, however, is not too serious. Personal saving alone accounts for the majority of all saving. Moreover, the sectors not included in personal saving make use of finan-

[3] The share of internal financing rose between the 1901-1929 and the 1946-1949 periods on a gross basis from approximately 70 per cent to over 80 per cent, and on a net basis from more than 60 per cent to approximately 75 per cent.

TABLE 90

Share of Financial Intermediaries in Aggregate Sources of Funds of All Other Sectors of the Economy excluding the Federal Government

Source of Funds	*1901 to 1912*	*1913 to 1922*	*1923 to 1929*	*1930 to 1933*	*1934 to 1939*	*1940 to 1945*	*1946 to 1949*	*1901 to 1949*
	Amount (billions of dollars)							
1. Total sources of funds	124	245	281	35	133	358	359	1535
2. Supplied by internal sources	93	185	206	45	129	346	279	1281
a. Saving	49	107	104	–24	31	236	178	682
b. Capital consumption allowances	43	77	102	69	97	110	101	599
3. Supplied by external sources	31	61	75	–10	4	12	80	254
4. Supplied by financial intermediaries (change in holdings)	15	25	35	–12	1	2	50	116
	Share (per cent)[a]							
5. Share of total gross financing (line 1) supplied by financial intermediaries	12	10	13	–33[b]	1	1	14	8
6. Share of total net financing (lines 2.a + 3) supplied by financial intermediaries	18	15	20	35[c]	4	1	19	12
7. Share of external financing (line 3) supplied by financial intermediaries	47	40	47	122[d]	32	19	62	46

[a] Calculated from unrounded figures.
[b] Negative because numerator negative though denominator positive.
[c] Both numerator and denominator negative; figure indicates share of financial intermediaries in net outflow of funds from other sectors.
[d] Figure of limited significance as denominator is negative.
Source: Same as for Table 89.

TABLE 91

Saving through Financial Intermediaries as Share of Personal Saving[a]
(per cent)

	IN TOTAL NET PERSONAL SAVING[b]		IN TOTAL GROSS PERSONAL SAVING[c]		
PERIOD	*Including Consumer Durables* (1)	*Excluding Consumer Durables* (2)	*Including Consumer Durables* (3)	*Excluding Consumer Durables* (4)	IN TOTAL PERSONAL SAVING THROUGH INTANGIBLE ASSETS (5)
1897-1908	34	39	27	30	44
1909-1914	35	41	27	29	44
1915-1921	37	39	27	28	33
1922-1929	35	44	26	30	47
1930-1933[d]	–304	–53	20	46	–34
1934-1938	119	151	114	144	110
1939-1945	68	69	66	66	68
1946-1949	54	83	39	53	77
1897-1929	36	41	27	29	41
1946-1949	54	83	39	53	77
1897-1949	55	62	46	51	60

[a] Includes saving of nonfarm individuals, agriculture, unincorporated business enterprises, and nonprofit institutions. The estimates follow the social accounting concept.
[b] After deduction of liabilities.
[c] Without deduction of liabilities.
[d] Saving through financial intermediaries negative.
Source: *A Study of Saving . . .*, Vol. I, Tables T-6 and S-34. Numerator includes items listed in Table 92.

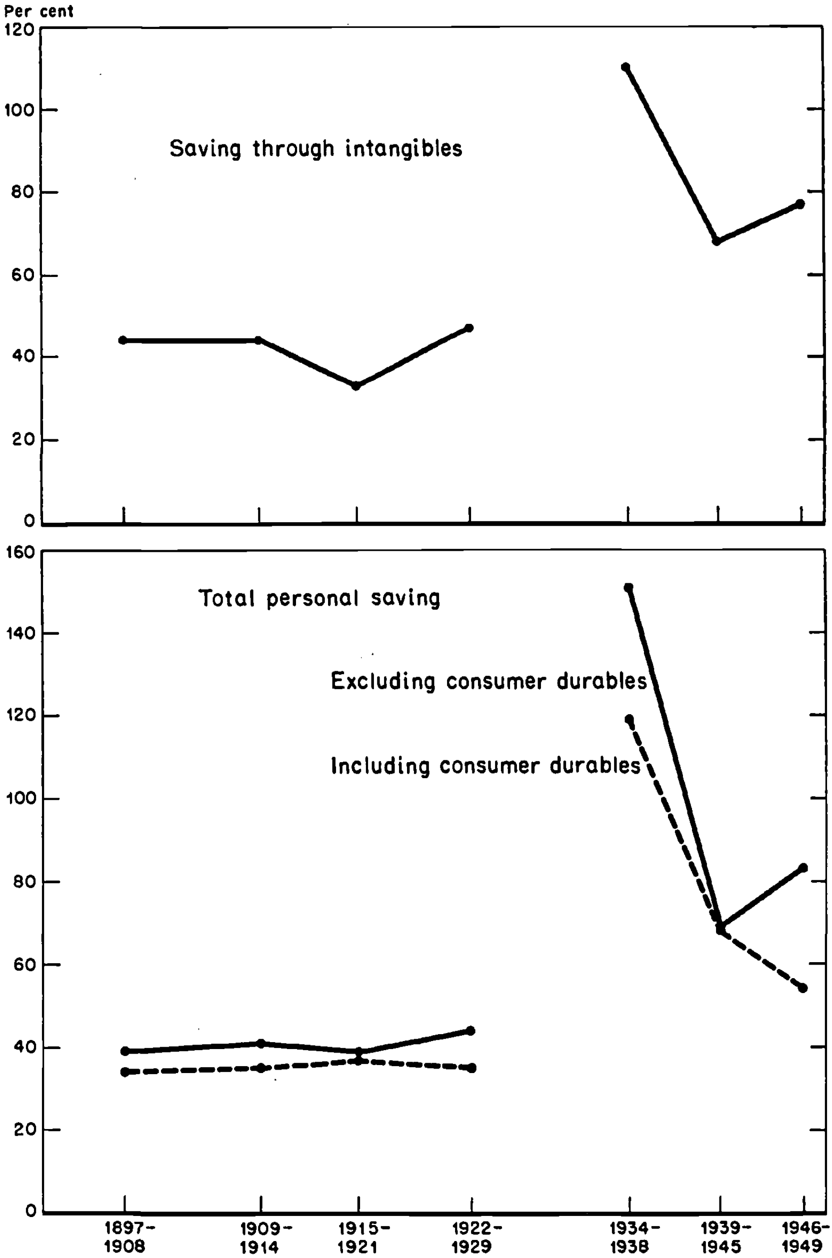
cial intermediaries as channels of saving for the most part only to the extent of deposits kept with commercial banks. For them financial intermediaries are important (so far as use of funds is concerned) primarily as parts of the monetary mechanism rather than as outlets for investible funds, the predominant function for personal savers.

During the period 1897 through 1952 as a whole, approximately one-half of total net personal saving was channeled through financial intermediaries.[4] The proportion is somewhat higher (approxi-

[4] The figure varies somewhat according to whether changes in the holdings of currency are included in saving through financial intermediaries. Strictly speaking, only holdings of currency issued by financial intermediaries should be included; that is, the holdings of metallic or Treasury currency should be excluded. Requisite figures are not easily available, but it is known that generally (particularly from 1915 on) most of the currency was issued by the Federal Reserve Banks, treated in this study as one group of financial intermediaries. Hence, to use a concept of savings through financial intermediaries which includes all changes in holdings of currency is generally appropriate.

CHART 12

Share of Net Personal Saving through Financial Intermediaries
1897-1929 and 1934-1949 by Subperiods



Source: Table 91.

mately three-fifths) if consumer durables are excluded from total saving.

The importance of financial intermediaries as channels of personal saving is equally great if their share is measured only against saving through intangible assets, a comparison relevant because all saving through financial intermediaries takes such forms. In that case the share of financial intermediaries amounts to about three-fifths.[5]

The role of financial intermediaries as a channel of saving for other than personal sectors, and hence their share in national saving, is much smaller than in the case of personal saving. We may estimate, for instance, that not more than about 5 per cent of the total funds used by nonfinancial corporations in the period 1901 to 1949 went to financial intermediaries—primarily in the form of deposits with commercial banks—and that the proportion was even smaller in the case of governments. These figures, moreover, considerably overstate the role of financial intermediaries as a channel for saving by nonfinancial corporations and governments, since the majority of the funds of these sectors result from borrowing or the sale of equity securities rather than from saving in the sense of retention of net earnings. The share of financial intermediaries in the saving of the business and governmental sectors obviously can only be very small. Conceptual and statistical difficulties prevent measuring it, since the uses of funds as they appear in the statistics cannot be divided into those that represent funds saved and those that originate in funds borrowed.

More important than the level of the share of financial intermediaries in personal saving are the changes in the ratio that have taken place over the last half century. Substantial movements are immediately evident from Table 91. From 1897 to 1929 the share of total net personal saving channeled through financial intermediaries averaged only a little over one-third and the variations in the ratio from one period to another were small. From 1939 to 1949, however, the share of saving through financial intermediaries was continuously above one-half, if consumer durables are included in saving. It was as high as about four-fifths if they are excluded. Similarly, the share of financial intermediaries in all saving through

[5] The difference between the share of saving through financial intermediaries in total net saving and in saving through intangible assets thus appears rather small. The reason is that in calculating net saving, increases in debt are deducted, while no such deduction is made in the estimate of saving through intangible assets.

intangible assets amounted to about three-fourths from 1939 to 1949, a rise from about two-fifths during 1897-1929.[6] Thus, the role of financial intermediaries in the process of personal saving has increased considerably in importance—probably the most significant finding in Table 91.

Details of this trend toward the institutionalization of saving, as it may be called, have been investigated elsewhere.[7] It has been characterized primarily by a sharp increase of private and public insurance institutions as channels of saving; secondarily by less pronounced rises in the relative importance of saving through savings and loan associations, credit unions, and investment companies. These movements are evident from Table 92, which expresses the main forms of saving as percentages of personal disposable income.

3. *The Position of Financial Intermediaries in the National Balance Sheet*

The preceding two sections have dealt with the role of financial intermediaries in two flows, the flow of funds from financial intermediaries toward other sectors of the economy and the flow of funds originating in the other sectors and directed towards financial intermediaries.[8] Now the point of view changes and we look at the relationships between the stock of assets and liabilities held by financial intermediaries and the total of assets and liabilities of other sectors and of the economy as a whole.

Some data on the share of financial intermediaries in the total existing amount of selected assets have been presented in Chapter VII, and a more detailed discussion is available in section 3 of *The Share of Financial Intermediaries in National Wealth and National Assets, 1900-1949,*[9] to which reference should be made by readers interested in the concepts used and in the reasons for selecting them. Those inquiries (summarized in Table 93 and Chart 13) show that the share of financial intermediaries has increased for all types of assets which they hold in substantial amounts. The relative increase has been most pronounced for corporate bonds and

[6] The 1930's may be passed over. During the Great Depression total saving as well as saving through financial intermediaries was negligible or negative, making a ratio of the two rather meaningless. The period from 1934 to 1938 was quite abnormal in that saving through financial intermediaries was in excess of both total net saving and of total saving through intangible assets.

[7] See *A Study of Saving . . .*, particularly Vol. I, Introduction, Chapter VI.

[8] Because of the nature of the material the flows had to be inferred in many cases as the differences between stocks at the beginning and end of the period.

[9] Raymond W. Goldsmith; National Bureau of Economic Research, Occasional Paper 42, 1954.

TABLE 92

Relation of Main Forms of Saving through Financial Intermediaries to Personal Disposable Income

(per cent)

Type of Saving	1897 to 1908	1909 to 1914	1915 to 1921	1922 to 1929	1930 to 1933	1934 to 1938	1939 to 1945	1946 to 1949	1897 to 1949
1. Currency	0.21	0.02	0.43	–0.01	0.55	0.29	2.55	–0.20	0.48
2. Commercial bank deposits	1.89	1.99	2.79	1.24	–3.66	2.60	6.07	1.07	2.13
a. Demand deposits	0.68	0.72	1.33	–0.53	–1.11	1.65	4.09	0.24	1.36
b. Time deposits	1.21	1.27	1.46	1.77	–2.55	0.95	1.98	0.83	0.77
3. Saving bank deposits	0.71	0.59	0.55	0.66	0.91	0.42	0.97	0.70	0.68
4. Savings and loan shares	0.06	0.26	0.31	0.80	–0.35	–0.26	0.48	0.80	0.26
5. Other deposits	0.03	0.04	0.05	0.04	0	0.10	0.12	0.17	0.06
6. Life insurance reserves	0.82	0.78	0.78	1.41	1.13	2.44	2.28	2.09	1.35
7. Private pension reserves	..	..	..	0.08	0.09	0.10	0.25	0.57	0.10
8. Government insurance reserves	0.01	0	0.04	0.23	0.01	1.13	2.69	1.97	0.61
Total	3.73	3.68	4.95	4.45	–1.32	6.82	15.41	7.17	5.67

Source: *A Study of Saving . . .*, Vol. I, Table S-50, except for lines 2.a and 2.b, which are rough figures obtained by dividing line 2 in accordance with changes in individuals' demand and time deposits with commercial banks between benchmark dates as shown in Appendix Table A-3.c.

TABLE 93

Share of Financial Intermediaries in Selected Assets
(per cent)

Type of Asset	*1900*	*1929*	*1952*
1. Short-term loans	37	37	46
2. Mortgage loans	52	67	79
a. Farm	31	58	60
b. Nonfarm	63	69	80
3. Bonds			
a. United States Government	54	51	70
b. State and local government	60	55	79
c. Domestic corporate	35	51	94
4. Domestic corporate stocks	8	12	21

Asset items of financial intermediaries from sum of Appendix Tables A-1, A-7, and A-15. Outstandings from Table H-1 (Appendix Supplement) except for short-term loans, which were derived as follows:

Year	Source
1900, 1929	*A Study of Saving . . .*, Vol. III, Tables W-9, W-12 and W-16, sum of lines 7, 8, and 9.
1952	Based on percentage of change from 1949 (*loc. cit.*) to 1952 in accounts receivable of nonfinancial corporations (*Statistical Bulletin*, Securities and Exchange Commission, May 1952 and October 1954) and of financial intermediaries.

stocks and farm mortgages, quite substantial for United States government and state and local government securities and nonfarm mortgage loans, and rather small for short-term loans.

It remains to extend the same approach to broader groups of assets and liabilities and, finally, to the total of assets. The first group of assets that can be usefully distinguished consists of all claims. Their total on a national basis is equal to all liabilities, except for a possible net excess of claims against or liabilities to foreigners. The second broader group includes all intangible assets (claims plus equity). The third comprises tangible assets. The fourth, finally, covers all assets of whatever type.

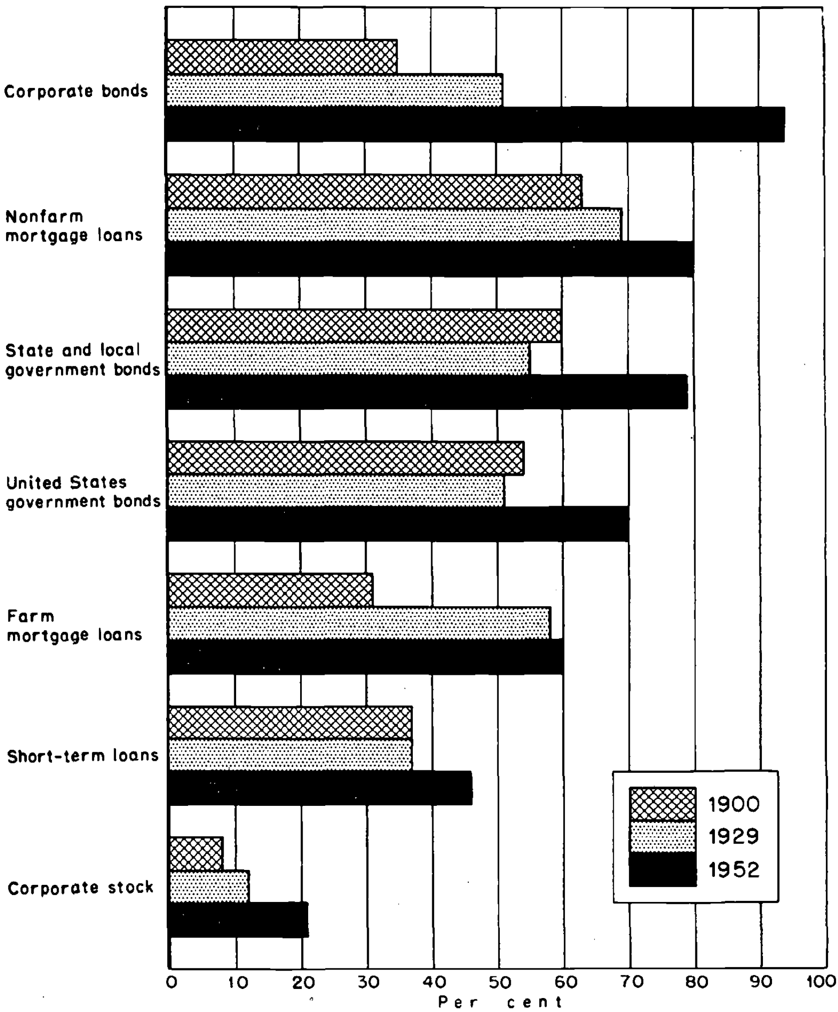
Such comparisons between the holdings of financial intermediaries and those of all other sectors require group and national balance sheets if they are to be systematically pursued.

a. PROBLEMS OF MEASUREMENT

The American economy is made up of many millions of separate independent units—in the middle of the twentieth century approxi-

CHART 13

Share of Financial Intermediaries in Selected Assets, 1900, 1929, and 1952



Source: Table 93

mately 60 million of them, including 50 million individual spending units, 4 million unincorporated business enterprises, over 5 million farms (which may be regarded as a type of unincorporated business), 700,000 corporations, and over 100,000 governmental units.[10] We may visualize each of these millions of units as having a balance sheet of its own, drawn up essentially in the form used by business enterprises.[11] We may further assume that all those balance sheets follow a uniform classification of assets and liabilities, and are based on uniform valuation at market or replacement cost.

We may then conceive of a combined national balance sheet which is simply the sum of the balance sheets of all units domiciled within the nation's boundaries, using consolidated balance sheets only for groups of parents and subsidiaries joined by majority ownership. This balance sheet would show (traditionally on the left-hand side) a national total for all types of tangible and intangible assets that we want to distinguish. The right-hand side would consist of national totals for all types of liabilities to be differentiated, as well as for net worth. The footings of this combined national balance sheet, necessarily equal on the two sides, may be called total combined national assets, or national assets for short.

The combined national balance sheet, of course, includes the balance sheets of financial intermediaries, which at the present time number probably less than 50,000 out of the total of approximately 60 million units. It is possible to segregate financial intermediaries and to prepare a combined balance sheet for them. We may then compare for any item on either side of the balance sheet the entry for financial intermediaries with the national total for the same item. The ratio so obtained measures the share of financial intermediaries in the selected asset or liability, always provided that classification and valuation are uniform for all the balance sheets being considered. If applied to the footings of the combined national balance sheet, this procedure leads to the share of financial intermediaries in national assets (to the proportion of the aggregate assets of all independent economic units within the nation that is held by financial intermediaries). This share can, of course, be regarded as the weighted average of the shares of financial intermediaries in all types of assets (or in all types of liabilities and in net worth), with the national totals for the different assets (or liabilities and net worth) used as weights.

[10] *Statistical Abstract of the United States*, 1952, pp. 263, 327, 573; *Business Statistics*, Dept. of Commerce, 1951 edition, p. 22; *Governments in the United States in 1952*, Bureau of the Census, p. 1.

[11] This implies the use of consolidated balance sheets of parents and subsidiaries, i.e. units 50 per cent or more of whose equity is owned by other units within the group. Consolidated balance sheets are of importance only among corporations, including those owned by the government.

What economists call "national wealth" is but a part of the national combined balance sheet. It is the sum of tangible domestic assets and net foreign assets on the left-hand side of the combined national balance sheet, or alternatively the sum of the net worth of all units on the right-hand side. These are the only items that will remain if the national balance sheet is drawn up on a consolidated rather than on a combined basis. In that case, following the principles of business accounting, claims of one unit encompassed in the process of consolidation against another unit, or the holdings by one unit of stock or participation in another unit, cancel in consolidation against the corresponding liabilities and equity, provided that one and the same item is valued identically in the balance sheet of the creditor and the debtor and of the holder and the issuer.[12]

We obviously may still compare the national totals for those items remaining in the consolidated national balance sheet with the same items in the balance sheets of financial intermediaries. This means that even on a consolidated basis we may determine from the left-hand side the share of financial intermediaries in tangible assets (including net foreign assets), and from the right-hand side the share of the net worth of financial intermediaries in national net worth or wealth. These two ratios, while theoretically unobjectionable, are of little practical importance since tangible assets constitute only a very small part of the total assets of financial intermediaries, and net worth of financial intermediaries is generally small compared with their liabilities. Within a system of social accounts we should not, however—and this is important—compare the total assets of financial intermediaries, an item from a combined balance sheet, with total national net wealth, which is the footing of the consolidated balance sheet, if we want to measure the relative importance of financial intermediaries.[13]

[12] The problems arising from the fact that actually valuations often differ are discussed at some length in *Studies in Income and Wealth, Volume Twelve*, National Bureau of Economic Research, 1950, pp. 55-72.

[13] To what extent the results of comparison on a combined and a consolidated basis are liable to differ may be illustrated by a simplified example. Assume domestic tangible assets of 1,000; a net foreign balance of 100 in the form of claims; aggregate domestic claims, 600; equity securities, 300; and total assets of financial intermediaries, 500, consisting of 400 claims, 70 equities, and 30 tangible assets. National wealth then amounts to 1,100; national assets, all of 2,000. Hence the ratio between the total assets of financial intermediaries and national wealth is 500/1,100 or 45 per cent, while the ratio derived from combined balance sheets, i.e. the share of financial intermediaries in national assets,

b. BASIC RELATIONSHIPS[14]

In order to clarify the basic accounting and statistical relations involved in the calculation of the share of financial intermediaries in national assets and a few other related aggregates, it will suffice to distinguish four groups of economic units: financial intermediaries, nonfinancial business enterprises, households, and government. These four groups will be identified respectively by the subscripts f, b, h and g, while their total is indicated by n or by a blank (thus for example, I_f means ${}_nI_f$). The creditor or owner group will be designated by a right subscript and the debtor or issuer group by a left subscript. Only six balance sheet items will be distinguished: total assets (A); tangible (real) assets (T); intangible (financial) assets (I), which include claims (C) and equities (E), the latter equal to net worth (W); and net foreign assets (F), which may be positive or negative. We then have the following basic equations and relationships:[15]

$$(1)\quad T_n + F_n = T_f + T_b + T_h + T_g + F_f + F_b + F_h + F_g \qquad \text{(National wealth)}$$
$$= {}_fW + {}_bW + {}_hW + {}_gW$$

$$(2)\quad A_n = A_f + A_b + A_h + A_g \qquad \text{(National assets)}$$
$$= T_n + I_n + F_n$$
$$= (T_f + I_f + F_f) + (T_b + I_b + F_b) + (T_h + I_h + F_h) + (T_g + I_g + F_g)$$
$$= ({}_fI + {}_fW) + ({}_bI + {}_bW) + ({}_hI + {}_hW) + ({}_gI + {}_gW)$$

$$(3)\quad I_n = I_f + I_b + I_h + I_g \qquad \text{(National intangible assets)}$$

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amounts to only 500/2,000 or 25 per cent. Differences of this order are typical of those actually found in the United States.

Using the example to illustrate comparisons between the amount of specific assets or liabilities held by financial intermediaries and the national total of the same assets or liabilities, a comparison which has been made repeatedly in earlier sections and which is valid within a system of social accounts, the share of financial intermediaries in claims would be 400/700 or 57 per cent, their share in equities 70/300 or 23 per cent, and their share in tangible assets 30/1,000 or 3 per cent. Averaging these three ratios, weighted with the appropriate national totals, yields 25 per cent, the same as the national asset ratio.

[14] This section is taken, with only a few changes, from *The Share of Financial Intermediaries* . . . (National Bureau of Economic Research, Occasional Paper 42), pp. 93-96.

[15] These equations assume that the same item is carried at an identical amount, i.e. the market value or an approximation to it, in the balance sheets of the creditor and debtor, or the holder and issuer. In that case no allowance is necessary for the surplus of nonprofit organizations.

$$A_f = T_f + {}_fI_f + {}_bI_f + {}_hI_f + {}_gI_f + F_f \tag{4}$$
(Assets of financial intermediaries)

$$R_1 = \frac{A_f}{A_n} \tag{5}$$
(National asset share of financial intermediaries)

$$R_2 = \frac{I_f}{I_n} \tag{6}$$
(Intangible asset share of financial intermediaries)

$$R_3 = \frac{T_f + F_f}{T_n + F_n} \tag{7}$$
(National wealth share of financial intermediaries)

$$R_4 = \frac{({}_bI_f + {}_gI_f) - ({}_fI_b + {}_fI_g) + T_f + F_f}{T_n + F_n} \tag{8}$$
(Adjusted national wealth share of financial intermediaries)

$$R_5 = \frac{T_f + F_f + ({}_bI_f + {}_hI_f + {}_gI_h)}{(T_b + T_h + T_g) + (F_b + F_h + F_g) + ({}_fI_b + {}_fI_h + {}_fI_g)} \tag{9}$$
(Consolidated national asset share of financial intermediaries)

$$R_6 = \frac{{}_fI_b + {}_fI_h + {}_fI_g}{A_b + A_h + A_g} = \frac{{}_fC_b + {}_fC_h + {}_fC_g}{A_b + A_h + A_g} + \frac{{}_fE_b + {}_fE_h + {}_fE_g}{A_b + A_h + A_g} \tag{10}$$
(Share of placement in financial intermediaries)

$$R_7 = \frac{{}_fC_b + {}_fC_h + {}_fC_g}{C_b + C_h + C_g} \tag{11}$$
(Share of claims against financial intermediaries)

The usual ratio of the assets of financial intermediaries to national wealth, $A_f/(T_n + F_n)$, is omitted from the list since it is of a hybrid nature, the numerator not being conceptually commensurable with the denominator.[16] Similar equations and ratios can

[16] In this argument two figures taken from a system of social accounts are regarded as "commensurable," or as having the same "dimension," if numerator

be set up for subgroups within the four major groups of economic units and for individual assets and liabilities.

The national asset share (R_1) is the broadest measure of the relative importance of financial intermediaries in the economy. Its usability, however, is limited for some purposes by the fact that it depends on the ratio of intangible to tangible assets in the economy, and thus does not provide a specific measure of the importance of financial intermediaries as owners or issuers of intangible assets. The intangible asset share (R_2) is not subject to this drawback, but is influenced by the size of claims, liabilities, and holdings among financial intermediaries.[17] If these are to be eliminated, recourse must be had to ratios like R_4 or R_6 and R_7. The national wealth share (R_3) is of little practical significance, since only a very minor part of the total assets of financial intermediaries consists of tangibles.

While financial intermediaries have been treated in ratios R_1 to R_3 as independent economic units so that their relations to all debtors, creditors, and owners are of significance, they may also be regarded as associations of individuals, in which case interest is concentrated on their relations with other such groups. Ratio R_4 embodies this approach. With financial intermediaries' holdings of tangible assets plus their net claims against and equities in other economic groups (business, government, and foreigners) as numerator, and national wealth as denominator, it provides an indicator of the share of financial intermediaries in national wealth. Such a ratio is a complement to similarly calculated ratios for the other economic groups—in each case including in the numerator tangible assets held by the group and the net claim or liability (including equities held and issued) of the group against or to all other groups —ratios which together add to 100 per cent, since the net claims of some groups are offset by the net liabilities of others.

Ratios R_6 and R_7 are intended to show the importance of finan-

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and denominator refer either (1) to the same type (or types) of assets, liabilities, and net worth; or (2) to the same group of accounting units. The national assets ratio of financial intermediaries, their tangible assets ratio, or the share of financial intermediaries in, say, state and local government bonds outstanding, are examples of the first type. Those of the second type are exemplified by the share of any individual type of assets in total assets of financial intermediaries. The ratio A_f/T_n does not meet either condition (i.e. it is a hybrid), as the numerator and denominator differ not only with regard to types of assets covered (all vs. tangible) but also with regard to the groups of accounting units covered (financial intermediaries vs. all).

[17] The larger these interfinancial assets and liabilities (e.g. interbank deposits; holdings of bank stock by investment companies), the higher is R_2, other things being equal.

cial intermediaries as outlets for funds of the other groups, a subject briefly explored in Chapter VIII. They differ in that R_7 is limited to claims, while R_6 is more comprehensive, including in its numerator both claims against financial intermediaries and shares of (and other equity participations in) financial intermediaries, and using total assets of the other groups as the denominator.

Actual calculation of the various ratios, while in no case simple and always subject to a substantial margin of error because of the nature of the magnitudes involved, involves differing degrees of difficulty and reliability. Of the figures needed, total assets of financial intermediaries, and subdivisions such as tangibles, claims, and equities (the numerator of ratios R_1 to R_3) are generally the ones easiest to obtain with a reasonable degree of accuracy. Difficulties and margins of error increase when it becomes necessary to split the claims and liabilities of financial intermediaries by debtor and creditor groups as is required in the numerator of ratios R_4, R_6, and R_7. Difficulties grow further when estimates have to be made of total assets and their subdivisions for other groups of economic units–needed as denominators in all ratios except R_3–because balance sheet data for them are, as a rule, much less plentiful and less reliable than for most types of financial intermediaries. It is therefore not astonishing that virtually the only ratio that has hitherto been calculated is the hybrid ratio of financial intermediaries' assets to national wealth, since it requires estimates only for aggregate assets of financial intermediaries and for aggregate tangible and net foreign assets.

C. SHARE OF FINANCIAL INTERMEDIARIES IN NATIONAL ASSETS SINCE 1900

The most comprehensive, and for many purposes the most significant indicator of the position of financial intermediaries in a country's economy, as the preceding subsection indicated, is the ratio of the total assets of financial intermediaries to the total assets of all economic units, both evaluated at, or as closely as possible to, current market prices.

Since it is derived from combined balance sheets, the ratio does not directly measure the relationship of the consolidated assets of financial intermediaries—which eliminate creditor-debtor and owner-issuer relationships among intermediaries—to the footings of either a combined or a consolidated balance sheet of all economic sectors. However, the proportion of intra-group items which would have to be eliminated to achieve a consolidated balance sheet of financial intermediaries is relatively low (of the order of 10 per cent as shown in Table 94) and has not changed markedly since the turn of the century. Thus the movements of the ratio used in this section, relating combined balance sheet footings for financial intermediaries and for all sectors, approximate fairly closely what would appear if the total for financial intermediaries were on a consolidated basis, though in that case the level of the ratio would, of course, be somewhat lower. (The ratio if taken with denominator as well as numerator on a consolidated basis is closely related to the ratio between financial intermediaries' total assets and national wealth and will be discussed with it in subsection e below.)

In 1900 the assets of financial intermediaries equaled about 11 per cent of total (combined) national assets.[18] The ratio increased slowly to almost 15 per cent in the early twenties. By 1929 it had risen to 16 per cent and advanced further to 18 per cent by 1933. The increase accelerated during the thirties and continued during World War II. As a result, the assets of financial intermediaries in 1945 equaled about 26 per cent of total national assets. In the four years following, the ratio fell back rather sharply to 22 per cent; and it continued at that level through 1952.[19] In other words, at the present time the combined assets of all financial intermediaries are equal to nearly one-fourth of the combined assets of all independent economic units within the country, and to nearly three-tenths of the assets of all units other than financial intermediaries.

All three main groups of financial intermediaries have participated in the increase of the share of financial intermediaries in total national assets, though to different degrees and at different times, as is evident from Table 95. The assets of the banking system accounted for almost 8 to 9 per cent of total national assets at all benchmark dates between 1900 and 1933, but increased to 11 per cent in 1949 and 1952, most of the increase taking place during the thirties and World War II. The ratio reached a peak of 14 per cent in 1945 and has declined not inconsiderably since then. The share of insurance organizations in total national assets, on the other hand, increased almost continuously over the last fifty years. It started at only 1 per cent in 1900, rose rather slowly to 3 per cent in 1929, and then accelerated in relative growth, reaching

[18] Figures cover financial intermediaries for which it was possible to derive estimates of their main types of assets and liabilities (see Table 10).

[19] Inclusion of mortgage companies, security brokers and dealers, and investment holding companies would raise the figures only slightly, generally by one percentage point (see Table 96).

TABLE 94

Comparison of Combined and Consolidated Assets of Financial Intermediaries
(dollars in billions)

Year	*Total Assets, Combined Balance Sheet* (1)	*Inter-Financial-Intermediary Items* (2)	*Total Assets, Consolidated Balance Sheet* (3)	*Layering Ratio* (4)
1900	$18.2	$1.5	$16.7	1.090
1912	39.4	3.1	36.3	1.085
1922	93.8	7.8	86.0	1.091
1929	152.1	12.4	139.7	1.089
1933	132.9	10.4	122.5	1.085
1939	198.5	26.5	172.0	1.154
1945	400.7	35.2	365.4	1.097
1949	446.8	39.4	407.4	1.097
1952	549.0	50.0	499.0	1.100

Column	Source
1	From Table 27.
2	From Appendix A: Sum of (1) member bank reserve accounts with Federal Reserve Banks (Table A-2, line 17); (2) interbank deposits of commercial banks (Table A-3.c, line 16); (3) deposits of financial intermediaries other than banks (Table A-3.c, line 19); (4) bills discounted for member and nonmember banks by Federal Reserve Banks (Table A-2, line 10); (5) commercial bank loans to other banks, credit unions, and joint stock land banks (Table A-3.a, lines 13, 16, 17); (6) notes payable to banks of finance companies (Table A-25, line 13, A-26, line 11, and A-27, line 9; also see notes to Table A-18, line 31); (7) Federal Home Loan Bank advances and commercial bank loans to savings and loan associations (Table A-19, line 15); (8) credit union loans to other credit unions (Table A-20, line 8); (9) commercial bank holdings of obligations of government lending institutions not fully guaranteed by the United States government and of federal land bank bonds (see notes to Table A-3, line 28); (10) commercial bank holdings of Federal Reserve stock (Table A-3, line 30); (11) Federal Home Loan Bank stock held by savings and loan associations (Table A-19, line 10); and (12) credit union holdings of savings and loan shares (Table A-20, line 9). Col. 2 does not cover all items that would have to be eliminated in a consolidated balance sheet of all financial intermediaries. The main omissions are the common stock of banks and property insurance companies held by investment companies, other property insurance companies, personal trust fund departments, and, at certain dates, the Reconstruction Finance Corporation. These items, however, are small compared to those included in col. 2. In 1952, for example, they probably did not exceed 10 per cent of the inter-financial-intermediary items included in col. 2. Cols. 1, 2 and 4 would also be increased slightly if consolidation included three types of financial intermediaries for which no set of balance sheets is available and which, therefore, are not included in this table—brokers and dealers in securities, investment holding companies, and mortgage companies.
3	Col. 1 minus col. 2.
4	Col. 1 divided by col. 3.

TABLE 95

Share of Main Groups of Financial Intermediaries in National Assets
(per cent)

YEAR	ALL FINANCIAL INTERMEDIARIES *Standard*[a] (1)	ALL FINANCIAL INTERMEDIARIES *Broad*[b] (2)	BANKING SYSTEM (3)	INSURANCE (4)	OTHER FINANCIAL INTERMEDIARIES *Standard*[a] (5)	OTHER FINANCIAL INTERMEDIARIES *Broad*[b] (6)	PRIVATE INTERMEDIARIES (7)	PUBLIC INTERMEDIARIES (8)
1900	11.4	11.9	7.8	1.4	2.2	2.7	11.9	–
1912	12.8	13.2	8.4	1.8	2.6	3.0	13.2	–
1922	14.4	15.1	9.1	1.8	3.5	4.2	14.1	1.0
1929	15.5	17.0	8.3	2.5	4.6	6.2	16.3	0.8
1933	18.1	18.7	8.9	4.0	5.3	5.9	16.8	1.9
1939	22.6	23.1	11.2	4.9	6.5	7.0	19.0	4.1
1945	25.7	26.1	14.5	5.3	5.9	6.3	19.3	6.8
1949	22.2	22.4	11.3	5.9	4.9	5.2	16.9	5.6
1952	22.0	22.3	10.7	6.0	5.3	5.6	16.9	5.3

[a] Covers only financial intermediaries for which balance sheets were developed.

[b] Includes, in addition to the financial intermediaries coyered under the standard definition, mortgage companies, security brokers and dealers, and investment holding companies.

Source: Assets of financial intermediaries from Tables 10 and 13. Total national assets from *A Study of Saving . . .*, Vol. III, Tables W-9 to W-6, and Goldsmith, *Income and Wealth*, Series IV, Cambridge, Bowes and Bowes, 1955.

a share of approximately 6 per cent in 1952. The five point increase over the last fifty years was about equally divided between private and government insurance organizations. Government insurance, whose rapid growth began in the 1930's, accounted for most of the increase in the share of all insurance organizations in total national assets between 1933 and 1949. The share of other financial intermediaries rose from 2 per cent in 1900 to 5 per cent in 1929, reflecting rapid growth in the assets of personal trust departments and savings and loan associations, and the advent of investment companies and land banks. This group, rather mixed in character, was unable to increase its share significantly during the succeeding twenty-five years, primarily because of relatively slow growth in the assets of personal trust departments.

Grouping financial intermediaries differently, we find that the share of private intermediaries rose from 11 per cent of total national assets in 1900 and 15 per cent in 1929 to approximately 17 per cent in 1952. Public intermediaries, on the other hand, were of negligible importance in 1900 and even in 1929 accounted for less than 1 per cent of total national assets—represented primarily by the assets of the Federal Reserve System; but their share increased to 5 per cent in 1952, with most of the rise accounted for by the Federal Reserve System and by federal, state and local insurance funds.

d. SHARE OF FINANCIAL INTERMEDIARIES IN INTANGIBLE ASSETS

Since the assets of financial intermediaries consist almost exclusively of intangibles, a comparison between their holdings and the national total (the aggregate of all claims and business equities) is of particular significance as an over-all indicator of the role of financial intermediaries within a country's financial structure, even though the ratio does not eliminate intra-sector claims or ownership relations among either financial intermediaries or among nonfinancial business enterprises.

The share of financial intermediaries in total intangible assets has risen almost without interruption from approximately 25 per cent at the turn of the century to 40 per cent in the late 1930's (see Table 96). The increase, however, was far from regular. Most of it was concentrated in the decade from 1929 to 1939, and resulted from a very sharp shrinkage in the value of the nation's intangible assets, particularly equities, of which only a small proportion is held by financial intermediaries. Since then there has been no net increase in the intermediaries' share; a decline during World War II, in part the result of large-scale sales of Treasury securities to nonfinancial holders, was made up between 1945 and 1949.

The movement of the over-all share of financial intermediaries is better understood by separating claims and equities. In both cases the share of financial intermediaries grew, but the rates and patterns of increase differed.

Financial intermediaries at the turn of the century held almost one-third of all claims outstanding in the nation. Their share increased to over two-fifths of the national total by 1949.[20] In line with the movement of their share in all intangibles, the sharpest advance occurred between 1933 and 1939. The decline in their share during World War II was about twice as pronounced for claims as for all intangibles. The high level, and the marked and continuous though irregular increase in the proportion of all claims

[20] The ratio remains approximately the same in 1949 if intra-sector claims are excluded both among financial intermediaries and among nonfinancial business enterprises. Whether such an adjustment would significantly change the movement of the ratio during the preceding fifty years is difficult to ascertain, but it is not very likely that it would.

TABLE 96

Share of Financial Intermediaries in National Assets and Its Main Constituents

YEAR	TOTAL ASSETS: Including: Equity in Unincorporated Business (1)	TOTAL ASSETS: Excluding: Equity in Unincorporated Business (2)	TANGIBLE ASSETS (3)	INTANGIBLE ASSETS: Including: Equity in Unincorporated Business (4)	INTANGIBLE ASSETS: Excluding: Equity in Unincorporated Business (5)	CLAIMS (6)	EQUITIES: Including: Equity in Unincorporated Business (7)	EQUITIES: Excluding: Equity in Unincorporated Business (8)
			I. National total (billions of dollars)					
1900	159	153	90	69	63	50	109	103
1912	309	300	168	141	132	101	208	199
1922	653	631	326	327	305	240	413	390
1929	982	954	427	555	527	354	627	600
1933	733	715	322	411	393	306	427	409
1939	877	851	395	482	456	391	486	460
1945	1,557	1,506	570	987	936	817	740	688
1949	2,016	1,947	881	1,135	1,066	924	1,092	1,023
			II. Share of financial intermediaries (per cent)					
1900	11	12	1	25	27	31	3	3
1912	13	13	1	27	29	34	3	3
1922	14	15	1	28	30	35	3	3
1929	15	16	1	27	28	38	4	4
1933	18	19	2	31	32	39	5	5
1939	23	23	2	39	42	46	5	5
1945	26	27	5	38	40	43	7	8
1949	22	23	1	39	41	43	5	6

Source: Section I from *A Study of Saving . . .*, Vol. III, Tables W-9 to W-16. Assets of personal trust departments are included in claims. Section II obtained by dividing figures for financial intermediaries from Table 27 by Section I.

outstanding held by financial intermediaries, may be regarded as one of the most important characteristics of the financial structure of the United States.

Stocks have always constituted only a small fraction of the assets of financial intermediaries (5 to 10 per cent except in the late 1920's) and have been concentrated in the hands of personal trust departments and investment companies. Moreover, a relatively high proportion (at least higher than among total stock outstanding) has consisted of preferred stock. These characteristics, together with the fact that financial intermediaries cannot own equity in unincorporated business enterprises, have determined the movements of the intermediaries' share in total equities.

This share (including both the market value of corporate stock and the book value of unincorporated business equities in the denominator) rose fairly regularly from 4 per cent in 1900 to 10 per cent in 1929. The rise was due both to an increase in stocks in personal trust funds well in excess of the total outstanding and to the explosive development—in the second half of the twenties—of investment companies, which placed most of their funds in common stock. A sharp increase in the ratio during the thirties reflected increased holdings by personal trust funds. Changes in the ratio since 1939 are too small to be significant, particularly in view of considerable margins of error in the estimates. In 1952 financial intermediaries held approximately one-seventh of all business equities.

Because holdings consist exclusively of corporate stock, the share of financial intermediaries in all stock outstanding is somewhat higher. It did not exceed one-fifth in 1952. However, this constituted a significant advance over the ratios of approximately 6 per cent at the turn of the century and 12 per cent in 1929.

e. SHARE OF FINANCIAL INTERMEDIARIES IN TANGIBLE ASSETS (NATIONAL WEALTH)

The tangible assets of financial intermediaries are, as a rule, limited to the buildings in which they operate and to their equipment. These are supplemented in severe depressions by real estate acquired involuntarily by foreclosure of mortgage loans. It is only recently that some financial intermediaries, particularly life insurance companies, have acquired substantial amounts of real estate for investment, especially in connection with lease-back arrangements which give these holdings an economic character very close to mortgage loans. Finally, some of the government corporations have recently shown substantial holdings of tangibles, primarily in the form of war plants (apparently a temporary phenomenon), stocks of strategic commodities, and stocks of agricultural products resulting from price support operations.

These factors explain the very low level of the share of financial intermediaries in all tangible assets as shown in Table 96, usually in the neighborhood of 1 per cent of the national total, and the bulge reaching 2 per cent in the 1930's and 5 per cent at the end of World War II.

The comparison just made between all tangible assets within the nation and those held by financial intermediaries is, however, not the accepted one. It has been customary instead to compare the total assets of financial intermediaries with national wealth (total tangible assets plus net foreign balance). This is a hybrid ratio, as has been repeatedly emphasized—the numerator comes from what is from a national point of view a combined balance sheet, while the denominator represents the footing in a consolidated national balance sheet—and therefore should not be used in a system of social accounts.[21] However, in deference to its popularity, it is shown in Table 97.

The ratio of the assets of financial intermediaries to national wealth has shown a continuous increase from 1900 to 1945. The increase was slow up to the early twenties, the ratio rising only from 22 per cent in 1900 to 29 per cent in 1922. From then on the rise was very sharp for a quarter of a century. In the seven years between 1922 and 1929 the ratio of financial intermediaries' assets to national wealth increased from 29 to 38 per cent. It continued to rise at an undiminished speed during the next ten years, exceeding 50 per cent in 1939. The sharp further increase during World War II, up to a peak of 71 per cent in 1945, proved to be temporary. By 1949 the ratio had reverted to 50 per cent, virtually the same as ten years earlier, and it continued to decrease slightly between then and 1952.[22]

[21] In the combination of balance sheets an exception is usually made to the extent that the statements of affiliated economic units, primarily parent and subsidiary corporations, are on a consolidated basis. This does not affect the basic principle that no item in the balance sheet of independent economic units is eliminated in the combined national balance sheet.

[22] These ratios disregard the fact that the assets of financial intermediaries are based on book values for all fixed-interest-bearing securities and for some stocks, while the components of national wealth in principle reflect current values. An adjustment of the assets of financial intermediaries to a consistent

TABLE 97

Relation of Financial Intermediaries' Assets to National Wealth
(dollars in billions)

YEAR	NATIONAL WEALTH (1)	RELATION OF FINANCIAL INTERMEDIARIES' ASSETS TO: *National Wealth* (2)	*Adjusted National Wealth* (3)
1900	$ 88	22%	8%
1912	165	25	11
1922	334	29	13
1929	439	38	15
1933	330	42	21
1939	396	51	25
1945	571	71	42
1949	898	50	27
1952	1,200	46	23

Column	Source
1	Raymond W. Goldsmith, *A Study of Saving . . .* , Vol. III, Table W-1 (1900-1949) and (for 1952) in *Income and Wealth*, Series IV, Cambridge, Bowes and Bowes, 1955, p. 361.
2	Table 10, total (broad definition), divided by column 1 above.
3	Tangible assets of financial intermediaries (Table 27, line 2), and net claims against business and government (approximated from Table 27, lines 30, 31, 36, 41, 42, 44, 45 and 47 minus lines 6, 8 and 11; a small portion of line 18 should also be deducted) divided by col. 1.

The increase in the ratio up to 1945 reflects a higher rate of growth in the assets of financial intermediaries than in national wealth—or, as during the Great Depression, a smaller decrease. Between 1900 and 1945 national wealth increased only six and a half times, while the assets of financial intermediaries increased more than twentyfold. The substantial decline in the ratio between 1945 and 1949 (apparently continued in less pronounced form to 1952) is due to relatively small growth in the assets of financial intermediaries—a sequel to the extraordinary expansion in the preceding decade—in the face of a sharp increase in national wealth re-

current value would, as a rule, affect the ratios only slightly, and is not likely to influence the trend at all. It is only in 1933 that such an adjustment would lead to a noticeable reduction in the value of financial intermediaries' assets and, hence, in the ratio. But even such an adjustment would not interrupt the upward trend of the ratio. It would only reduce the rise during the Great Depression, which is shown in Table 97, and would increase the rise during the remainder of the thirties.

flecting both a very high level of capital formation and a sharp rise in the prices of tangible assets. A longer period will have to elapse before we can say whether this presages a break in the trend observed up to 1945.

These figures obviously do not mean that financial intermediaries owned nearly one-fourth of the national wealth in 1900 and one-half in 1952, if national wealth is understood in the sense of tangible assets. It has already been indicated in Table 96 that only a small percentage of all tangible assets are directly owned by financial intermediaries. Nor do the ratios mean that financial intermediaries in 1952 had claim to, or control of, one-half of all assets in the country. That proportion, as has just been shown (Table 95), was considerably lower. Nor do the figures measure other economically significant relations between the assets of financial intermediaries and a comparable national total. These ratios are nothing but an arithmetic relation between a numerator and a denominator which are not commensurable.

f. THREE SUPPLEMENTARY RELATIONS

Three other ratios merit consideration as over-all rough indicators of several aspects of the importance of financial intermediaries in the economy. The first is the ratio obtained when the assets of financial intermediaries and of all other sectors taken together are derived from consolidated rather than from combined balance sheets. This ratio may therefore be called the consolidated national asset share (R_5), as distinguished from the combined national asset share (R_1) of subsection b. The second supplementary relation is the ratio of the net claims of financial intermediaries against business and government, (plus their small tangibles) to national wealth. This ratio (R_4) may be regarded as measuring the share of financial intermediaries in a consolidated national balance sheet if intermediaries are regarded not as independent economic units but as associations of individuals (their owners) so that claims of financial intermediaries against individuals, as well as individuals' claims against and their equity in intermediaries, are canceled. The third ratio (R_7), finally, compares the claims against financial intermediaries held by the other sectors of the economy with their total claims. It is thus a component of ratio R_6.

The consolidated national assets share has necessarily moved on a considerably lower level than, but in a way similar to, the ratio of the assets of financial intermediaries to national wealth presented in subsection e.[23] It has increased from approximately one-sixth in 1900 to fully one-fifth in 1929 and well over one-fourth in 1952. These ratios mean that if all intra-sector assets and liabilities are eliminated, the size of financial intermediaries rose from approximately one-fifth of all other sectors taken together at the turn of the century to approximately two-fifths in 1952. The ratio thus provides an over-all statistical indicator of the degree of interrelations between financial intermediaries on the one side and all other sectors taken together on the other side. The substantial rise in the ratio during the first half of the twentieth century corroborates statistically on the broadest scale what, of course, is known from all nonstatistical or less comprehensive statistical studies of the country's financial structure.

The ratio of financial intermediaries' net claims against business

[23] Using the symbols of subsection b we have:

$$R_5 = \frac{T_f + F_f + ({}_bI_f + {}_hI_f + {}_gI_f)}{(T_b + T_h + T_g) + (F_b + F_h + F_g) + ({}_fI_b + {}_fI_h + {}_fI_g)};$$

$$R_8 = \frac{A_f}{T_n + F_n}.$$

Since the tangible plus net foreign assets of intermediaries are very small compared to national wealth, we have $(T_n + F_n) \sim (T_b + T_h + T_g + F_b + F_h + F_g)$; hence, T_f and F_f can be ignored in first approximation. Furthermore, ${}_fI_b + {}_fI_h + {}_fI_g$ is equal to consolidated liabilities plus equity of financial intermediaries and thus very close to their consolidated assets, which may be designated by A'_f. Thus, ${}_bI_f + {}_hI_f + {}_gI_f + T_f + F_f = A'_f$. Hence,

$$R_5 \sim \frac{A'_f}{T_n + F_n + A'_f};$$

$$R_8 = \frac{A_f}{T_n + F_n}.$$

Expressing A'_f as aA_f, where a is a fraction only slightly below unity, say 9/10,

$$R_5 \sim \frac{aA_f}{T_n + F_n + aA_f};$$

$$\frac{R_5}{R_8} = \frac{a(T_n + F_n)}{T_n + F_n + aA_f}.$$

As $aA_f = A'_f$ is a fraction, say b, of $T_n + F_n$,

$$\frac{R_5}{R_8} = \frac{a}{1 + b}.$$

Inserting the range of observed values into this equation we have

$$\frac{R_5}{R_8} = \frac{0.90}{1.20 \text{ to } 1.50} = 0.60 \text{ to } 0.75.$$

and government to national equity, with unincorporated enterprises included in business–R_4, shown in Table 97, column 3–has moved parallel to the national wealth ratio, though on a considerably lower level. It rose continuously between 1900 and 1945, from less than one-tenth to over two-fifths, and fell back sharply to one-fourth in 1949, further declining, though much more slowly, to 1952. To evaluate the level and movements of this ratio one would need parallel ratios for individuals, business, and government, which are not yet available. From the nature of the measure, we know that the pronounced increase in the ratio for financial intermediaries must have been offset by decreases in the ratio of some or all of the other groups. There is little doubt that this offset has been provided first by the government (particularly between 1912 and 1922 and between 1939 and 1945), and second by business (particularly between 1922 and 1929).[24]

g. SHARE OF FINANCIAL INTERMEDIARIES IN CHANGES IN NATIONAL ASSETS AND WEALTH

Some of the tendencies observed in sections c, d, and e are thrown into sharper relief if changes in the assets of financial intermediaries between two benchmark dates are compared with changes in national assets or in national wealth over the same period. This is done in Table 98, which permits the following observations:[25]

1. The share of financial intermediaries in changes in national assets, intangible assets, and national wealth shows definite increases in each case if periods of substantial length are aggregated.

The share in national assets rises from not much over one-tenth for the period from 1861 to 1900 to over one-sixth for the first three decades of this century, and to over one-fourth for the period from 1930 to 1952. The ratio of changes in financial intermediaries' assets to changes in national wealth rises as markedly, from one-

[24] Careful readers will have noticed that one of the seven ratios listed in subsection b has been omitted (R_6), simply because it is very similar to the national asset share (R_1). R_6 differs from R_1 only in that the denominator is smaller by the assets of financial intermediaries, i.e. by one-tenth to one-third; the numerators are identical. The figures are given below for the sake of completeness (broad total of assets of financial intermediaries used in calculation):

1900	14%	1939	30%
1912	15	1945	35
1922	18	1949	29
1929	21	1952	29
1933	23		

[25] Some of the figures, dealing with the period before 1900, are based on material discussed in the following section.

TABLE 98

Share of Financial Intermediaries in Changes in Total National Assets, Wealth and Intangible Assets
(dollars in billions)

YEAR	CHANGES IN: National Assets (1)	National Wealth (2)	National Intangible Assets (3)	Assets of Financial Intermediaries (4)	RATIO OF CHANGES IN FINANCIAL INTERMEDIARIES' ASSETS TO CHANGES IN: National Assets (5)	National Wealth (6)	Intangible Assets (7)
1861-1900	$137	$75	$62	$15	11%	20%	24%
1901-1929	823	351	486	149	18	42	31
1930-1952	1,518	761	745	389	26	51	52
1861-1952	2,478	1,187	1,293	553	22	47	43
1901-1912	150	77	72	22	15	29	31
1913-1922	344	169	186	58	17	34	31
1923-1929	329	105	228	69	21	66	30
1930-1933	–249	–109	–144	–30	12	28	21
1934-1939	144	66	71	65	45	98	92
1940-1945	680	175	505	204	30	117	40
1946-1949	459	327	148	46	10	14	31
1950-1952	484	302	165	104	21	34	63

Column	Year	Source
1	1861-1900	Table 99, col. 4.
	1901-1949	Table 96, col. 1.
	1950-1952	*Income and Wealth*, Series IV, Cambridge, Bowes and Bowes, 1955, p. 361.
2	1861-1900	Table 99, col. 2.
	1901-1952	Table 97, col. 1.
3	1801-1900	Table 99, col. 3.
	1901-1949	Table 96, col. 4.
	1950-1952	Estimated from sources for cols. 1 and 2.
4	1861-1900	Based on Table 99, col. 1.
	1901-1952	Table 12 (broad total of assets).
5-7	1861-1952	Col. 4 divided by cols. 1, 2 and 3, respectively.

fifth (1861-1900) to two-fifths (1901-1929) to one-half (1930-1952). The increase in the share of financial intermediaries in intangible assets is less pronounced and occurs mainly after the Great Depression, the ratio being in the neighborhood of 30 per cent until 1929, and rising to 50 per cent for the period 1930 to 1952.

2. The ratio of changes in financial intermediaries' assets to those in national wealth, besides being on a much higher level than their share in national asset changes, fluctuates considerably more. This is explained by the fact that the ratio of financial intermedi-

aries' assets to national wealth is the product of their share in national assets and the financial interrelations ratio, and that both have shown an irregular upward trend during the last century.

3. The share of financial intermediaries in changes in national assets shows an upward trend, though of small proportions, between 1900 and 1929, but moves erratically over the following two decades. It is highest, well over 40 per cent, for the period 1934 to 1939. It is very low, 12 per cent, in the Great Depression. During that period financial intermediaries' assets declined relatively much less than national assets because they consisted to a much smaller extent of tangible assets and equities, which were subject to sharp price declines. The ratio is also very low, 10 per cent, in the period after World War II, when the value of tangible assets rose rapidly, reflecting the sharp rise in the commodity price level during and after the war.

The peak ratio of the thirties is of interest particularly in comparison with the much lower ratio of the twenties, one of the periods of very intensive expansion of the scope and activities of financial intermediaries. The assets of financial intermediaries increased by slightly over $60 billion both between 1922 and 1929 and between 1933 and 1939. National assets, however, rose by $330 billion in the first period, but by less than $150 billion in the second. The difference, of course, is due largely to the extraordinarily rapid rise in prices of stocks and of real estate during the twenties and the much more modest recovery in their price level after the Great Depression. Comparison of the two periods again shows that apart from long-term trend movements, changes in financial intermediaries' share in national assets tend to be ruled by movements in the denominator, which, in turn, depend largely on the extent of price changes for equities and tangible assets. The ratio between changes in financial intermediaries' assets and in national assets will be high (abstracting from the effect of other factors) when national assets increase chiefly as a result of an inflation in the debt structure such as accompanies deficit war financing, and will be low when the expansion of national assets reflects primarily rises in the price level of tangible assets and equities.

4. The ratio of the change in financial intermediaries' assets to that in national wealth rises in war periods simply because the absolute value of national wealth fails to grow, while the assets of financial intermediaries are greatly expanded in the process of inflationary war financing. The result is particularly marked in World

War II. The ratio exceeds 100 per cent for the period between the benchmark dates of 1939 and 1945, and would be substantially above that level if calculated for the period 1942 to 1945 alone.

All figures used so far are based on differences between current values of assets at two selected benchmark dates. They therefore include all realized and unrealized capital gains and all writeups and writedowns. It is interesting to compare these ratios with figures from which valuation changes have been eliminated. Essentially such figures are provided by the share of financial intermediaries in supplying funds to the different sectors of the economy,[26] which have been reviewed in section 1.

Table 89 showed that financial institutions supplied between 1900 and 1949 approximately 30 per cent of total new funds (internal saving plus external funds) of all other groups taken together, and 55 per cent of external funds alone. Both proportions are considerably higher (standing at approximately 35 and 60 per cent respectively) for the period 1930 to 1949 than for the first three decades of the century (when they amounted to approximately 20 and 45 per cent).[27]

These ratios are somewhat higher than the share of financial intermediaries in changes in national assets. For the fifty years, 1900 to 1949, financial intermediaries' share in new supply of funds is 29 per cent; their share in change in national assets, 23 per cent. For the first three decades the two ratios are about equal—slightly less than one-fifth. For the period from 1930 to 1949, however, financial intermediaries' share in new supply of funds is considerably above that in change in national assets: 37 as against 28 per cent. The difference between the ratios for supply of funds and for national assets provides some measure of the differential effect of net capital gains or losses on national assets and on the assets of financial in-

[26] The derivation of the figures was explained, and some of their results were explored, in Chapter VII. The figures used there, and again adopted here, are not exactly what is desired since they generally measure funds supplied through financial intermediaries by balance sheet differences in intermediaries' holdings of claims and equity securities. Hence the numerator of the ratio remains, to a large extent, gross of capital gains or losses. Such valuation changes have been largely eliminated from the denominator, the assets of all other groups, where they are much more important.

[27] The figures are based on net funds supplied by financial institutions, offsetting, for example, loans repaid against loans made during a year, or securities sold against securities acquired. The share of financial intermediaries in total gross funds supplied would of course be different, the extent and direction of the difference depending on the gross to net flow ratios of the various types of external and internal funds.

termediaries—in this case pointing to much larger net unrealized and realized capital gains in other sectors—but is also influenced by other factors and by the very approximative nature of many of the underlying data.

Even when allowances are made for the margins of error inherent in the estimates, there is no doubt that the increases in the share of financial intermediaries in national assets, intangible assets, and national wealth observed during the first half of this century are a continuation of movements in the same direction that were at work throughout the preceding century.

h. SHARE OF FINANCIAL INTERMEDIARIES IN NATIONAL ASSETS AND NATIONAL WEALTH DURING THE NINETEENTH CENTURY

We may conclude with a rapid glance at the trend of the share of financial intermediaries in national assets and intangible assets, and their relation to national wealth during the nineteenth century, which is informative even though the figures which have to be used are substantially less reliable than those available for the last fifty years. The necessary basic data for the decades between 1860 and 1900 are shown in Table 99; and figures as of 1805 can be sketched in.

In 1805 the assets of financial intermediaries—about $50 million—amounted to less than 2 per cent of national assets or national wealth, both of which can be estimated only very loosely. By 1860 the corresponding ratios were approximately 6 per cent for national assets and 8 per cent for national wealth. Rough as these figures are, there is no question that the increase in the share of financial intermediaries in national assets and national wealth between 1800 and 1860—the first year for which somewhat better estimates are available—was considerable.

Between 1860 and 1900 the share of financial intermediaries in national assets approximately doubled.[28] The rise appears to have been concentrated in the second half of this period, when the assets of financial intermediaries more than tripled—due primarily to the expansion of the banking system—while total national assets increased by only 120 per cent. During the first part of the period, i.e. between 1860 and 1880, national assets and the assets of financial

[28] The increase shown in Table 99 (from 5.5 to 9.5 per cent) is somewhat below that rate of increase, but would be slightly above it (from approximately 5.5 to 11.5 per cent) if the assets of trust departments of banks had been included, which cannot be estimated even roughly for the nineteenth century, but undoubtedly were practically negligible in 1860.

TABLE 99

Share of Financial Intermediaries in National Assets, Selected Years, 1860-1900
(dollars in billions)

YEAR	ASSETS OF FINANCIAL INTERMEDIARIES (1)	NATIONAL ASSETS: *Tangible* (2)	NATIONAL ASSETS: *Intangible* (3)	NATIONAL ASSETS: *Total* (4)	SHARE OF FINANCIAL INTERMEDIARIES IN: *Total National Assets* (5)	SHARE OF FINANCIAL INTERMEDIARIES IN: *Intangible Assets* (6)	FINANCIAL INTER-RELATIONS RATIO (7)
1860	$1.2	$15.0	$6.5	$21.5	5.6%	18.5%	43.3%
1870	2.5	31.5	17.0	48.5	5.2	14.7	54.0
1880	4.5	45.2	26.3	71.5	6.3	17.1	58.2
1890	8.5	65.0	41.5	106.5	8.0	20.5	63.8
1900A[a]	15.2	90.2	68.8	159.0	9.6	22.1	76.3
1900B[a]	18.2	90.2	68.8	159.0	11.4	26.5	76.3

[a] Line A excludes, and line B includes, personal trust departments of banks; figures for 1860 to 1890 are comparable to 1900A.

Column	Year	Source
1	1860-1890	Rough estimates based primarily on assets of commercial and savings banks (*Historical Statistics*, Dept. of Commerce, 1949, pp. 262-263) and of insurance companies (*Spectator Yearbook*).
	1900	Table 10.
2	1860-1890	Census estimates (*Wealth, Debt and Taxation, 1913*, Dept. of Commerce, 1915, p. 25) roughly adjusted for 1860 and 1870 for tax exempt wealth omitted from Census figures and for value of slaves included in original estimates for 1860 (cf. Raymond W. Goldsmith, *Income and Wealth*, Series II, Cambridge, Bowes and Bowes, 1952, p. 317).
	1900	*A Study of Saving . . .*, Vol. III, Table W-9.
3	1860-1890	Rough estimates.
	1900	*Ibid.*, Vol. III, Table W-9.
4	1860-1900	Col. 2 plus col. 3.
5-6	1860-1900	Col. 1 divided by cols. 4 and 3, respectively.
7	1860-1900	Col. 3 divided by col. 2.

intermediaries seem to have increased at approximately the same rate.

The proportion of financial intermediaries' assets to all intangibles rose considerably less rapidly than their share in total national assets: from slightly under one-fifth in 1860 to fully one-fourth in 1900. The slower rise reflected the concurrent increase in the ratio of intangible to tangible assets in the economy, which is evident in column 7 of Table 99. Here again the entire advance in the share of financial intermediaries occurred after 1880.

The ratio of financial intermediaries' assets to national wealth (approximated from Table 99, columns 1 and 2, and given, as before, because of its more common usage) exhibits a rapid rise between 1860 and 1900, increasing from 8 per cent to 17 per cent. Apart from the lack of movement of the ratio between 1860 and 1870, the rise is more regular than in either the national asset or the intangible asset ratio.

The rise is thus more rapid in the national wealth share than in the national asset share—the same relation that has been observed during the twentieth century—reflecting an increase in the ratio of national assets to national wealth. The national financial interrelations ratio increased from something like 0.25 in 1805 (hardly more than a rough guess) and 0.43 in 1860 to 0.76 in 1900. The significant fact, however, is not so much the movement in the ratio, which is in the same direction and possibly proceeded at approximately the same speed as that observed during the first half of the twentieth cenutry, as its low level at midcentury. Since the national financial interrelations ratio is slightly above zero even in a primitive economy, the fact that it was probably still below one-half in the United States in the middle of the nineteenth century is statistical corroboration of the fact that the web of financial interrelations was in its infancy compared with the size and density to which it was to grow during the following one hundred years.