Volume Title: The Flow of Capital Funds in the Postwar Economy

Volume Author/Editor: Raymond W. Goldsmith

Volume Publisher: NBER

Volume ISBN: 0-870-14112-0

Volume URL: http://www.nber.org/books/gold65-1

Publication Date: 1965

Chapter Title: The Market for U.S. Government Securities

Chapter Author: Raymond W. Goldsmith

Chapter URL: http://www.nber.org/chapters/c1685

Chapter pages in book: (p. 165 - 186)

CHAPTER 6

The Market for U.S. Government Securities [1]

Basic Characteristics of the Market

THE market for Treasury securities occupies a special, and particularly important, position in the American postwar capital market. For long-term obligations of the U.S. government are one of the main outlets for savers' funds, competing with state and local government securities, corporate bonds, mortgages, and less directly with equity securities; and short-term Treasury securities in the postwar period came to constitute one of the most important forms of holding the liquid reserves of business, financial institutions, and wealthy individuals, competing primarily with demand and time deposits in commercial banks, with certain short-term instruments such as bankers' acceptances, commercial paper, and finance company paper, and to a lesser extent with savings deposits in commercial banks, mutual savings banks, and savings and loan associations. After World War II

1 Because of the richness and high quality of the literature on the market for Treasury securities, and the fact that the Postwar Capital Market Study includes two special studies in this field (George Hanc, *The United States Savings Bond Program in the Postwar Period,* New York, NBER Occasional Paper 81, 1962, and Morris Mendelson, "Some Aspects of the Market for Treasury Securities," in preparation), this chapter is limited in the main to a summary of the characteristics and changes in the holdings of Treasury securities during the postwar years and their comparison with earlier periods. The discussion specifically excludes subjects such as the determination of the supply of Treasury securities, the organization of the dealer market for Treasury securities, the management of the federal debt and its relations to monetary policy, and the determinants of the yield differentials among Treasury securities according to maturity and between Treasury securities and other claims—for each of which subject an extensive monographic or textbook literature exists.

Treasury securities—primarily those of maturity up to one year—became the balancing item in the portfolios not only of most financial institutions but also of many large nonfinancial corporations. This means that Treasury securities are usually not the first choice of any substantial group of private investors, but are acquired when the assets in which financial institutions or nonfinancial corporations prefer to invest their funds are not available in sufficient amounts or on satisfactory terms, and they are liquidated when the demand for these other assets is high.[2] In the case of the Federal Reserve banks, Treasury securities, although one of the main assets, are not acquired for yield or liquidity but in pursuance of the banks' monetary policy. Here, too, the acquisition or sale of Treasury securities is not primarily determined by the characteristics of these securities, such as safety and yield, but by other considerations.

Only in the postwar period did this role of Treasury securities as the balancing item in the portfolios of many investor groups become evident, although a trend in that direction could be detected after World War I. The development, of course, was caused by the sharp increase during the war in the volume of Treasury securities outstanding, both in absolute and relative terms, which is evident from Table 49.

Between the last quarter of the nineteenth century and the beginning of World War I, the volume of Treasury securities was so small as to make them a capital market instrument of at best secondary importance; their significance was further reduced because a large part of them was held permanently by national banks as a basis for note issues. The large increase in the federal debt caused by American participation in World War I brought Treasury securities, for the first time since the turn of the century on a large scale, into the portfolios of financial institutions other than national banks and into those of individuals. The basic change, however, was brought about by the massive issues of Treasury securities during World War II, as a result of which their share in the total assets of financial institutions rose considerably from 1939 to 1945 and the ratio of Treasury securities to the total of the five selected instruments shot up.

[2] These preferred assets are business loans and to a lesser extent consumers loans for commercial banks, mortgage loans for savings and loan associations and mutual savings banks, mortgage loans and corporate bonds for life insurance companies, consumers loans for finance companies, common stock and state and local government securities for property insurance companies, and plant and equipment, inventories and accounts receivable credit for nonfinancial corporations.

TABLE 49

POSITION OF U.S. GOVERNMENT SECURITIES IN THE NATIONAL BALANCE SHEET, SELECTED DATES, 1900-58

	U.S. Government Securities Outstanding (billion dollars) (1)	PERCENTAGE SHARE OF U.S. GOVERNMENT SECURITIES IN: National Assets (2)	Financial Assets (3)	Claims (4)	Main Capital Market Instruments[a] Outstanding (5)	Total Assets of: Financial Institutions (6)	Nonfarm Households (7)
1900	1.2	0.8	1.8	2.8	5.2	3.9	0.9
1912	1.2	0.4	0.8	1.3	2.1	2.2	0.3
1922	23.6	3.7	7.3	10.9	18.8	9.4	4.0
1929	17.5	1.8	3.2	5.6	6.8	5.8	1.1
1939	55.1	6.4	11.3	15.9	26.2	19.5	2.5
1945A	278.5	18.3	28.7	36.8	58.1	52.1	10.2
1945B	279.0	18.2	28.5	35.8	57.9	51.6	9.6
1951	261.1	10.7	19.8	25.9	44.5	34.2	6.0
1958	288.5	7.7	13.9	19.4	28.5	25.0	3.7

Source: National Balance Sheet, Vol. II, unless otherwise specified.
Col. 1, 1900-45A: Table III-7f, line III-12.
Col. 1, 1945B-58: Table III-7, line III-12. Includes securities of govt. agencies.
Cols. 2-4: Tables I and Ia, lines V, II-21, III-14.
Col. 5, 1900-45A: Bonds from Tables III-4b, 5a, 6a, and 7f, line III-12; nonfarm residential mortgages from Table IV-b-11c-1, line 8; common stock from Goldsmith, Supplementary Appendixes to Financial Intermediaries Since 1900, New York, 1958, Table F-4, line 2.
Col. 5, 1945B-58: Bonds from Table IV-c-12, lines 4, 5, 6, and 7; nonfarm residential mortgages from Table IV-c-11a and 11b, line 8; common stock from Table IV-b-17, line 11.
Col. 6: Tables I and Ia, col. 5, lines II-13 and V.
Col. 7: Tables I and Ia, col. 1, lines II-13 and V.

[a]U.S. government securities, state and local government securities, corporate bonds, common stocks, nonfarm residential mortgages.

Developments During the Postwar Period

The essential figures needed to follow developments in the market for Treasury securities during the postwar period are provided in Tables 50 to 52 and Chart 12. The data on the absolute values of holdings and of net flows of Treasury securities by the various sectors may be found in the basic tables in Volume II of *Studies in the National Balance Sheet* not only for the total of all Treasury securities, but also separately for short-term (less than one year) obligations, for savings bonds, and for other long-term obligations.

While the amount of Treasury securities outstanding increased by about 1 per cent between the end of 1945 and the end of 1958, three investor groups expanded their holdings substantially, both in absolute and relative terms: government insurance and pension funds, which increased their holdings by 125 per cent; state and local governments,

TABLE 50

STRUCTURAL CHANGES IN OWNERSHIP OF U.S. GOVERNMENT SECURITIES DURING THE POSTWAR PERIOD

		Outstandings (billion dollars)		Aggregate Net Flows, 1946-58 (billion dollars)	NET FLOWS (ANNUAL AVERAGES)					
					Amounts (billion dollars)			Distribution (per cent)		
		1945 (1)	1958 (2)	(3)	Cycle I 1946-49 (4)	Cycle II 1949-54 (5)	Cycle III 1954-58 (6)	Cycle I 1946-49[a] (7)	Cycle II 1949-54 (8)	Cycle III 1954-58 (9)
1.	Nonfarm households	59.69	58.57	-1.12	0.61	-0.33	-0.01	13.1	-7.6	-2.8
2.	Agriculture	4.15	5.21	1.06	0.16	0.04	0.08	3.4	0.9	22.2
3.	Nonfinancial corporations	20.72	17.62	-3.10	-0.76	0.88	-0.61	-16.3	20.4	-169.4
4.	Finance	181.65	176.01	-5.64	-5.20	2.33	-0.21	-111.8	53.9	-58.3
	a. Federal Reserve banks and Treasury monetary funds	24.29	26.44	2.15	-0.90	0.86	-0.02	-19.4	19.9	-5.6
	b. Government insurance and pension funds	24.05	54.05	30.00	3.29	2.49	1.53	70.8	57.6	425.0
	c. Commercial banks	90.61	66.18	-24.43	-5.96	0.28	-1.00	-128.2	6.5	-277.8
	d. Mutual savings banks	10.68	7.26	-3.42	0.08	-0.50	-0.39	1.7	-11.6	-108.3
	e. Savings and loan associations	2.42	3.82	1.40	-0.25	0.10	0.38	-5.4	2.3	105.6
	f. Investment companies	0.23	0.49	0.26	-0.02	0.01	0.06	-0.4	0.2	16.7
	g. Credit unions	0.18	0.13	-0.05	-0.01	0	0	-0.2	0	0
	h. Life insurance	20.58	7.18	-13.40	-1.70	-1.31	-0.59	-36.6	-30.3	-163.9
	i. Fire and casualty insurance	3.22	5.40	2.18	.48	0.27	-0.16	10.3	6.2	-44.4
	j. Noninsured pension plans	1.47	2.45	0.98	.15	0.11	-0.04	3.2	2.5	-11.1
	k. Other private insurance	0.52	0.80	0.28	0	0.02	0.04	0	0.5	11.1
	l. Other finance	3.40	1.81	-1.59	-.36	0	-0.02	-7.7	0	-5.6
5.	State and local governments	4.99	11.08	6.09	.23	0.77	0.56	4.9	17.8	155.6
6.	Federal government	4.52	5.82	1.30	.15	-0.02	0.18	3.2	-0.5	50.0
7.	Rest-of-world assets	2.57	7.61	5.04	.16	0.65	0.37	3.4	15.0	102.8
8.	Total	278.29	281.92	3.63	-4.65	4.32	0.36	-100.0[a]	100.0	100.0

Source: National Balance Sheet, Vol. II. Cols. 1-2 from Table IV-b-13; cols. 3-9 from Table VIII-b-13.
Note: Components may not add to totals because of rounding here and elsewhere in this chapter.

[a]The signs have been reversed to match the sign of the numerator.

TABLE 51

DISTRIBUTION OF HOLDINGS OF U.S. GOVERNMENT SECURITIES, BY SECTOR, 1945-58
(per cent)

	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1.Nonfarm households	21.4	22.8	23.7	24.0	24.0	23.9	23.1	22.5	22.0	21.1	21.6	22.4	22.1	20.8
2.Agriculture	1.5	1.6	1.7	1.8	1.8	1.8	1.8	1.7	1.7	1.8	1.8	1.8	1.9	1.8
3.Nonfinancial corporations	7.4	5.8	5.4	5.8	6.4	7.6	7.8	7.3	7.7	6.8	8.1	6.6	6.4	6.2
4.Finance	65.3	65.3	64.2	63.1	62.4	60.8	61.3	61.8	61.5	62.6	60.2	60.4	60.4	62.4
a.Federal Reserve banks and Treasury monetary funds	8.7	9.0	8.8	9.2	7.4	8.1	9.2	9.3	9.4	9.0	8.9	9.1	8.9	9.4
b.Govt. insurance and pension funds	8.6	10.7	12.3	13.7	14.3	14.5	15.8	16.8	17.3	17.6	18.3	19.4	20.0	19.2
c.Commercial banks	32.6	28.8	26.9	24.8	26.1	24.2	23.7	23.7	23.1	24.8	22.0	21.2	21.3	23.5
d.Mutual savings banks	3.8	4.5	4.7	4.5	4.4	4.2	3.8	3.5	3.3	3.1	3.0	2.9	2.8	2.6
e.Savings and loan associations	0.9	0.8	0.7	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.8	1.0	1.2	1.4
f.Investment companies	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
g.Credit unions	0.1	0.1	0.1	0.1	0.1	0	0.1	0.1	0	0	0	0.1	0	0
h.Life insurance	7.4	8.3	7.8	6.6	5.9	5.2	4.2	3.8	3.6	3.3	3.1	2.7	2.6	2.5
i.Fire and casualty insurance	1.2	1.3	1.6	1.8	1.9	2.1	2.1	2.2	2.2	2.2	2.1	2.1	2.0	1.9
j.Noninsured pension plans	0.5	0.6	0.7	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.0	0.9	0.9
k.Other private insurance	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
l.Other finance	1.2	0.9	0.5	0.7	0.6	0.6	0.5	0.6	0.6	0.7	0.5	0.5	0.6	0.6
5.State and local governments	1.8	1.7	2.0	2.1	2.1	2.2	2.4	2.7	3.1	3.6	3.7	4.0	4.3	3.9
6.Federal government	1.6	1.9	2.0	2.1	2.1	2.0	1.9	1.9	1.8	1.9	1.9	2.0	2.2	2.1
7.Rest-of-world assets	0.9	0.8	1.0	1.1	1.1	1.7	1.7	2.0	2.1	2.3	2.7	2.8	2.8	2.7
8.Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
9.Total (billion dollars)	278.29	259.52	257.24	252.77	257.12	256.68	259.14	267.08	274.70	278.37	280.21	275.00	273.99	281.92

Source: National Balance Sheet, Vol. II, Table IV-b-13.

TABLE 52

DISTRIBUTION OF FLOW OF FUNDS, U.S. GOVERNMENT SECURITIES, BY SECTOR, 1946-58
(per cent)

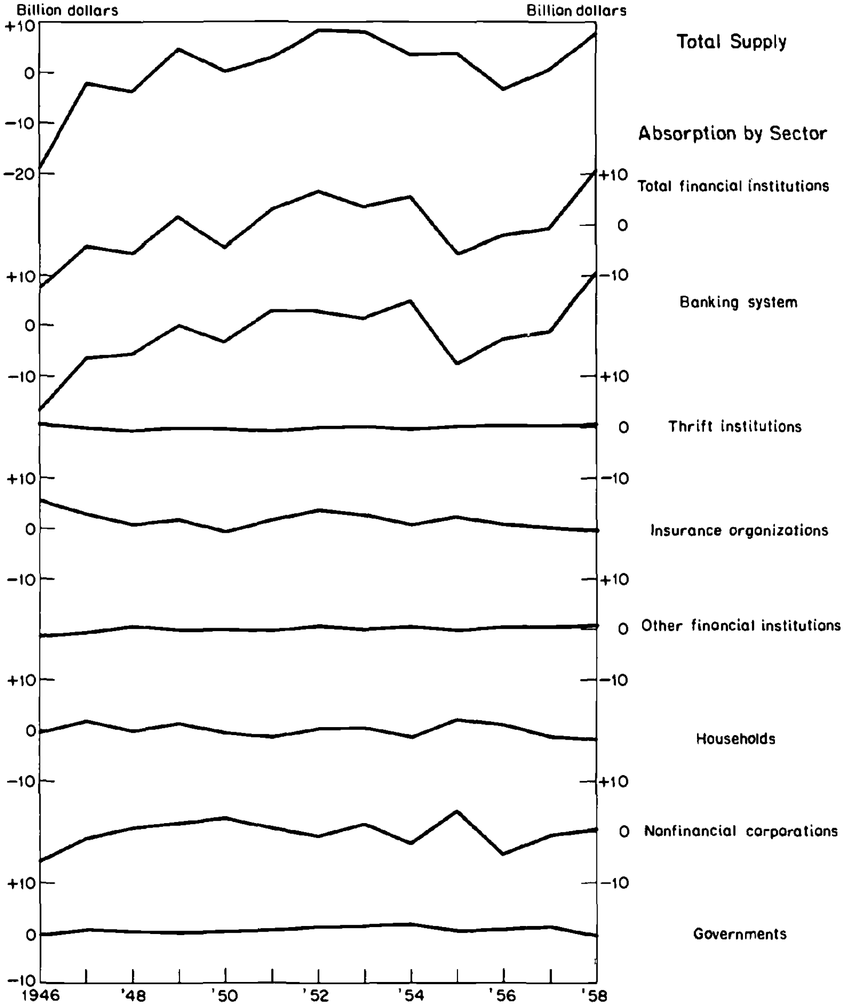
	1946[a]	1947[a]	1948[a]	1949	1950[a]	1951	1952	1953	1954	1955	1956[a]	1957[a]	1958
1.Nonfarm households	-2.6	79.8	-5.1	22.3	-75.0	-58.9	2.9	2.5	-41.7	95.7	25.2	-63.0	-25.6
2.Agriculture	0.3	7.5	4.9	2.8	- 6.8	0.8	-1.0	1.3	6.5	10.9	-2.5	3.3	1.1
3.Nonfinancial corporations	-30.4	-52.6	17.9	44.1	652.3	37.8	-10.1	20.7	-62.4	216.8	-104.1	-44.2	2.4
4.Finance	-64.4	-191.7	-128.9	26.2	-1,027.3	111.0	80.3	50.5	143.1	-310.3	-45.8	-51.9	131.4
a.Federal Reserve banks and Treasury monetary funds	-4.9	-34.6	17.2	-102.3	431.8	122.8	11.3	16.0	-27.0	-8.2	5.0	-42.0	27.5
b.Govt. insurance and pension funds	20.0	164.5	70.2	50.3	93.2	146.3	49.4	35.3	39.2	130.4	51.0	59.1	-7.8
c.Commercial banks	-84.3	-243.9	-147.6	100.7	-1,129.5	-20.7	22.7	1.4	151.2	-401.6	-68.9	-17.1	100.1
d.Mutual savings banks	5.9	8.8	-11.2	-1.1	-127.3	-42.7	-5.0	-3.1	-11.7	-15.8	-11.1	-23.2	-3.7
e.Savings and loan associations	-2.2	-11.8	-6.3	0	6.8	4.5	2.4	1.7	2.7	17.4	10.0	21.5	8.2
f.Investment companies	-0.3	0.4	-1.1	0.9	4.5	0	-0.1	0	0	7.6	0.5	0	1.8
g.Credit unions	0	0	-0.4	-0.5	-4.5	0.8	0	-0.1	0	0	0.2	-0.6	0
h.Life insurance	5.6	-70.6	-73.2	-33.6	-415.9	-99.6	-9.6	-5.5	-20.7	-26.6	-23.1	-29.3	1.9
i.Fire and casualty insurance	1.0	25.9	11.0	11.7	79.5	5.3	4.3	2.8	3.0	-7.6	-7.5	-11.6	-0.8
j.Noninsured pension plans	1.0	7.0	2.9	3.4	47.7	4.9	0	2.1	0.3	16.3	-4.5	-14.9	0.4
k.Other private insurance	0.1	0.4	0	0	2.3	0.8	0.4	0.1	1.1	3.8	0.7	-0.6	0.8
l.Other finance	-6.2	-37.7	9.6	-3.4	-15.9	-11.4	4.7	-0.1	4.9	-26.1	2.0	6.6	3.0
5.State and local governments	-3.3	28.9	7.2	0.5	81.8	15.0	13.6	17.2	39.2	22.3	15.9	40.9	-8.8
6.Federal government	2.9	1.8	2.2	1.8	-54.5	-3.7	1.3	0.3	3.5	1.1	5.7	24.3	-1.1
7.Rest-of-world assets	-2.5	26.3	1.8	2.3	329.5	-2.0	13.0	7.5	11.7	63.6	5.7	-9.4	0.6
8.Total	-100.0	-100.0	-100.0	100.0	-100.0	100.0	100.0	100.0	100.0	100.0	-100.0	-100.0	100.0
9.Total (billion dollars)	-18.77	-2.28	-4.47	4.35	-0.44	2.46	7.94	7.62	3.67	1.84	-4.41	-1.81	7.93

Source: National Balance Sheet, Vol. II, Table VIII-b-13.

[a]The signs have been reversed to match the sign of the numerator.

CHART 12

MARKET FOR U.S. GOVERNMENT SECURITIES: SUPPLY AND ABSORPTION BY SECTOR, 1946–58



Source: *National Balance Sheet,* Vol. II, Tables VIII-b-13 and VIII-c-12.

which expanded theirs by 122 per cent; and foreigners (mostly monetary authorities), who tripled their holdings (see Table 50).

The Federal Reserve banks, although making net purchases of fully $2 billion, increased their holdings by only 9 per cent. Among domestic private financial institutions, only two groups added appreciably to their holdings: fire and casualty insurance companies, which increased their holdings almost 70 per cent, and savings and loan associations, which increased theirs by 60 per cent. All these purchases were almost offset by the massive net sales of commercial banks, totaling 27 per cent of their holdings at the end of 1945, and of life insurance companies, which liquidated 65 per cent of their holdings at the beginning of the period. Substantial sales, absolutely or relatively, were also made by mutual savings banks and nonfinancial corporations. The holdings of nonfarm households were virtually the same at the end of the period as at the beginning.

Turning to net flows during each of the three business cycles, the differences among investor groups were most pronounced in Cycle I when large liquidation of Treasury securities by banks and life insurance companies were absorbed almost exclusively by the U.S. government, either by retirement of securities or by acquisitions on behalf of its pension and insurance funds. The net sale or purchase balances of the different groups were smaller in Cycle II and still smaller in Cycle III. Government insurance and pension funds continued to be the main net buyers of Treasury securities, while life insurance companies and mutual savings banks were the main sellers, joined in Cycle III by commercial banks and nonfinancial corporations.

Closer study of developments in the market for U.S. government securities during the postwar period requires at least annual data, though quarterly figures are preferable,[3] and is best based on the share of Treasury securities in the total assets of the different holder groups and in the total users of funds rather than on the absolute figures. The basic data will be found in Tables 50 to 54. In following developments in the market for Treasury securities, it is also necessary to consider the level of interest rates on U.S. government securities, particularly the yield differential compared to other investments, primarily corporate bonds, commercial loans, mortgages, state and local government securities, and in the case of individual holders, the rates of savings bank deposits and savings and loan shares. The course of

[3] Such figures are available beginning with 1952 in the Federal Reserve Board's flow-of-funds statistics.

TABLE 53

SHARE OF U.S. GOVERNMENT SECURITIES IN TOTAL ASSETS OF MAIN SECTORS AND SUBSECTORS, 1945-58
(per cent)

	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1.Nonfarm households	9.6	8.7	8.1	7.6	7.5	6.7	6.0	5.7	5.5	4.9	4.6	4.4	4.2	3.7
2.Agriculture	4.0	3.6	3.3	3.3	3.4	3.0	2.7	2.7	2.8	2.9	3.0	2.8	2.7	2.5
3.Nonfinancial corporations	8.3	5.2	4.1	4.0	4.4	4.4	4.2	3.8	4.0	3.3	3.6	2.7	2.4	2.3
4.Finance	51.6	48.0	43.9	40.5	39.4	35.9	34.2	33.2	32.3	31.2	28.1	26.4	25.2	25.0
a.Federal Reserve banks and Treasury monetary funds	34.8	33.2	30.0	29.5	25.2	27.8	30.7	30.8	32.6	32.0	31.2	31.2	29.8	33.4
b.Govt. insurance and pension funds	93.1	94.3	94.5	94.1	93.6	91.6	91.3	91.2	90.5	88.7	87.9	86.4	84.3	81.8
c.Commercial banks	56.5	49.8	44.4	40.3	42.1	36.4	34.0	33.3	32.6	33.8	28.9	26.6	25.8	27.4
d.Mutual savings banks	62.7	62.8	60.6	55.4	52.4	47.9	41.5	37.0	33.5	29.6	26.8	23.7	21.3	19.1
e.Savings and loan associations	27.6	19.6	14.8	11.2	9.9	8.8	8.3	7.9	7.1	6.4	6.2	6.4	6.5	6.9
f.Investment companies	6.3	5.1	5.4	3.9	4.1	3.7	3.0	2.4	2.3	1.6	2.3	2.3	2.4	2.4
g.Credit unions	40.9	36.0	30.5	22.9	16.9	12.0	11.7	9.2	6.8	5.7	4.7	4.3	3.4	3.0
h.Life insurance	45.9	44.6	38.4	30.0	25.3	20.7	16.0	13.8	12.4	10.6	9.4	7.8	6.8	6.6
i.Fire and casualty insurance	42.1	41.9	43.4	43.5	42.0	40.4	37.8	36.2	34.4	30.7	27.4	25.0	23.8	21.1
j.Noninsured pension plans	54.8	50.7	46.5	42.7	39.7	36.9	31.1	25.4	22.6	18.1	16.7	13.4	10.8	8.8
k.Other private insurance	28.4	27.1	25.9	24.8	23.4	22.5	22.0	21.5	20.6	20.4	21.0	20.7	20.2	20.5
l.Other finance	46.8	41.0	29.7	34.3	28.4	24.0	19.8	23.7	22.2	19.8	14.3	15.2	15.1	15.3
5.State and local governments	7.1	5.2	5.1	5.1	5.1	4.9	4.8	5.3	6.0	6.6	6.4	6.2	6.2	5.5
6.Federal government	5.7	8.1	7.3	6.8	6.8	5.6	5.0	4.9	4.8	5.0	4.7	4.9	5.2	5.0
7.Total	18.0	15.6	13.8	12.7	12.7	11.2	10.4	10.2	10.1	9.5	8.8	8.1	7.7	7.3

Source: <u>National Balance Sheet</u>, Vol. II, Tables III-1, III-3, III-4, III-5, III-5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i, 5j, 5k, 5m, III-6, III-7 (line II-13); line 8 from Table I, line II-13.

TABLE 54

SHARE OF NET PURCHASES OF TREASURY SECURITIES IN TOTAL USES OF FUNDS OF MAIN SECTORS AND SUBSECTORS, 1946-58
(per cent)

	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
1.Nonfarm households	-1.3	4.4	-0.5	2.3	-0.6	-2.4	0.4	0.3	-2.2	2.1	1.3	-1.3	-2.4
2.Agriculture	0.7	1.8	3.2	3.1	-0.2	0.2	-3.2	2.9	3.4	3.5	-1.5	0.6	0.7
3.Nonfinancial corporations	-25.5	-3.6	2.8	11.0	6.2	2.3	-2.4	5.1	-6.9	7.1	-9.1	-1.7	0.5
4.Finance	-755.6	-18.7	-33.4	9.3	-17.8	9.5	19.6	15.5	17.9	-15.6	-6.7	-3.2	27.6
a.Federal Reserve banks and Treasury monetary funds	-146.0	-16.0	20.1	106.0	-1,266.7	108.6	35.3	-196.8	58.9	-10.1	24.4	-74.5	-103.8
b.Govt. insurance and pension funds	102.7	96.6	90.5	86.2	31.3	88.5	90.1	79.6	53.5	74.1	62.8	37.5	-50.4
c.Commercial banks	151.2	-95.0	1,885.7	140.4	-43.5	-4.8	19.5	2.4	58.7	-86.9	-43.5	-5.8	50.3
d.Mutual savings banks	64.0	19.8	-50.0	-4.9	-60.9	-106.1	-22.6	-12.6	-20.1	-14.4	-24.1	-22.8	-11.1
e.Savings and loan associations	-27.2	-17.6	-20.1	0	1.3	4.6	5.6	3.2	2.0	5.3	8.5	7.5	9.4
f.Investment companies	-41.7	4.8	-31.2	15.4	7.1	0	-1.9	0	0	16.5	2.8	0	10.5
g.Credit unions	0	0	-18.2	-15.4	-11.8	10.0	0	-2.6	0	0	1.9	-1.9	0
h.Life insurance	28.4	-44.6	-87.2	-36.9	-42.2	-57.9	-15.4	-8.1	-14.0	-8.7	-17.7	-9.8	2.7
i.Fire and casualty insurance	31.7	49.6	43.4	45.9	36.1	13.3	25.6	14.3	9.5	-13.9	-53.2	-21.6	-5.5
j.Noninsured pension plans	31.0	25.3	20.3	20.2	22.2	8.5	-0.2	8.3	0.4	14.6	-7.8	-9.5	1.1
k.Other private insurance	7.4	7.3	0	3.5	6.1	12.2	15.5	8.1	17.6	30.0	15.0	-33.3	25.3
l.Other finance	65.0	104.9	72.9	-25.9	-9.7	-2,800.0	92.5	-2.4	10.5	-240.0	-225.0	18.2	14.5
5.State and local governments	-26.6	14.3	6.0	0.3	4.6	4.4	10.9	11.8	11.8	3.4	5.6	4.9	-4.4
6.Federal government	-2.7	0.7	1.8	3.7	-2.8	-1.1	4.3	0.5	18.1	0.3	45.5	29.1	-3.9
7.Total	-31.3	-2.3	-4.1	4.8	-1.1	1.5	4.6	4.7	2.1	0.3	-2.4	-0.8	3.9

Source: National Balance Sheet, Vol. II, Tables VII-I, VII-3, VII-4, VII-5, VII-5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 5i, 5j, 5k, 5m, VII-6, and VII-7 (line II-13); line 7 from Table V, line II-13.

these differentials over the postwar period may be followed in Table 57.

The picture is fairly simple for the holdings of Treasury securities by nonfarm and farm households. Not only was the total held approximately the same at the beginning and at the end of the period, but annual fluctuations were also small, with the exception of 1958 when net sales of nonfarm households amounted to about $2 billion or 3 per cent of holdings.[4] Throughout the period the bulk of all the holdings of households was in savings bonds, a legacy from the intensive sales drives of World War II.[5] These holdings rose over the period from $44.5 to $48.25 billion,[6] but this increase was less than interest accruing to holders and added to the maturity value of the bonds on which the statistics are based. Hence, on a cash basis, redemptions of savings bonds at or before maturity slightly exceeded cash payments for newly acquired savings bonds. There is no comprehensive information on the extent to which the changes in savings bonds outstanding were the result of net liquidations by old holders and net purchases by new holders, or of the shifts that may have occurred among groups of individual holders of savings bonds, although there is some evidence that most of the holdings are owned by individuals in the lower and middle income groups.[7]

There is no clear relation between the net acquisitions or liquidations of savings bonds and the business cycle change. Net acquisitions prevailed throughout Cycle I from 1946 to 1949 and proceeded at an average level of $1.5 billion per year.[8] These acquisitions may be explained by investors' inertia—a considerable proportion of acquisitions of savings bonds resulted from payroll deduction plans—and by the relatively favorable yield on savings bonds compared to savings deposits and savings and loan shares. Since the beginning of 1951, net sales predominated, particularly if the calculation is made on a cash rather than on an accrual basis, and net redemptions considerably increased in the three closing years of the period. These liquidations were probably influenced by the declining relative yield on sav-

[4] A much larger increase—over $5 billion—occurred in 1959, partly as a result of substantial purchases of the new 5 per cent notes which offered an unprecedentedly high yield for this type of security.

[5] The market for U.S. savings bonds is described in detail by Hanc in *U.S. Savings Bond Program.*

[6] *National Balance Sheet,* Vol. II, Table IV-b-13b, lines 1 and 3.

[7] Hanc, *U.S. Savings Bond Program,* Chapter 3.

[8] *National Balance Sheet,* Vol. II, Table VIII-b-13b, lines 1 and 3.

ings bonds, although their absolute yield if held to maturity was raised in steps from 2.9 to 3.75 per cent.[9] Since the absolute level of holdings of savings bonds was fairly stable while the total assets of nonfarm and farm households increased considerably, the share of savings bonds in individuals' total assets declined year after year, from about 6 per cent at the end of World War II to not much over 2½ per cent in 1958.

Households are also credited with substantial amounts of other U.S. long-term securities and with small amounts of short-term securities. Together these totaled slightly more than $19 billion in 1945 and nearly $16 billion in 1958, and constituted between one-fourth and two-fifths of individuals' holdings of savings bonds throughout the postwar period.[10] The movements in the net flow of these Treasury securities differ considerably from those of savings bonds, indicating that they are probably held by different groups of owners. Holdings of Treasury securities other than savings bonds by individuals declined during 1946–49 by about $3.7 billion from their initial level of somewhat over $19 billion, but then showed only relatively small changes. A definite shift, however, appears to have occurred from long- to short-term securities and the statistics also indicate larger fluctuations in the holdings of short- than of long-term Treasury securities. Great caution is, however, necessary in interpreting these figures because they are derived as residuals between the total amounts of Treasury securities outstanding and the reported or estimated holdings of other types of Treasury securities for each investor group, and therefore are subject to substantial errors of estimation of level and annual changes.[11] This movement and the participation of individuals in the issue of the 5 per cent notes in 1959 clearly indicate the effect of narrowing the interest rate differential (until it disappeared almost completely) between long-term Treasury securities and the highest-grade corporate issues. It only shows, however, that sharp shocklike shifts (what the Radcliffe report calls a "change in gear") in the absolute level of interest rates or in differentials may considerably affect the

[9] Hanc, *U.S. Savings Bond Program,* p. 18.

[10] *National Balance Sheet,* Vol. II, Tables IV-b-13a, IV-b-13b, and IV-b-13c.

[11] The most spectacular change in the holdings of long-term Treasury securities other than savings bonds by individuals occurred in 1959, after the end of the period covered in this report, partly in the form of the acquisition of substantial amounts of 5 per cent Treasury notes in the fall of 1959 (Hanc, *U.S. Savings Bond Program,* p. 63). A considerable part of the net purchases of 1959 was offset by net sales in 1960 and 1961 (*Federal Reserve Bulletin,* August 1962, p. 1026).

direction of the flow of funds of individuals, not that such a correlation habitually exists between more gradual interest changes and the distribution of the individuals' saving.

The absolute volume of holdings of Treasury securities by nonfinancial corporations did not change much over the postwar period as a whole (see Table 50). These holdings, however, were subject to considerable annual (and also seasonal) fluctuations, and some changes occurred in the type of Treasury securities held by nonfinancial corporations. Short-term issues, nevertheless, accounted at all times for more than three-fourths of total holdings. The volume of holdings at the end of 1945 obviously represented to a considerable degree the temporary investment of funds for which no use could be found in the holders' regular business. As a result, the holdings of Treasury securities by nonfinancial corporations were reduced by almost $7 billion, or nearly one-third, in the two years 1946–47. During the remainder of the period, sharp increases occurred in 1949–50, 1955, and, after the end of the period, in 1959. Considerable decreases took place in 1954, 1956, and 1960. Some of these movements confirmed the expectation that holdings of Treasury securities, as a form of liquid assets, are increased in recessions and decreased during recoveries and booms. Some of the movements, however, do not conform to this pattern, particularly the decrease in 1954 and the increases in 1955 and 1959. The movements in 1954–55 may possibly be connected with an advance in the dates of corporate income tax payments.[12] In comparison with total assets, Treasury securities lost almost continuously in importance, declining from over 8 per cent at the end of 1945 to slightly over 2 per cent in 1958, most of the decline occurring in 1946–47 and in 1956–57.

The market for Treasury securities is primarily influenced, of course, by the changes in the holdings of financial institutions. Here, at least seven groups must be distinguished whose behavior in their portfolio of Treasury securities during the postwar period showed considerable differences—the Federal Reserve banks, commercial banks, fire and casualty insurance companies and private pension funds, life insurance

[12] A more adequate analysis of the participation of nonfinancial corporations in the market for Treasury securities would require the use of quarterly rather than annual data, the breakdown of all nonfinancial corporations into a number of more homogeneous industrial and size groups, and the correlation of changes in the holdings of Treasury securities with shifts in other liquid assets of nonfinancial corporations. Although the material for such a study is available, there was neither a need here to investigate the problem in such detail nor the time to do so.

companies and mutual savings banks, and government insurance funds. Closer inspection shows that there are almost as many patterns of flows of Treasury securities as there are types of institutions—and that further diversity exists within groups, each reflecting the special situation of the different types of institutions.

Changes in the holdings of Treasury securities by the Federal Reserve System, although small compared to similar transactions by several other financial institutions, are of particular importance because of their effect on bank reserves and hence on the volume of credit. They are, of course, determined by considerations of monetary policy rather than by interest rate differentials. For the period as a whole, the Federal Reserve banks increased their holdings of Treasury securities by about $2 billion, or 9 per cent, but holdings ranged between $19 and $26 billion, annual changes being moderate except for a sharp reduction in 1949 and substantial increases in 1950–51.

Government insurance and pension funds used approximately three-fourths of the total net funds available to them during the postwar period to acquire Treasury securities, and actually showed a ratio of more than one-half in ten of the thirteen years of the period (see Tables 53 and 54). The proportion was considerably lower—around one-third of total net uses of funds—only twice (1950 and 1957); and there was only one year (1958) in which the holdings of Treasury securities were actually reduced, partly reflecting an unusually small increase of total net funds available due to the recession.

Four other groups of financial institutions also were net investors in Treasury securities. The share of Treasury securities in total net uses of funds, however, was considerable only for one of them, property insurance companies, the share averaging about one-sixth.[13] Net investment in Treasury securities accounted for a considerable part of all net uses of funds in 1946–50 and for a smaller but still positive share in 1951–54. In 1955–58, on the other hand, the holdings of Treasury securities were reduced in absolute amounts, thus acting as a source rather than a use of funds. This configuration—the gradual decline of the share of Treasury securities as a net outlet for funds—is also found, among the larger groups of financial institutions, for noninsured pension funds.

For some other groups, among which life insurance companies and mutual savings banks are the most important, Treasury securities con-

[13] See *National Balance Sheet,* Vol. II, Table VII-5i.

stituted during the postwar period a predominant source of funds, rather than an outlet. Life insurance companies financed more than one-fifth of their total net uses of funds through net sales of Treasury securities. The corresponding share was about one-sixth for mutual savings banks. Treasury securities were relatively most important as a source of funds in the early years of the period, particularly from 1948 to 1951.

Commercial banks show a different pattern, which is explained by their primary interest in short-term business loans. For the postwar period as a whole, net sales of Treasury securities provided almost one-third of all net uses of funds. Sales were heaviest in the years 1946–48, 1950, 1955–56, and 1959 when demands for commercial loans were high. In the recession years 1949, 1954, and 1958, purchases of Treasury securities absorbed more than one-half of the total net uses of funds.

During the postwar period, and particularly from 1948 on, as a whole foreigners constituted an important group of buyers of Treasury securities. Their net purchases amounted to $5 billion, mostly in short-term securities, and represented the third largest sectoral purchase balance following state and local governments and, by a large distance, federal pension funds. These purchases were made mostly by foreign monetary authorities and therefore were only in part motivated by commercial considerations. They averaged almost $0.5 billion per year, after net sales of $0.5 billion in 1946 when the dollar shortage was very pronounced, but reached over $1.0 billion within the period only twice (1950 and 1955).[14]

Historical Background

In the case of U.S. government securities, it is not necessary to go back beyond World War I. (The basic data for a historical review will be found in Tables 55 and 56 and Charts 13 and 14.) For the two benchmark dates of 1900 and 1912, the total value of U.S. government securities outstanding was extremely small and a large portion of the total was held by national banks as cover for their notes. In 1900, shortly after the public sale of Treasury securities in connection

[14] The net purchase balance rose to an all-time high with about $3.0 billion in 1959 (*Flow of Funds/Saving Accounts, 1946–1960,* Federal Reserve Board, Supplement 5, p. 40).

TABLE 55

DISTRIBUTION OF U.S. GOVERNMENT SECURITIES AMONG DOMESTIC HOLDER GROUPS, 1900-58
(per cent)

	1958 (1)	1945A (2)	1945B (3)	1939 (4)	1929 (5)	1912 (6)	1900 (7)
1. Households	23.3	23.2	25.2	20.0	31.2	33.3	46.5
2. Nonfinancial corporations	6.4	7.5	6.4	3.8	19.5	0	0
3. State and local governments	4.0	1.8	1.6	0.5	1.6	0	0
4. Federal government[a]	2.1	1.6	1.6	4.3	0.3	0	0
a. Govt. lending agencies	1.5	0.5	0.6	1.7	0		
5. Financial institutions,[b] total	64.2	65.9	65.2	71.3	47.3	66.7	53.5
a. Monetary authorities[b]	9.6	8.8	8.8	5.3	3.2		
b. Commercial banks	24.1	32.9	33.0	34.7	28.9	64.8	41.6
c. Mutual savings banks	2.6	3.9	3.9	6.6	3.3	1.0	8.2
d. Savings and loan associations	1.4	0.9	0.9	0.2	0.1	0	0
e. Credit unions	0	0.1	0.1	0	0	0	
f. Life insurance	2.6	7.5	7.5	11.5	2.1	0.1	0.5
g. Noninsured pension plans	0.9	0.5	0.5	0.3	0.3		
h. Fire and casualty insurance	2.0	1.2	1.2	2.5	2.9	0.6	3.1
i. Other private insurance	0.3	0.2	0.1	0.2	0	0.2	0.1
j. Govt. insurance and pension funds	19.7	8.7	8.8	9.7	4.8		
k. Investment companies	0.2	0.1	0	0	0.2		
l. Brokers and dealers[c]	0.3	0.8	0.2	0.1	0.6	0	0
m. Other finance	0.4	0.5	0	0.1	0.8	0	0
6. Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
7. Total (billion dollars)	274.3	275.7	274.4	47.0	16.2	1.2	1.2

Source: National Balance Sheet, Vol. II; cols. 1-2 from Table IV-b-13 and Table III-7c, III-5m-1; cols. 3-7 from Table IV-b-13d.

Note: A blank space indicates that the given type of financial institution did not exist in that year (see my Financial Intermediaries, Chart 3, p. 61).

For notes and further explanations, see Table 56.

TABLE 56

SHARE OF U.S. GOVERNMENT SECURITIES IN TOTAL ASSETS OF DOMESTIC HOLDER GROUPS, 1900-58
(per cent)

	1958 (1)	1954A (2)	1945B (3)	1939 (4)	1929 (5)	1912 (6)	1900 (7)
1. Households	3.5	8.8	9.3	2.2	1.0	0.3	0.7
2. Nonfinancial corporations	2.3	8.3	7.5	1.2	1.4	0	0
3. State and local governments	5.5	7.1	6.2	0.5	0.6	0	0
4. Federal government[a]	5.0	5.7	6.0	8.1	0.6	0	0
a. Govt. lending agencies	13.5	8.2	4.7	8.2	1.1		
5. Financial institutions, total[b]	25.0	51.6	52.1	19.5	5.8	2.2	3.9
a. Monetary authorities	33.4	34.8	53.8	13.1	9.4		
b. Commercial banks	27.4	56.5	56.5	24.6	7.1	3.5	5.2
c. Mutual savings banks	19.1	62.7	62.8	26.2	5.4	0.3	4.2
d. Saving and loan associations	6.9	27.6	28.1	1.9	0.3	0	0
e. Credit unions	3.0	40.9	48.3	3.1	0	0	
f. Life insurance	6.6	45.9	45.9	18.5	1.9	0	0.3
g. Noninsured pension plans	8.8	54.8	45.0	15.0	10.0		
h. Fire and casualty insurance	21.1	42.1	42.1	24.0	9.8	0.7	7.9
i. Other private insurance	20.5	28.4	22.6	5.8	0.4	1.2	4.0
j. Govt. insurance and pension funds	81.8	93.1	94.0	73.5	52.3		
k. Investment companies	2.4	6.3	4.6	1.1	0.9		
l. Brokers and dealers[c]	11.4	43.3	26.0	3.3	1.3	0	0
m. Other finance	19.7	54.4	0	0	0	0	0
6. Total	7.3	18.0	18.1	5.4	1.7	0.4	0.8

Source: National Balance Sheet, Vol. II, unless otherwise specified.
Line 1: Tables I and Ia, sum of nonfarm households and agriculture.
Lines 2-5: Tables I and Ia.
Line 4a: Table III-7c and Financial Intermediaries, Table A-24.
Lines 5a-5k, cols. 1-2: Tables III-5a through III-5k.
Lines 5a-5k, cols. 3-7: Numerators from Table IV-b-13d; denominators from Financial Intermediaries, Tables A-2 through A-5, A-19, A-20, A-8, A-10, A-12, A-13, A-9, A-14, A-11 and A-21.

NOTES TO TABLE 56 (concluded)

Line 5l: Table III-5m-1, and Goldsmith, Study of Saving, Vol. III, Table W-37.
Line 5m: Table III-5m minus Table III-5m-1.
Line 6: Tables I and Ia.

[a]Includes government corporations and credit agencies, and postal savings system.

[b]Columns 3-7 include federal reserve banks only. Columns 1-2 also include Treasury monetary funds.

[c]Columns 3-7 include unincorporated brokers and dealers only. Columns 1-2 include both incorporated and unincorporated.

See note to Table 55.

with the Spanish-American War, there were still appreciable holdings by mutual savings banks and property insurance companies, totaling somewhat more than one-tenth of the federal debt. These holdings had virtually disappeared by 1912. Similarly, holdings of households, estimated as a residual, declined from nearly one-half of the total in 1900 to one-third in 1912.

At the benchmark date of 1922,[15] when the value of Treasury securities outstanding ($23 billion) was already slightly below the peak, households held about one-half of the total, as a result of the intensive sales campaigns during and immediately after World War I. Holdings of nonfinancial corporations also were still substantial, accounting for 15 per cent of the outstanding federal debt. Financial institutions therefore held about one-third of all Treasury securities, most of which were in the hands of commercial banks, with mutual savings banks and life insurance companies following at a distance.

During the 1920's when the total amount of Treasury securities outstanding was reduced by about one-third, as well as during the 1930's when it almost trebled, Treasury securities gravitated toward the portfolios of financial institutions. How rapidly this process operated is indicated by the fact that financial institutions held almost one-half of all Treasury securities outstanding in 1929, compared to only one-third in 1922, and by 1939 held almost three-fourths of the total.

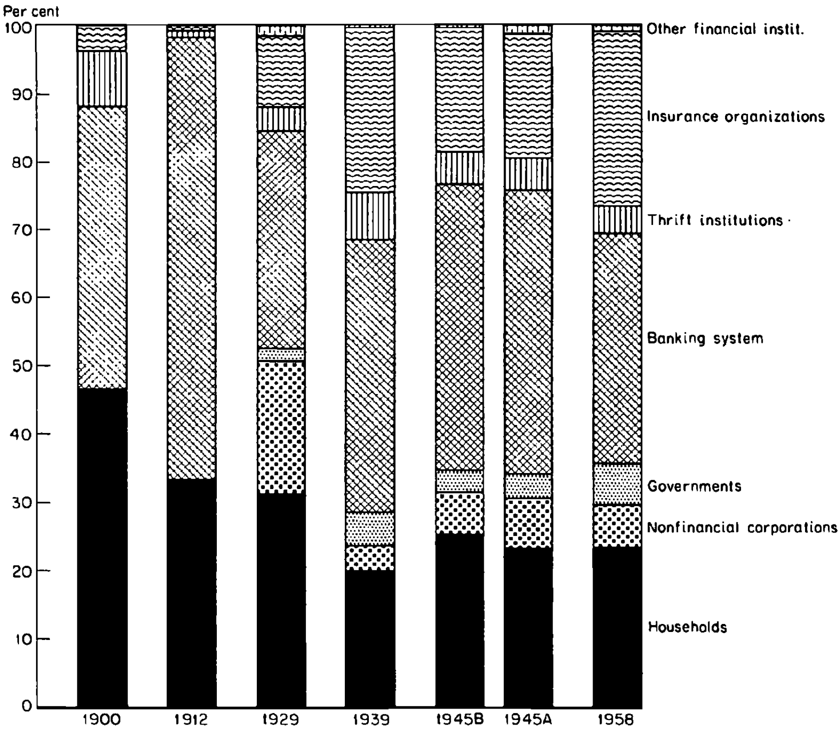
Among financial institutions, commercial banks remained by far the most important holders, absorbing in 1939 more than one-third of the total federal debt. Life insurance companies and government insurance and pension funds also were important holders, each accounting for about one-tenth of all Treasury securities outstanding. Individuals' holdings had been reduced to one-fifth of the total federal debt by about 1939, and the holdings of nonfinancial business had become relatively negligible.

[15] *National Balance Sheet,* Vol. II, Table IV-b-13d.

Up to World War II—with the possible exception of a few years during and after World War I—Treasury securities represented a substantial part of total assets only of financial institutions. Even here they acquired this position only during the 1930's, their share rising

CHART 13

DISTRIBUTION OF U.S. GOVERNMENT SECURITIES AMONG MAIN DOMESTIC HOLDER GROUPS, 1900–58



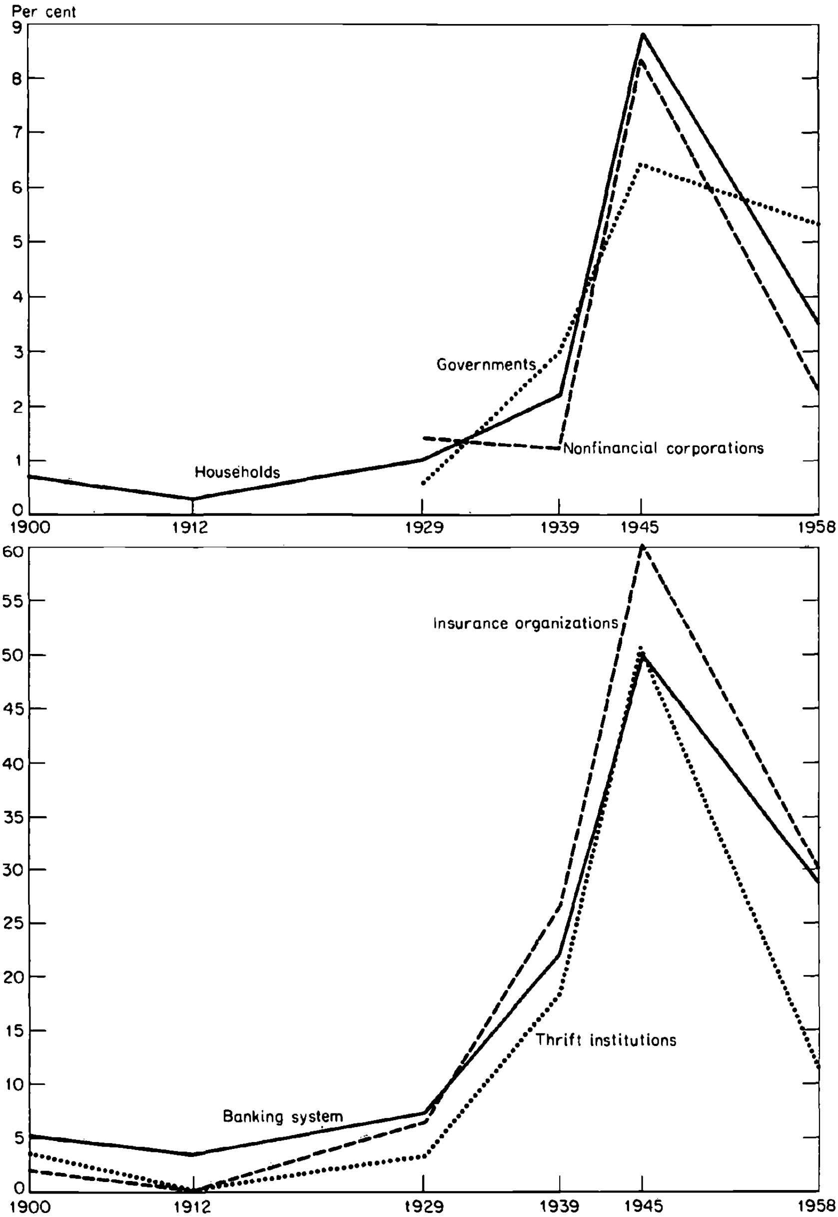
Source: Table 55.

—after a decline from 9 per cent in 1922 [16]—from 6 per cent in 1929 to 19.5 per cent in 1939. Apart from government insurance and pension funds, most of whose assets were always invested in Treasury securities, the obligations of the federal government represented the largest single asset only for commercial banks, mutual savings banks, and property insurance companies (for all of which they accounted

[16] *Ibid.*, and *Study of Saving*, Vol. III, Table W-11.

CHART 14

SHARE OF U.S. GOVERNMENT SECURITIES IN TOTAL ASSETS OF MAIN DOMESTIC HOLDER GROUPS, 1900–58



Source: Table 56.

TABLE 57

INTEREST RATE DIFFERENTIALS BETWEEN SELECTED FINANCIAL INSTRUMENTS AND LONG-TERM TREASURY SECURITIES, 1929, 1939, AND 1946-58

	Absolute Differentials					Relative Differentials				
	High-Grade Municipal Bonds (1)	High-Grade Corporate Bonds (2)	Conventional Home Mortgages (3)	Total Savings Deposits (4)	Common Stock (5)	High-Grade Municipal Bonds (6)	High-Grade Corporate Bonds (7)	Conventional Home Mortgages (8)	Total Savings Deposits (9)	Common Stock (10)
1929	0.67	1.13	(2.40)	0.47	-0.10	19	31	(67)	13	-3
1939	0.40	0.65	(2.60)	-0.36	1.84	17	28	(110)	-15	78
1946	-1.09	0.34	2.11	-0.94	1.78	-50	16	96	-43	81
1947	-.80	0.36	2.12	-0.96	2.88	-36	16	94	-43	128
1948	-.57	0.38	2.06	-1.09	3.34	-23	16	84	-45	137
1949	-.66	0.35	2.30	-0.87	4.32	-29	15	100	-38	187
1950	-.76	0.30	2.26	-0.82	3.95	-33	13	97	-35	170
1951	-.96	0.29	2.07	-0.97	3.55	-37	11	81	-38	138
1952	-.88	0.28	2.13	-0.88	2.82	-33	10	79	-33	105
1953	-.62	0.27	2.00	-1.01	2.56	-21	9	68	-34	87
1954	-.49	0.37	2.49	-0.51	2.25	-19	15	98	-20	89
1955	-.62	0.26	2.12	-0.67	1.26	-22	9	76	-24	45
1956	-.55	0.31	1.91	-0.74	1.02	-18	10	63	-24	33
1957	-.37	0.42	2.41	-0.81	0.86	-11	12	69	-23	25
1958	-.51	0.36	2.27	-0.65	0.62	-15	10	66	-19	18

Source

Treasury securities: Federal Reserve Bulletin, May 1940, p. 389.
1929, 1939, cols. 1-2: Ibid.
1929, 1939, col. 3: Extrapolated.
1929, 1939, col. 4: Computed from figures Study of Saving, Vol. I, as weighted averages of the three following financial institutions: commercial banks (deposit and interest payments) from Tables L-6, col. 6, and L-23, col. 7; mutual savings banks (deposits and interest payments) from Tables L-28, col. 2, and L-38, col. 4; and savings and loan associations (deposits and interest payments) from Table J-11, cols. 1 and 3.
1929, 1939, col. 5: 1940 Supplement to the Survey of Current Business, p. 76. Primary source is Moody's Investor Service figures for 200 stocks.
1946-58, all cols.: See sources to Table 48.

for about one-fourth of the total assets in 1939), and for life insurance and noninsured pension plans (among which their share was around one-sixth). The role of the U.S. government obligations was relatively negligible not only for nonfinancial corporations, for which it hardly exceeded 1 per cent, but also for nonfarm households, for which it amounted to 2 per cent, and for state and local governments, for which it was only ½ per cent.