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**GOVERNMENT
SECURITIES
MARKET**

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$$r = \frac{d}{f} \cdot \frac{T}{t} \cdot 100$$

where t is the time to maturity in days and T is 360.⁶⁶ The average discount rate which applies to noncompetitive bids is

$$R = \frac{D}{F} \cdot \frac{T}{t} \cdot 100$$

where

$$D = F - P$$

and F represents the face value of the total number of bills awarded and P is the total payment for these bills received by the Treasury.⁶⁷

⁶⁶ The true discount rate is $R = (d/p) (T/t) (100)$, where T is 365 or 366.

⁶⁷ In effect, the yield which applies to noncompetitive bids is an average of the yields of the accepted competitive bids weighted by volume.

chapter 2

INVESTMENT IN GOVERNMENT SECURITIES

Especial attention will be given to the operations and position policy of the dealers who make the market for Government securities. However, the market they make reflects the forces of supply and demand originating primarily in the investment activities of the great financial intermediaries. Consequently, these investment activities and the role of Government securities in institutional portfolios will be reviewed briefly.¹

POSTWAR SHIFTS IN OWNERSHIP OF THE FEDERAL DEBT

On December 31, 1946, there was outstanding \$259.5 billion in securities issued or guaranteed by the United States Government, excluding guaranteed securities held by the Treasury. At the end of 1960, the debt stood at \$290.4 billion. (See Table 2-1.) During this fourteen-year period, massive shifts occurred in the ownership of the Federal debt.

¹ For a general coverage of this subject, see Tilford C. Gaines, *Techniques of Treasury Debt Management*, New York: Graduate School of Business, Columbia University, and The Free Press of Glencoe, 1962, chaps. 4, 5, pp. 93-152; Michael E. Levy, *Cycles in Government, I. Federal Debt and Its Ownership*, New York: National Industrial Conference Board, 1962; and Roland I. Robinson and Morris Mendelson, "The Market for United States Treasury Obligations" (Unpublished ms.), chap. 4.

TABLE 2-1 Estimated ownership of Federal securities¹

	1946		1951		1960	
	Amt.	%	Amt.	%	Amt.	%
Total Federal securities outstanding ²	259.5	100	259.5	100	290.4	100
Total held by banks	97.9	38	85.4	33	89.5	31
Commercial banks	74.5	29	61.6	24	62.1	22
Federal Reserve banks	23.3	9	23.8	9	27.4	9
U.S. Government investment accounts	30.9	12	42.3	16	55.1	19
Total held by private nonbank investors	130.7	50	131.8	51	145.8	50
Total held by individuals	64.2	25	64.6	25	64.7	23
Savings bonds	44.2	17	49.1	19	45.6	16
Other	20.1	8	15.5	6	19.1	7
Insurance companies	24.9	9	16.5	6	11.9	4
Mutual savings banks	11.8	5	9.8	4	6.3	2
Corporations	15.3	6	20.7	8	20.1	7
State and local governments	6.3	2	9.6	4	18.7	6
Miscellaneous investors ³	8.1	3	10.6	4	24.2	8

¹ SOURCE: Treasury Bulletin. Amounts are in billions of dollars. Percentages have been computed and are based on total Federal securities outstanding. Data are for Dec. 31 of year indicated. Components may not add totals because of rounding.

² Securities issued or guaranteed by the United States Government, excluding guaranteed securities held by the Treasury.

³ Includes savings and loan associations, nonprofit institutions, corporate pension trust funds, dealers and brokers, and investment of foreign balances in this country.

Commercial banks reduced their holdings from 29 to 22 percent of the outstanding debt. Insurance companies and mutual savings banks also markedly reduced their ownership of the debt. Insurance companies reduced their share from 9 to 4 percent. Mutual savings bank holdings declined from 5 to 2 percent.

The Federal Reserve System, individuals, and corporations maintained about the same relative positions, with 9, 23, and 7 percent, respectively, in 1960.

The securities which were sold or allowed to run off by the banks and insurance companies were absorbed by the United States Government investment accounts, state and local governments, and miscellaneous investors. The share of the United States Government investment accounts grew from 12 to 19 percent. State and local governments increased their share from 2 to 6 percent, and the miscellaneous-investor group increased its holdings from 3 to 8 percent.

The investment activities of financial intermediaries are determined by the complex of factors affecting the profitability possibilities and risk

exposure of various asset and liability combinations within constraints imposed by law and the regulations of supervisory authorities. Typically these constraints severely restrict the choice of liabilities. These in turn influence the process of asset selection by affecting the investor's risk position. Operating constraints imposed by various governmental bodies may also restrict directly, or indirectly through the tax system, the choice of assets from among the array of anticipated earning possibilities appearing in the market place.²

Each asset holder is confronted by a unique environment. There is, on the other hand, a common characteristic among these environments, namely, that uncertainty necessarily attaches to the cash flows of financial intermediation. Successful management entails the minimization of the cost of synchronizing these cash flows. Holding a stock of cash increases costs in terms of investment earnings forgone. Holding zero cash increases investment returns, but it may also increase costs if relatively illiquid assets have to be liquidated unexpectedly. The crucial task of management, therefore, is to find the most profitable array of assets, an array which will consist of assets of varying degrees of earning capacity and liquidity. Relatively liquid investment media will be sought in place of cash so long as the interest return exceeds or, at the margin, just compensates for the increase in the cost of the uncertainty involved plus the cost of investment. Because they are relatively liquid, Government securities play a unique role in this process of portfolio selection. In the following discussion, this role will be considered for each of the major institutional investors.

COMMERCIAL BANKS

Commercial banks comprise the largest single investor group among institutional holders of Government securities.³ At the end of the calendar year 1960, 23.7 percent of commercial bank assets were so invested.⁴ (See Table 2-2.)

² See appendix for bibliographies on institutional portfolio policy and on the role of the Government securities portfolio in transmitting the effects of monetary policy.

³ See appendix for a bibliography on commercial banks.

⁴ Comparable data are not available for foreign agency banks. However, see Andrew F. Brimmer, "Foreign Banking Institutions in the United States Money Market," *Review of Economics and Statistics*, vol. 44, no. 1, February, 1962, pp. 76-81.

association assets (See Table 2-7.) The relatively unimportant role given the Government securities portfolio is explained by the fact that these savings institutions do not accept deposits. Rather, savings capital consists of shares of ownership or fractions of shares.

TABLE 2-7 Principal assets and liabilities of savings and loan associations¹

	Amount	Percentage of total assets ²
Cash	2.7	3.8
Obligations of the U. S. Government	4.6	6.4
Mortgages	60.1	84.0
Real estate	0.1	0.1
Miscellaneous assets	4.0	5.6
Total assets	71.5	100.0
Savings capital	62.1	86.9
Miscellaneous liabilities	4.4	6.1
Reserve accounts	5.0	7.0
Total liabilities	71.5	100.0

¹ SOURCE: Federal Home Loan Bank Board, Chart Book, 1963, no. 8. Amounts are in billions of dollars. Figures are for Dec. 31, 1960.

² Percentages may not add to 100 because of rounding.

The chief cash inflows of savings and loan associations consist of receipts from the sale of shares or fractions of shares, the maturing of mortgages and bonds, the amortization of mortgages, sales of portfolio securities, borrowing, and interest receipts. The outflows are due to the repurchase of own shares or fractions thereof, the purchase of mortgages and securities, the repayment of debt, operating costs including taxes, and dividend payments.

Although they are not required to do so, savings and loan associations emulate banking institutions by repurchasing outstanding shares or fractions thereof whenever a customer wants cash. This is the chief factor among savings and loan association cash flows which gives rise to a demand for liquidity. And it accounts for the relatively high proportion of savings and loan association holdings in short-term instruments. Treasury bills account for 6.6 percent, maturities with one year

13.2 percent, of their marketable Government securities portfolio.²⁹ (See Table 2-3.)

The tax treatment accorded savings and loan associations is similar to that of the mutual savings banks.³⁰

CORPORATE PENSION TRUST FUNDS

Corporate pension trust funds are rapidly growing newcomers to the area of financial intermediation.³¹ Although solid information on the corporate pension field is still hard to come by, it is thought that the bulk of these schemes are of the level-of-benefit variety. Under such schemes, a specific level of benefits will be paid to employees as service requirements are fulfilled. These obligations may be insured, but more often they are funded through a bank-administered trust. Although there is no guarantee that the trust fund will produce sufficient income to make all benefit payments, it is incumbent upon a going concern to meet any deficiencies.

The stream of cash flowing into a pension fund is composed principally of employer and employee contributions, maturing securities, sinking-fund payments on bonds, sales of securities, and dividend and interest receipts. Benefit payments, the acquisition of securities, and operating costs comprise the outflow. Insured plans are subject to the same restrictions on investment outlets as are insurance companies. Trusteed plans, on the other hand, enjoy a relatively high degree of freedom in their investment activities.

Investment-policy constraints plus the contingency that benefit payments might exceed investment income apparently explain the demand for Government securities. Thus 7 percent of the total assets of corporate pension funds are allocated to the Government sphere (See Table 2-8.) Of the marketable Government securities portfolio, 19.5 percent is in Treasury bills, and 30.6 percent matures within a year.

²⁹ In the case of member institutions, the demand for Governments as a source of liquidity is reduced by the availability of loans from the Federal Home Loan Bank System.

³⁰ Sec. 6, Public Law 87-834, 87th Congress, H. R. 10650, Oct. 16, 1962, amending sec. 593, Internal Revenue Code of 1954, as amended and in force Jan. 3, 1961.

³¹ See appendix for a bibliography on private pension funds.

(See Table 2-3.) These proportions would seem, in view of the relatively recent popularity of retirement systems, to indicate that fund managers attach a high priority to the early provision for a defensive liquidity position. Since the investment income of pension funds is not subject to tax,³² few of their resources are allocated to the tax-exempt securities. (See Tables 2-3 and 2-8.)

TABLE 2-8 Assets of corporate pension funds¹

Assets	Amount	Percentage of total assets ²
Cash	0.4	1.4
Obligations of the U.S. Government	2.1	7.1
Mortgages	0.9	3.0
Corporate obligations	25.6	84.3
Other assets	1.3	4.3
Total	30.3	100.0

¹ SOURCE: Securities and Exchange Commission. Amounts are in billions of dollars. Figures are for Dec. 31, 1960.

² Percentages do not add to 100 because of rounding.

NONFINANCIAL CORPORATIONS

The largest private institutional holders of Government securities outside the commercial banking sector are the nonfinancial corporations.³³ Holdings of \$20.1 billion by these institutions account for 7 percent of the total outstanding at the end of calendar year 1960. (See Table 2-1.) The growing importance as suppliers of funds of these traditional occupants of the demand side of the money and capital markets has been a concomitant of the attempt to perfect techniques of cash management by corporate treasurers and comptrollers. The inflow of corporate cash stems from product sales, the sale of the corporation's own securities, the maturity of, and sinking-fund payments on, portfolio securities, the maturity of loans, sales of portfolio securities, and interest and dividend receipts. An outflow of corporate cash results from operating costs including taxes, outlays on capital goods, sinking-fund and installment payments on outstanding obligations, the ma-

³² Sec. 501, Internal Revenue Code of 1954, as amended and in force on Jan. 3, 1961.

³³ See appendix for a bibliography on corporate cash management.

turity and repurchase of outstanding own securities and obligations, making loans and the purchase of portfolio securities, and dividend and interest payments.

The dimensions of these cash flows are variegated with respect to size and geographical pattern, and they present a fascinating challenge in economy. Outlays can be predicted with a fair degree of accuracy; receipts are more haphazard. Their failure to mesh over time, along with the costs of securities transactions, gives rise to a need for a stock of cash. Why, then, is there a need for Governments or other liquid investment media? A stock of cash of given size will prevent embarrassing calls for bank accommodation. That is, cash, as usual, is a good antidote for uncertainty. Corporate interest in short-term investment media, as in the case of other asset holders, can be explained in part by an interest return which more than compensates or, at the margin, just compensates for the modest increase in the cost of uncertainty involved in substituting relatively liquid securities for cash. In part, also, the demand for such securities is due to known needs for cash whose time dimensions are such that more profitable uses of existing funds are lacking. Such needs arise in anticipation of payments, say, to shareholders, bondholders, contractors, or the tax collector.

The importance of Government securities as a short-term investment outlet is reflected in the fact that over 86 percent of the total short-term securities portfolios of 276 large corporations were Government obligations in 1955. (See Table 2-9.) The short-term nature of corporate demand for noncash liquidity explains the fact that 52.1 percent of their marketable Government securities portfolio is in Treasury bills and 77.9 percent is in maturities of less than one year. (See Table 2-3.)

UNITED STATES INVESTMENT ACCOUNTS

In addition to private institutions, public pools of investable funds share in the demand for Government securities. Such are the United States Government accounts.³⁴ These funds held \$55.1 billion in Governments, or 19 percent of the outstanding debt, at the end of 1960. (See Table 2-1.) Treasury bills accounted for 7.2 percent and maturities within one year 18.1 percent of their Government holdings.

³⁴ See appendix for a bibliography on the United States investment accounts.

TABLE 2-9 Short-term investment portfolio of 276 large nonfinancial corporations¹

	Amount	Percentage of total securities
Government securities:		
91-day bills	3,177.0	26.9
180 days or less	2,809.3	23.8
181 days-1 year	2,461.9	20.9
1-2 years	888.8	7.5
2-3 years	572.1	4.9
3 years and over	306.5	2.6
Total Governments	10,215.6	86.6
Securities held under RPs (mostly Treasuries)	643.8	5.5
Agencies	118.6	1.0
Tax-exempts:		
1 year or less	224.5	1.9
Over 1 year	15.9	0.1
Foreign government securities	81.3	0.7
Finance company paper	280.9	2.4
Commercial paper	163.3	1.4
All other securities	45.9	0.4
Total securities	11,789.8	100.0
Cash	6,418.6	
Other current assets	27,814.8	
Total current assets	46,023.2	

¹ SOURCE Charles E. Silberman, "The Big Corporate Lenders," *Fortune*, vol. 54, no. 2, August, 1956, pp. 111-114. Amounts are in millions of dollars. Data are for Nov. 30 or Dec. 31, 1955.

(See Table 2-3.) There are fifty-two trust funds and other accounts managed by the Treasury Department in addition to those few handled by the agencies themselves. Eight of the Treasury-managed funds account for \$51.1 billion out of the total of \$55.1 billion in Governments. (See Table 2-10.) Unlike most other investor groups, the United States investment accounts are, for the most part, restricted by law to Government obligations. Moreover, in managing these accounts, the Secretary of the Treasury is duty-bound to do the best he can for those who own the funds. He is therefore handicapped in performing his function as chief manager of the public debt. Within limits, however, these funds can be, and have been, employed as an instrument of debt-management policy. It must be understood, of course, that even though temporary objectives in the debt-management area may be achieved,

TABLE 2-10 Treasury-managed trust funds with holdings of Government securities in excess of \$1 billion¹

Trust fund	Total Government holdings	Public issues	Special issues
Federal Old-age and Survivors Insurance Trust Fund	19,128	3,346 ²	15,782
Federal Employees Retirement Funds	10,407	633	9,774
National Service Life Insurance Fund	5,760		5,760
Railroad Retirement Account	3,591	256	3,335
Federal Deposit Insurance Corporation	2,319	1,701	618
Federal Disability Insurance Trust Fund	2,180	87 ²	2,093
Government Life Insurance Fund	1,078		1,078
Unemployment Trust Fund	6,638	1,091 ²	5,547
Total	51,101	7,114	43,987

¹ SOURCE Treasury Bulletin, Federal Reserve Bulletin, and Annual Report of the Secretary of the Treasury. Amounts are in millions of dollars, for Dec. 31, 1960.

² Carried net of unamortized premium and discount.

no permanent effects on the money supply are thereby produced. For example, if public holdings of cash are reduced by increments to a trust fund and these, in turn, are invested in special Treasury issues, public holdings of cash nevertheless benefit because public holdings of other forms of the Government debt will be commensurately less. In other words, what the Treasury does not sell to the trust funds, it must sell to somebody else.

STATE AND LOCAL GOVERNMENTS

We are a federal system. Consequently, the sovereign states and their political subdivisions enjoy the power to tax, collect social-security payments, and so on. These fund-collecting capacities give rise to investment pools which, in turn, have an impact on the government securities market. Holdings of Government securities by state and local governments account for no less than 6 percent of the total.³⁵ (See Table 2-1.)

State and local investment funds are diverse in kind. They include the general-fund account plus funds for retirement, industrial accidents and sickness, highway and construction, debt service and retirement, and schools. Aggregate figures, in addition, reflect the degree to

³⁵ See appendix for a bibliography on state and local investment funds.

which portfolio managers are restricted by their respective legislative enactments. Nevertheless, funds subject to the control of fifteen state governments have allocated 58.5 percent of their assets to United States Government securities.³⁶ (See Table 2-11.) This high proportion re-

TABLE 2-11 Investment portfolios of fifteen state governments¹

	Percentage of total portfolio
Obligations of the U.S. Government	58.5
State and local obligations	21.3
Corporate stocks and bonds	9.3
Mortgages	5.9
Certificates of deposit	1.6
FHA and other nonguaranteed Federal securities	1.3
Other securities ²	2.1
Total	100.0

¹ SOURCE: Joseph L. Bower, "Investment in United States Government Securities by State Governments," *National Tax Journal*, vol. 13, no. 2, June, 1960, table II, p. 133. The states are Arkansas, Connecticut, Maine, Maryland, Massachusetts, Nevada, New Mexico, New York, North Carolina, North Dakota, Oregon, Rhode Island, South Dakota, Tennessee, and Vermont. Figures are for June 30, 1958, for all states except New York. For New York, figures are for Mar. 31, 1958.

² Primarily obligations of the Canadian government and the International Bank for Reconstruction and Development.

flects the fiduciary role of portfolio managers as well as the conservative predilection of legislative bodies.

The composition of the United States Government securities portfolio reflects, also, the desire for a liquidity medium, since 15.5 percent is in Treasury bills and at least 29 percent matures within one year. (See Table 2-12.)

FEDERAL RESERVE SYSTEM

Last but hardly least as an institutional investor in Governments is the central bank. Holdings allocated to the various Federal Reserve banks accounted for 9 percent of outstandings at the end of calendar year 1960. (See Table 2-1.) Though once considered solely a source of

³⁶ They also assign 21.3 percent of their resources to municipals. This, in view of the tax status of municipals and state and local funds, is uneconomic portfolio management. See Roland I. Robinson, *Postwar Market for State and Local Government Securities*, Princeton, N.J.: Princeton University Press, 1960, pp. 158-201.

TABLE 2-12 United States Government securities portfolios of fifteen state governments¹

	Percentage of U.S. Government securities portfolio ²
Marketable:	
Bills	15.5
Certificates	9.7
Notes:	
Within 1 year	1.9
1-5 years	1.1
Total notes	3.0
Bonds:	
Maturity unknown	4.8
Within 1 year	1.9
1-5 years	5.1
5-10 years	3.3
Over 10 years	38.0
Total bonds	53.1
Total marketable	81.4
Convertible bonds, Investment Series B	13.6
Nonmarketable:	
Investment Series A	0.4
Savings bonds	4.4
Total nonmarketable	4.8
	100.0

¹ SOURCE: Joseph L. Bower, "Investment in United States Government Securities by State Governments," *National Tax Journal*, vol. 13, no. 2, June, 1960, table IV, p. 136.

² Percentages do not add precisely because of rounding.

earnings, the central bank's portfolio is now the primary instrument of monetary policy.³⁷ The composition of the Government securities portfolio, of course, depends upon the central bank's policy with respect to operating in various maturities.³⁸ (See Table 2-3.)

³⁷ See, e.g., E. A. Goldenweiser, *American Monetary Policy*, New York: McGraw-Hill Book Company, 1951; *Federal Reserve Bank of Chicago Annual Report*, 1955, p. 40; Robert V. Roosa, *Federal Reserve Operations in the Money and Government Securities Markets*, Federal Reserve Bank of New York, July, 1956; "The Fed Is in the Market," *Federal Reserve Bank of Philadelphia Business Review*, December, 1960; A. C. L. Day and Sterie T. Beza, *Money and Income*, Fair Lawn, N.J.: Oxford University Press, 1960; *Federal Reserve System Purposes and Functions*, Washington, D.C.: Board of Governors of the Federal Reserve System, 1961; and Lester V. Chandler, *Economics of Money and Banking*, New York: Harper & Row, Publishers, Incorporated, 1964.

³⁸ See appendix for a bibliography on the bills-only policy.