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Objectives and Technical Characteristics of the Savings Bond Program

The United States savings bond program was established in 1935 to provide a safe investment outlet, with a relatively attractive yield at the time, for the savings of individuals. The program had two main goals: to stimulate individual thrift and to promote wider ownership of the federal debt. The program pursued the essentially anti-inflationary objective of promoting higher saving despite widespread unemployment and depressed economic conditions. The principal motive for seeking to spread the ownership of Treasury securities among individuals at that time was to foster responsible attitudes toward fiscal matters by giving millions of persons a direct stake in federal finances.¹

During the defense build-up shortly before Pearl Harbor and during World War II, the savings bond program was considerably modified by the adoption of new securities and new sales methods. Sales rose sharply, partly because of the extraordinary wartime rise in total personal saving, and partly because of aggressive solicitation, appeals to patriotism, systematic purchases of E bonds through the payroll savings plan, and the attractiveness to investors of relatively high yields on a safe investment. A major purpose of the wartime program was to stimulate higher saving and thus divert purchasing power away from scarce consumer goods. Another prime objective was to restrict the amount of "residual" borrowing from the commercial banking system. To the extent that the Treasury was able to obtain funds from individuals and other nonbank investors at the fixed yields prevailing on

¹ Henry C. Murphy, *The National Debt in War and Transition* (New York, McGraw-Hill Book Co., 1950), p. 35; and Henry Morgenthau, Jr., "Address at Atlantic City," October 7, 1944, reprinted in *Annual Report of the Secretary of the Treasury on the State of the Finances for the Fiscal Year Ended 1945*, p. 328 (hereinafter cited as *Annual Report*, Treasury).

Treasury securities, it could refrain from borrowing from the commercial banking system. In Henry C. Murphy's words:

It became the accepted and unquestioned gospel that it was better to sell a security to a nonbank investor than to a bank, better to sell a security to an individual than to any other nonbank investor, and better to sell an E bond than any other security.²

The high priority enjoyed by the savings bond program in the World War II debt management program reflected, in part, the rejection of proposals for forced loans or compulsory saving plans, as means of diverting consumer purchasing power from scarce goods, in favor of the stimulation of saving on a voluntary basis. It reflected also the propaganda value of voluntary savings bond promotion.³ A large share of the greatly increased volume of federal borrowing during World War II was channeled through the savings bond program (Table 18).

The postwar history of the savings bond program may be divided into two phases, the division being marked by the outbreak of the Korean War in the summer of 1950 and the Federal Reserve-Treasury accord in March 1951. During the earlier period, savings bond holdings continued to grow, although much less rapidly than during World War II, while Treasury borrowing requirements declined and large amounts of marketable securities were retired. In this period, the Treasury limited the greatly reduced volume of its offerings for cash mainly to savings bonds and other types of nonmarketable securities. As indicated by the statements of Treasury officials, the purpose of the program during the early postwar years was to combat inflation by stimulating personal saving and to provide funds for the retirement of marketable securities held by the commercial banking system.⁴

² *National Debt*, pp. 88 and 89.

³ Murphy, *National Debt*, p. 37, and Morgenthau, "Address at Atlantic City," pp. 328-329.

⁴ John W. Snyder (Secretary of the Treasury), "The Role of the Savings Bond Program in Today's Economy," address at a savings bond rally sponsored by the Federal Reserve Bank of St. Louis, October 23, 1946, quoted by Charles Cortez Abbott, *The Federal Debt: Structure and Impact* (New York, Twentieth Century Fund, 1953) p. 43. See also A. L. M. Wiggins (Under Secretary of the Treasury), "Fiscal Policy and Debt Management," address before the Academy of Political Science, New York City, April 1, 1948, (Treasury Department Press Service No. S-676), p. 4; *A Compendium of Materials on Monetary, Credit, and Fiscal Policies*, Joint Committee on the Economic Report, S. Doc. 132, 81st Cong., 2nd sess., 1950, pp. 7 and 8; and *Monetary Policy and the Management of the Public Debt*, Subcommittee on General Credit Control and Debt Management, S. Doc. 123, Part I, 82nd Cong., 2nd sess., 1952, pp. 120-121. See also William J. Frazer, Jr., "Federal Debt Management and the Series E Savings Bond," unpublished M.A. thesis, Columbia University, New York, 1953.

After the accord, the program entered a new phase in its history. Previously, it had operated in a financial climate characterized by low and generally stable interest rates and by monetary policies dominated by Treasury borrowing requirements. The general rise and increased variability of market interest rates as well as increases in the rates of return paid by private financial intermediaries on savings accounts during the 1950's reduced the relative attractiveness of fixed-interest savings bonds, particularly to large investors. In contrast with the earlier period, moreover, the Treasury sold substantial amounts of marketable securities to finance budgetary deficits, and relied less on the sale of nonmarketable securities, finally discontinuing the sale of certain types of nonmarketable securities to large investors. Treasury officials continued to state the traditional objectives of encouraging thrift and limiting borrowing from commercial banks. They also emphasized that the sale of savings bonds tended to reduce the need to borrow through short-term marketable securities. Specifically, the Treasury attained and continues to seek some expansion in the amount of E and H bonds outstanding—the most significant component of the total savings bond debt.⁵ In the unfavorable capital market environment of the 1950's, however, the total amount of savings bonds outstanding declined and the resulting cash drain had to be offset at times through increased offerings of marketable securities.

DISTINGUISHING FEATURES OF THE SAVINGS BOND PROGRAM

Three main features distinguish savings bonds from other securities sold extensively by the Treasury throughout the postwar period. These features are basic to the particular significance of savings bonds in federal debt management. First, savings bonds are sold primarily to individuals, rather than to financial institutions or corporations. By borrowing directly from individuals through the savings bond program, the Treasury bypasses channels provided by financial intermediaries

⁵ For statements on the purposes of the program, see W. Randolph Burgess, "Remarks at Rutgers University, New Brunswick, New Jersey," May 10, 1956 reprinted in *Annual Report*, Treasury, 1956, p. 250; "Progress on the Public Debt" (remarks at the annual dinner meeting of the New York Financial Writers Association, New York City, Treasury Department Release, April 22, 1957), p. 6; remarks by the Secretary of the Treasury Robert B. Anderson, April 7, 1958, at the opening of the "Share in America" savings bond campaign, New York City, reprinted in *Annual Report*, Treasury, 1958, pp. 262-263; and Office of the Secretary of the Treasury, *Savings Bonds in Our Growing Economy*, February 1960; and *The Savings Bond Program, 20 Years of Contribution to Our Economy*, May 1961.

for the flow of funds and, as a result, is brought into direct competition not only with other final borrowers but also with private financial intermediaries. Direct borrowing from individuals has provided the Treasury with access to funds held by a group of investors whose behavior as holders of Treasury securities during the postwar period has differed greatly from that of the major types of financial institutions (Chapter 5). Seeking to attract individuals' savings, moreover, the program makes use of advertising and other merchandising and promotional techniques (in connection with E and H bonds) not generally utilized in the sale of other Treasury securities.

Second, the size of the savings bond debt is independent, to some degree, of close, immediate control by the Treasury. Savings bonds are redeemable at the option of the investor at prices fixed in advance. Moreover, the Treasury generally has followed the practice of making new savings bonds continuously available "on tap" to purchasers, with yields kept constant for extended periods of time. In effect, the Treasury stands ready for periods of time to sell on fixed terms any amount of savings bonds the public wishes to buy and to repurchase at predetermined prices any amount the public desires to liquidate.⁶ As a result, the amounts of savings bonds sold, redeemed, and outstanding may fluctuate in ways that have little relation to, or indeed are inconsistent with, current debt management policies and monetary policy.

Third, savings bonds are nonmarketable securities. Throughout the postwar period, they represented the bulk of the nonmarketable federal debt held by private investors. Unlike marketable securities, savings bonds do not fluctuate in liquidation value and are insulated to a degree from capital market forces.

For the individual investor, nonmarketable securities that are redeemable at prearranged prices have the advantage of being free of the risk of market depreciation, a risk which many individuals of modest resources and limited knowledge of capital markets may not be prepared to bear. It was with this consideration in mind that the Treasury adopted savings bonds as the major vehicle for the sale of Treasury securities to individuals during World War II. In the background was the often cited experience of persons who purchased marketable Liberty bonds during World War I, in response to appeals to patriotism and under the pressure of aggressive salesmanship, and later sustained losses on their holdings during periods of falling bond prices.⁷ The likelihood that

⁶ Subject to certain limitations on the types of investors who may purchase savings bonds and on the amounts that a single investor may purchase in a single year and to certain restrictions on the timing of redemptions.

⁷ Murphy, *National Debt*, pp. 106-107.

individuals would not buy large amounts of marketable securities bearing the low interest rates the Treasury was then willing to pay on such securities also favored the selection of savings bonds.

The use of savings bonds has both advantages and disadvantages from the Treasury's standpoint. The role of the savings bond program in federal debt management is discussed in Chapter 5, where the significance of the basic characteristics of the program is viewed in the light of its postwar record. Numerous observers have suggested alternatives to savings bonds as means of attracting individuals' funds to the Treasury.⁸ In part, these proposals reflect the view that the wartime accumulation of savings bonds and other liquid assets contributed to higher postwar spending and inflation. Some observers have proposed long-term marketable securities bearing whatever yield would be necessary to make them attractive to individual savers. Others have proposed nonmarketable securities with restricted or no redeemability prior to maturity and with various types of inducements to assure their attractiveness to investors, including higher yields, insurance or annuity features, and the privilege to use such securities as collateral for loans. Still others have proposed the adoption of compulsory saving plans during wartime, which would provide that amounts saved would be returned to individuals at some prescribed time in the postwar period or at the discretion of the government. Reflecting different objectives, some observers have suggested the use of purchasing-power bonds. According to this view, it is a proper function for the federal government to offer unsophisticated investors protection against the effects of inflation.

TECHNICAL DIFFERENCES AMONG DIFFERENT SERIES OF SAVINGS BONDS

Since 1935 the Treasury has issued ten alphabetical series of savings bonds, from the original Series A to Series K.⁹ The amounts outstanding

⁸ For instance, see E. A. Goldenweiser, *American Monetary Policy* (New York, McGraw-Hill Book Company, 1951), p. 227; Albert G. Hart, *Defense and the Dollar* (New York, The Twentieth Century Fund, 1953), pp. 107-126; Roland I. Robinson, "Monetary Aspects of National Debt Policy," *Public Finance and Full Employment* No. 3, *Postwar Economic Studies* (Board of Governors of the Federal Reserve System, December 1945), pp. 80-81; and Earl R. Rolph, "The Payment of Interest on Series E Bonds," *American Economic Review*, May 1947, p. 321. For a recent discussion of purchasing-power bonds, see H. S. Houthakker, *Protection Against Inflation*, Joint Economic Committee, Study Paper No. 8, 86th Congress, 1st Session, 1959, pp. 129-131.

⁹ Bonds of Series A through D were sold from March 1935 to April 1941, being replaced by E, F, and G bonds in May 1941. F and G bonds were sold until

TABLE 1
SAVINGS BONDS OUTSTANDING, BY SERIES,
DECEMBER 31, 1945, 1951, and 1960
 (billions of dollars)

	1945	1951	1960
Interest-bearing bonds, Series:			
A-D	3.5		
E	30.7	34.7	37.6
F	2.8	3.9	0.4
G	11.2	19.0	1.7
H			5.5
J			0.6
K			1.4
Total	48.2	57.6	47.2
Matured, noninterest-bearing bonds			
	a	0.2	0.4
Total	48.2	57.7	47.5

SOURCE: *Treasury Bulletin*. Series A-F and J bonds are included at current redemption values; other series, at par.

^aLess than \$50 million.

of the different series at intervals during the postwar period are shown in Table 1. The various series differ in certain important details, but are similar in their basic provisions.

1. They are, in each case, nonmarketable, nontransferable obligations of the federal government, and cannot be used as collateral for loans. Registered in the name of the holder, they may be readily replaced in the event of theft or loss.

2. While nominally long-term securities, savings bonds of all series may be redeemed prior to maturity at the option of the owner at pre-determined prices.

3. They provide lower yields if redeemed prior to maturity than if held the full term to maturity, a feature designed to discourage early liquidation.

May 1952, when J and K bonds were offered in their place. H bonds were first sold in June 1952. Since the termination of sales of J and K bonds in April 1957, E and H bonds have been the only savings bonds on sale. In addition, there are United States savings stamps. These obligations bear no interest and are ultimately convertible into E bonds when accumulated in sufficient amounts. Only \$53 million of these stamps were outstanding at the end of fiscal 1960.

4. They have been sold to specified types of investors, generally investors other than commercial banks.

5. Finally, the amount of savings bonds that may be purchased by a single investor during any one calendar year is subject to ceilings prescribed by the Treasury.¹⁰

To point up differences in technical features among the various series, it is convenient to distinguish first between (1) E and H bonds, the only series currently offered by the Treasury, which represented 91 per cent of the total amount of savings bonds outstanding at the end of 1960; (2) F and G bonds, which were issued from May 1941 to April 1952, and their successors, J and K bonds, which were sold between May 1952 and April 1957. The combined amount of F, G, J, and K bonds outstanding represented 9 per cent of the total savings bond debt at year-end 1960, but was substantially more significant earlier in the period covered by this paper. Briefly, E and H bonds differ from F, G, J, and K bonds in the following ways:¹¹

1. Yields are higher on E and H bonds than on F, G, J, and K bonds.

2. During most of the history of the savings bond program E and H bonds have been issued only to "natural persons," while F, G, J, and K bonds have been available to all types of investors other than commercial banks.¹²

3. Purchase quotas set by the Treasury have been lower for E and H bonds than for F, G, J, and K bonds. In 1960, a single investor could purchase a total of \$7,500 of E bonds and \$10,000 of H bonds (in terms of issue prices) for the year. In contrast, the purchase ceiling for J and K bonds was \$200,000 a year for the two series combined.

Technical differences between E and H bonds, on the one hand, and F, G, J, and K bonds, on the other hand, illustrate the use of non-

¹⁰ Technically, these limitations refer to the amount of bonds in a particular series originally sold in any one calendar year that may be held by a particular investor at any one time.

¹¹ Differences among the various series of savings bonds sold since 1941 are shown in greater detail in Table A-1. Prewar Series A, B, C, and D bonds were similar in many essentials to E bonds. However, these early issues could be purchased in limited amounts by any class of investors prior to April 1, 1940, and were partially tax-exempt prior to March 1, 1941.

¹² Limited amounts of F and G bonds were offered to commercial banks with savings deposits during 1944 and in special offerings for short periods of time in 1945, 1948, and 1950. Natural persons, that is, individuals, may purchase savings bonds in the name of one individual, two individuals as co-owners, and one individual with another as beneficiary.

marketable securities to segregate sectors of the market and discriminate among different types of investors. Reflecting the fundamental goal of stimulating purchases by individuals, yields on savings bonds available exclusively to individuals were set at a higher level by the Treasury than yields on savings bonds that could be purchased both by individual and by nonindividual investors. Furthermore, the Treasury established lower limits on the amount of higher-yield E and H bonds that could be accumulated by a single investor than on F, G, J, and K bonds. The Treasury first sought to differentiate between individual and nonindividual investors in savings bonds in 1941, when it introduced Series E, F, and G bonds.¹³ It ceased efforts along this line in 1957, when the sale of lower-yield J and K bonds was discontinued. In 1958, E and H bonds were made available on the same terms to all investors other than commercial banks, but low purchase ceilings continued to limit sales to large investors to some degree.

In addition to differences between Series E and H bonds and Series F, G, J, and K bonds, individual series within these two groups also differ, chiefly with respect to (1) method of interest payment and (2) minimum denomination. Series E bonds, within the first group, and Series F and J bonds, within the second, have been sold at discounts, and appreciate in redemption value until they mature or are redeemed. The other series of savings bonds in these groups (G, H, and K) have been sold at par, and pay current interest to the holder by check.

Originally, all savings bonds were of the discount type. Current-income bonds were introduced for investors who preferred to receive their interest payments currently, rather than wait until maturity or redemption. The attractiveness of current-income bonds to some investors is indicated by the fact that holdings of current-income G and K bonds exceed those of their companion series of the discount type, F and J bonds (Table 1). Discount bonds, however, offer a tax advantage, particularly to persons planning for retirement, in that interest need not be reported as income until the bonds are redeemed. Differences in minimum denominations are associated with the method of interest payment, the Treasury having made current-income bonds available in larger minimum denominations, in order to avoid the cost of issuing large numbers of small interest checks. Another example of the tailoring of savings bond terms for various types of investors are the special redemption provisions of Series G and K bonds, designed to make these securities more suitable for personal trust funds (see Table A-1).

¹³ Prior to April 1, 1940, all types of investors could purchase savings bonds. From April 1940 until May 1941, when Series E, F, and G bonds were introduced, savings bonds could be purchased only by natural persons.

TABLE 2
YIELDS ON SAVINGS BONDS AND MARKETABLE U.S. GOVERNMENT SECURITIES, 1941-60
 (per cent)

	YIELDS ON TAXABLE MARKETABLE SECURITIES		YIELDS ON SAVINGS BONDS HELD FOR:							
	9-12 Month Issues	3-5 Year Issues	Long-Term Bonds	One Year		Four Years		Full Term		
				H Bonds	F, G, J, and K Bonds	H Bonds	E and H Bonds	F, G, J, and K Bonds	E and H Bonds	F, G, J, and K Bonds
1941				0.67	0.30	1.62	1.20	2.90	2.50	2.50
1942		1.46	2.46	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1943	0.75	1.34	2.47	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1944	0.79	1.33	2.48	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1945	0.81	1.18	2.37	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1946	0.82	1.16	2.19	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1947	0.88	1.32	2.25	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1948	1.14	1.62	2.44	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1949	1.14	1.43	2.31	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1950	1.26	1.50	2.32	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1951	1.73	1.93	2.57	0.67	0.30	1.62	1.20	2.90	2.50	2.50
1952	1.81	2.13	2.68	1.59	1.26	2.30	1.94	3.00	2.76	2.76
1953	2.07	2.56	2.94	1.59	1.26	2.30	1.94	3.00	2.76	2.76
1954	0.92	1.82	2.55	1.59	1.26	2.30	1.94	3.00	2.76	2.76
1955	1.89	2.50	2.84	1.59	1.26	2.30	1.94	3.00	2.76	2.76
1956	2.83	3.12	3.08	1.59	1.26	2.30	1.94	3.00	2.76	2.76
1957	3.53	3.62	3.47	2.28		3.11		3.25		3.25
1958	2.09	2.90	3.43	2.28		3.11		3.25		3.25
1959	4.11	4.33	4.07	2.33		3.45		3.75		3.75
1960	3.55	3.99	4.01	2.33		3.45		3.75		3.75

SOURCE AND NOTE TO TABLE 2

SOURCE: *Annual Report*, Treasury, and *Federal Reserve Bulletin*.

NOTE: For description of data on E bonds see note to Chart 2. Figures for marketable long-term bonds refer to bonds due or callable after fifteen years, January 1942-March 1952; after twelve years, April 1952-March 1953; ten years or more, from April 1953 on. Data for marketable three-to-five-year issues refer to selected notes and bonds; those on nine-to-twelve-month issues include also certificates of indebtedness. Data shown for E and H bonds are for E bonds alone, since yields on H bonds are closely similar to those on E bonds. Similarly, figures shown for F, G, J, and K bonds are for Series G and K bonds alone. Data for savings bonds for 1941 refer to bonds sold on May 1, 1941, and thereafter during the year. Data for savings bonds for 1952, 1957, and 1959 refer to bonds sold after changes in savings bond interest rates in those years. No figures are shown for J and K bonds after 1956; sales of these bonds were discontinued on April 30, 1957.

In addition to the above differences, E bonds, which accounted for 79 per cent of the total amount of savings bonds outstanding at year-end 1960, differ in several respects from all other series of savings bonds sold during the postwar period. The unique features of E bonds reflect the importance of these bonds in the savings bond program, as the principal means by which the Treasury seeks to sell securities to small investors. First, E bonds have been designed with the most liberal redemption features, being convertible into cash at any time except during an initial two-month waiting period after the issue date.¹⁴ All other series sold during the postwar period may be liquidated only on one month's notice and only after an initial six-month waiting period. Second, in order to make E bonds conveniently available to a large number of individuals, they are issued through numerous widely dispersed outlets, including most banks, companies operating payroll savings plans, many savings and loan associations, post offices, and other issuing agents. At mid-1960, the total number of authorized issuing agents, other than the Federal Reserve Banks and the Treasury itself, was 22,695. E bonds could be redeemed through 19,153 redemption agents, primarily banks.¹⁵ All other series of savings bonds have been issued and redeemed only through Federal Reserve banks and the Treasury, although banks generally undertake the necessary paper work for investors.

¹⁴ Actually, since the date of issue is the first day of the month in which the bond is sold, the initial waiting period often is shorter.

¹⁵ *Annual Report*, Treasury, 1960, p. 124.

E bonds differ from other series of savings bonds also with respect to provisions for handling maturities. Since 1951, the Treasury has permitted holders of matured E bonds to retain them for additional ten-year periods, during which the bonds appreciate further in redemption value. This provision was adopted because of the administrative problems that would be involved in exchange offerings for the large number of small-denomination E bonds and the possibility of substantial attrition on such exchange offerings. The Treasury has made no similar arrangements for handling maturities of other savings bonds, relying upon the attractiveness of current offerings of savings bonds or on other Treasury securities to refinance maturing issues.¹⁶

STRUCTURE OF SAVINGS BOND YIELDS

Redemption values and interest payments on savings bonds are so arranged that yields realized by investors depend on the length of time the bonds are held prior to redemption.¹⁷ As shown by Chart 1, yields realized on E bonds rise over the term to maturity from zero yield within the first few months after the issue date to the full rate at maturity. Similar yield patterns have been built into the terms of other series of savings bonds.¹⁸ E bonds held after the original term to maturity are an exception; their yields are fairly level, regardless of the length of time they are held after the original maturity date.

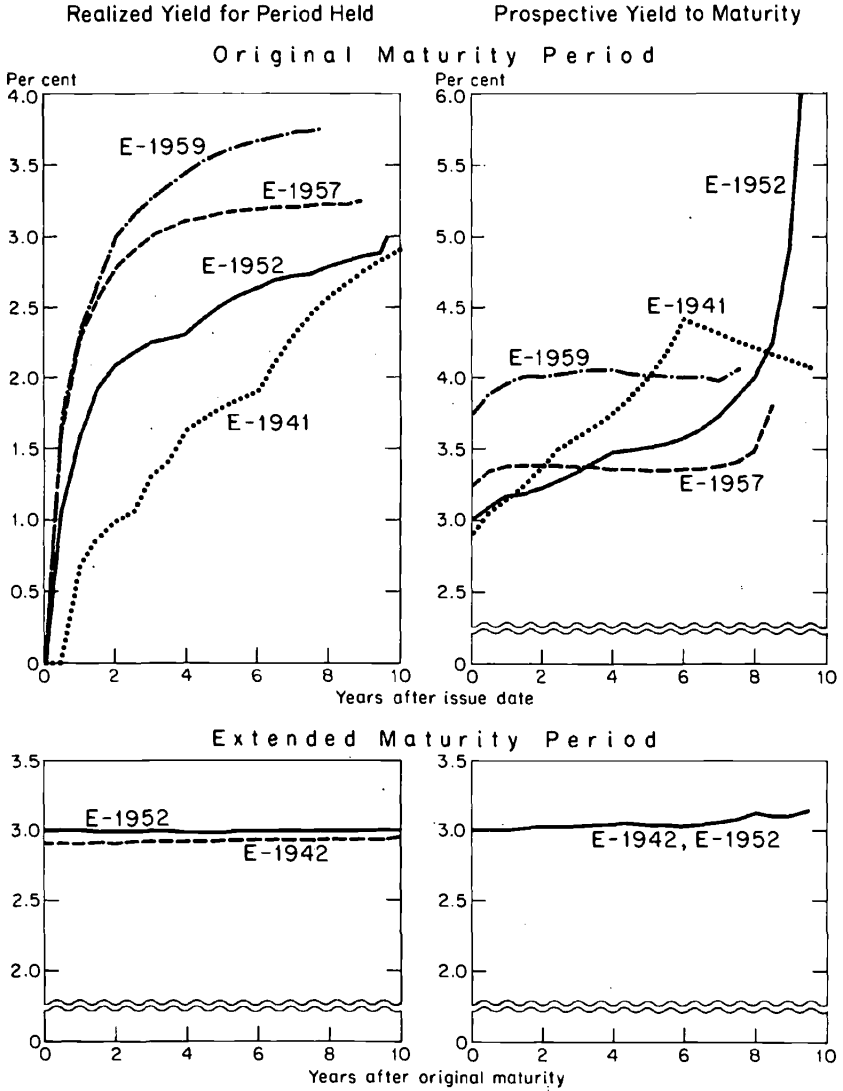
¹⁶ Holders of maturing E bonds with issue dates of May 2, 1941, through May 1, 1949, have been permitted to keep their bonds for two additional ten-year periods; for bonds with later issue dates, one additional ten-year period has been allowed. Holders of matured E bonds also have been permitted to exchange their bonds for G and K bonds, but few have done so. Effective January 1, 1960, holders of F bonds with issue dates of January 1, 1948 and thereafter and all E and J bonds (whether matured or not) may convert their bonds into H bonds without reporting the interest accrued for federal income tax purposes until the H bonds are redeemed or mature. Late in 1958, holders of maturing F and G bonds were granted permission to exchange their bonds for E and H bonds without regard to limitations on the holdings of the latter series. Holders of certain issues of F and G bonds were also permitted to exchange their bonds at or shortly before maturity for marketable securities in three offerings in 1953, 1959, and 1960.

¹⁷ Except where otherwise indicated, data on savings bond yields shown in tables and charts or cited in the text refer to rates prescribed at the time the bonds were sold, and do not reflect adjustments made in 1959 on outstanding E and H bonds.

¹⁸ The rising pattern of realized yields is accomplished in a number of ways. Savings bonds paying no current interest (Series A through F and J) are sold at a discount, with interest accruing at an increasing rate during the term. In the case of Series H bonds, semiannual interest payments are graduated upward, depending on the time the bonds are held. Series G and K bonds pay current interest at a fixed rate. They were sold at par, but normally are redeemable prior to maturity at discounts that vary over the investment period.

CHART 1

Yields on E Bonds, by Length of Time Held



SOURCE AND NOTE TO CHART 1

SOURCE: *United States Savings Bonds, Series E*, Treasury Dept., Department Circular No. 653, 5th rev., September 23, 1959, and *Treasury Bulletin*, May 1957, pp. A-3, A-4, and A-5. E-1941 refers to bonds issued May 1941-April 1942; E-1942, May 1942-April 1952; E-1952, May 1952-January 1957; E-1957, February 1957-May 1959; and E-1959, June 1959 and thereafter.

NOTE: Data are rates per annum, compounded semiannually, prescribed on E bonds at time of offering or announcement of extended maturity provisions and do not reflect revisions made in 1959 in yields on bonds then outstanding. Realized yields for period of time the bonds are held are rates of return on purchase price of new issues from issue date to beginning of each six-month period, when redemption values of outstanding bonds increase. Prospective yields are rates of return on current redemption value of outstanding bonds from beginning of each six-month period to original maturity or to extended maturity. Yields during extended maturity periods on E bonds sold February-April 1957 as originally offered were identical to those on bonds sold May 1952-January 1957. Yields during extended maturity periods on E bonds sold in May 1957 and thereafter and during second extended maturity period on E bonds sold May 1941-May 1949 had not been announced at the time this study went to press.

The shape of the realized-yield curve has been patterned loosely after the term structure of yields on marketable Treasury securities existing at the time the E-bond yields were set. The original E-bond curve showed a marked difference between yields on bonds held for short periods of time and the yield at maturity, similar to the wide differences that existed during World War II between rates on short-term and those on long-term marketable Treasury securities. When the yield at maturity on new issues was raised, yields during the early years of the investment period were also increased. As indicated by changes in the shape of the realized-yield curve, yields on E bonds redeemed after short periods of time were increased sharply relative to the yield at maturity in 1952 and 1957, possibly reflecting postwar changes in the term structure of rates of marketable securities and, also, an attempt by the Treasury to make savings bonds more attractive despite statutory restrictions that permitted only a small adjustment in the yield at maturity. In 1959, Congress granted the Treasury more leeway to raise E-bond yields. Accordingly, the Treasury increased yields on bonds held for short periods less than it increased the yield at maturity. In 1959, however, yields during the early part of the maturity period were still higher relative to the yield at maturity than in 1941, as indicated by the greater curvature of the realized-yield curve for bonds issued in the later year.

As a consequence of the upward-sloped realized-yield curve, the holder who wishes to liquidate his bond prior to maturity faces the prospect of "losing" interest and may be induced to continue to hold

his bond. One-year yields on E bonds generally have been lower than yields on marketable Treasury securities of comparable maturity. They also have been lower than average effective rates of return paid on savings accounts by savings and loan associations and mutual savings banks. Holders of savings accounts who withdraw funds generally do not incur an interest penalty comparable to that involved in the liquidation of savings bonds prior to maturity.

To look at the yield pattern in another way, at any time after the issue date the prospective yield on the current redemption value for the remaining period to maturity is higher to some degree than the rate realized for the full period from issue date to maturity. As long as yields on comparable investments (after allowance for differences in risk and liquidity) remain below the prospective yield to maturity, it is to the investor's advantage to continue holding his savings bond. However, when yields on alternative investments rise above prospective yields to maturity on savings-bonds, as occurred frequently in the case of Series F, G, J, and K bonds during the 1950's, it becomes profitable to shift funds to other investments.

Certain other technical features tend to inhibit redemptions prior to maturity. Series G and K bonds, which were designed for trust funds, pay current interest at constant rates throughout the term to maturity, and are redeemable prior to maturity generally only at discounts from the original purchase price.¹⁹ In effect, the investor must pay back some of the interest already received, thus obtaining interest at a lower rate than if he had held his bonds until maturity, as is true of other series of savings bonds. Since the trust fund charges the discount to income, a lifetime beneficiary of a fund heavily invested in G and K bonds would sustain a substantial, if only temporary, reduction in current income at the time the bonds were redeemed. Even though the remainderman may benefit substantially from a shift to other investments, this feature may forestall redemption of G and K bonds prior to maturity. Redemptions may also be discouraged in the case of discount bonds by their tax-deferment feature.

Although interest "penalties" may discourage redemptions of outstanding savings bonds (until yields on alternative investments rise sufficiently) they also may discourage purchases of new bonds. Yields at maturity must be high enough to compensate for the low rates during the early years to make E bonds competitive with savings accounts.

¹⁹ See Table A-1 for exceptions to this rule.

SAVINGS BOND YIELDS AND OTHER INTEREST RATES

Interest rates on savings bonds are administered rates. They are established by the Treasury, are subject to a statutory ceiling, and, in practice, have been maintained at constant levels for lengthy periods of time. Yields at maturity of the original A bonds, issued in 1935, were set at a level above prevailing yields on long-term marketable Treasury bonds.²⁰ During World War II and the early postwar period, yields at maturity of all series of savings bonds exceeded yields on long-term governments; and, indeed, the E-bond rate generally exceeded market yields on Aaa corporate bonds (Chart 2).

After 1951, however, yields at maturity of F and G bonds and their successors, J and K bonds, were generally below those of long-term marketable Treasury bonds, owing to the maintenance of savings bond yields at relatively low levels in the face of increases in market interest rates. Throughout most of the 1956-60 period, E- and H-bond rates also were below marketable bond yields. Savings bond yields were raised in 1952, for the first time since the inception of the program, and again in 1957 and 1959,²¹ on each occasion following pronounced increases in marketable bond yields. However, none of these increases restored savings bond yields at maturity to the favorable position they had relative to market interest rates during World War II and the early postwar years.

Somewhat similar relationships have existed between savings bond yields at maturity and rates of return paid on savings accounts by the principal financial intermediaries. As Chart 3 shows,²² the original 2.90

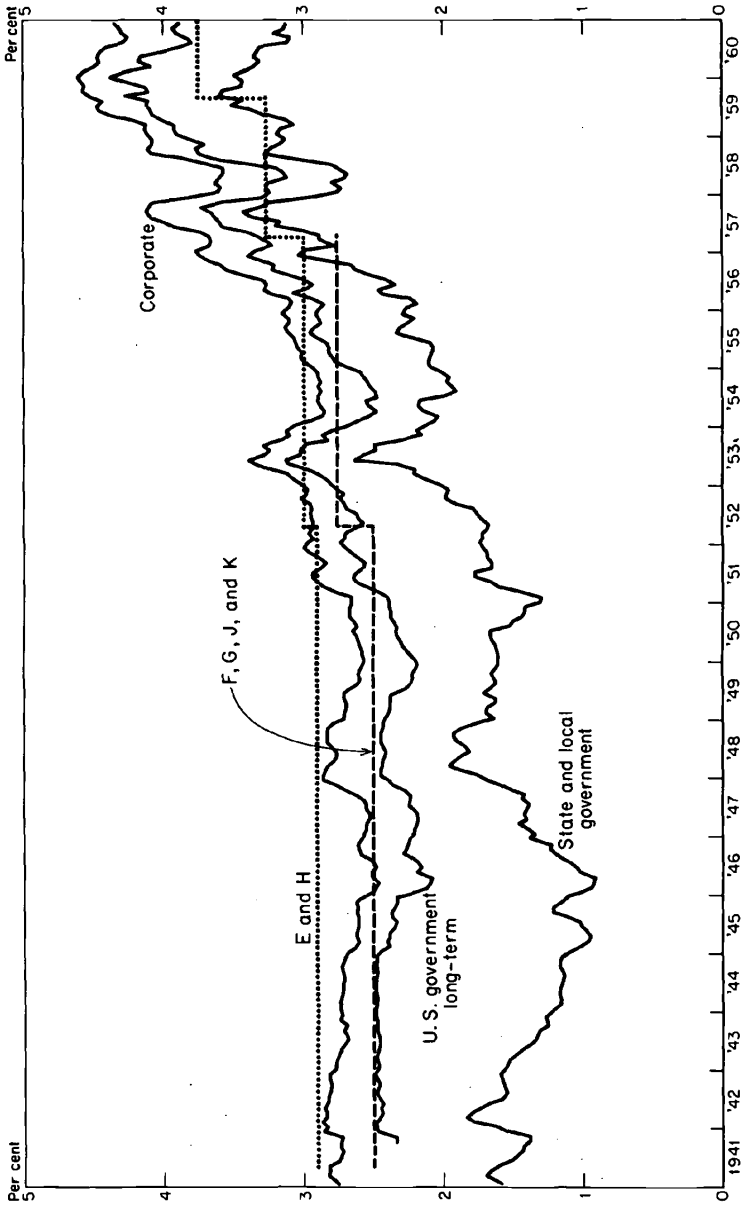
²⁰ In 1935, when the first savings bonds were issued, the average of yields on marketable Treasury bonds due or callable in twelve years or more was 2.79 per cent, compared with 2.90 per cent for a ten-year term for savings bonds.

²¹ Increases in yields at maturity of E bonds were accomplished by reducing the term to maturity (from the original ten years to nine years eight months, eight years eleven months, and seven years nine months in 1952, 1957, and 1959, respectively), while retaining the 75 per cent ratio of purchase price to maturity value. Increases in yields at maturity of H bonds were accomplished by increasing the amount of interest paid without reducing the period to maturity. When F and G bonds were replaced by higher-yield J and K bonds, no change was made in maturity periods.

²² Figures shown in Chart 3 for savings bonds are not strictly comparable with those for the three types of private intermediaries, since the former are yields realized only by investors who hold their bonds until maturity or redeem their bonds after one year, while the latter are average effective rates of return paid to all account holders. Moreover, effective rates paid by intermediaries are generally somewhat lower than nominal, advertised rates. For those investors who consider nominal rates in choosing among alternative savings media, the attractiveness of savings bond yields relative to rates offered by intermediaries tends to be overstated by the comparisons in Chart 3.

CHART 2

Yields at Maturity on Savings Bonds Compared with Yields on Marketable Bonds, Monthly, 1941-60



NOTE TO CHART 2

Data on E and H bonds are yields at maturity on new issues, as prescribed at time of offering in indicated months, and do not reflect revisions in yields on outstanding bonds of these series made in 1959 or retroactive application of rate changes in April 1957 and September 1959 to bonds sold February-March 1957 and June-August 1959. (See note to Chart 1.) H bonds (whose yields at maturity are identical to those of E bonds) are included beginning in June 1952, when they were first offered. Data on F, G, J, and K bonds are yields at maturity on new issues of G bonds (which are closely similar to those of F bonds) May 1941 to April 1952, and on J and K bonds beginning in May 1952, after they replaced F and G bonds. Sales of new J and K bonds were terminated at the end of April 1957.

Long-term United States government bonds: Federal Reserve data on taxable bonds maturing or callable after fifteen years, October 1941 to March 1952; after twelve years, April 1952 to March 1953; and after ten years, April 1953 and thereafter.

Corporate and state and local government bonds: figures from Moody's Investors Service for Aaa bonds.

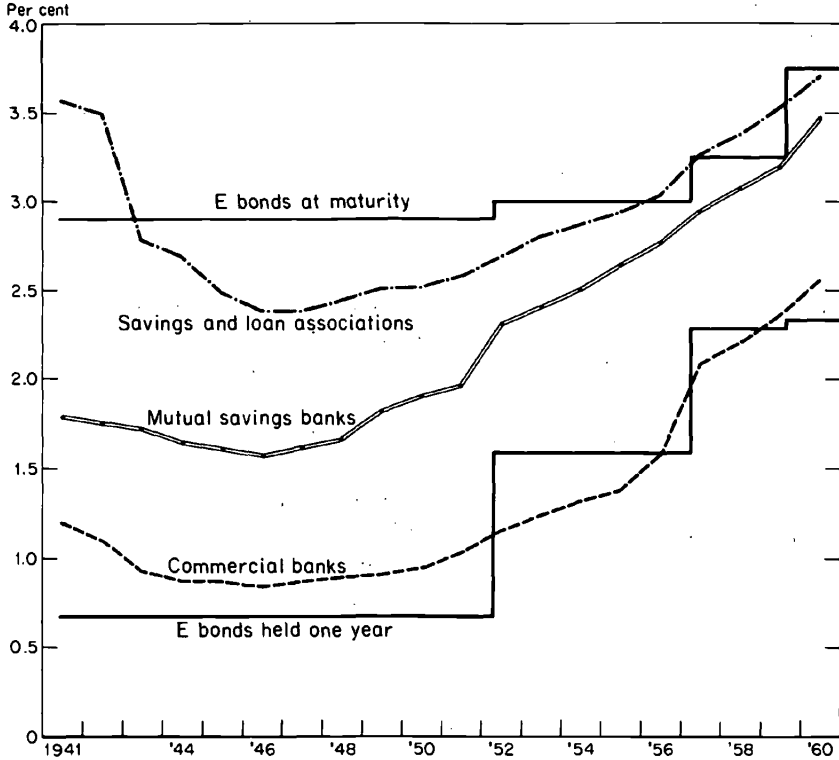
per cent yield at maturity offered on Series E bonds in 1941 was considerably higher than effective rates of interest paid by commercial and mutual savings banks, although it was lower than the average rate of dividends at savings and loan associations. From the late 1930's until the early postwar period, effective rates of return paid by financial intermediaries declined, while E-bond yields remained fixed.

As a result of the rise in effective rates of intermediaries during the late 1940's and the 1950's, however, the yield advantage of E bonds diminished; and, in 1960, average rates at all three types of institutions were substantially closer to the E-bond rate at maturity than during the early postwar period.

Yields on savings bonds held for short periods of time generally have been relatively unattractive to investors, even during the period when rates paid at maturity were maintained at premium levels. The pattern of yields had the effect of denying to investors who liquidated savings bonds prior to maturity part or all of the "bonus" paid to those who were willing to hold savings bonds for the full term. This, incidentally, made savings bonds relatively inexpensive as a means of short-term borrowing. Despite sharp increases in yields in 1952, 1957, and 1959, one-year yields of all series of savings bonds have been lower than average yields on marketable Treasury securities maturing in nine to twelve months except during the recession years 1954 and 1958; and yields on F, G, J, and K bonds held for four years generally were lower than those of comparable marketable securities (Table 2). As Chart 3 shows, one-year yields on E bonds have been below average effective yields on savings accounts at savings and loan associations and mutual savings banks.

CHART 3

Yields on E Bonds Held One Year and to Maturity, and on Savings Accounts in Selected Types of Financial Institutions, 1941-60



NOTE: Data on E bonds are yields at maturity and one year after the issue date on new issues, as prescribed at time of offering, and do not reflect adjustments in yields on outstanding bonds made in 1959, or retroactive application of rate changes in April 1957 and September 1959 to bonds sold in February-March 1957 and June-August 1959. (See note to Chart 1.) Figures on savings accounts are interest or dividend payments as percentages of average amounts of time deposits, savings deposits, or share accounts held during year by insured commercial banks, mutual savings banks, and savings and loan associations; data are from Federal Deposit Insurance Corporation, Raymond W. Goldsmith, *A Study of Saving in the United States* (Princeton, N. J., 1955), Vol. I, Tables J-11 and L-38 (for mutual savings banks and savings and loan associations, 1941-45), Federal Home Loan Bank Board, and National Association of Mutual Savings Banks. Data on commercial banks include both time and savings deposits.

That the Treasury did not raise savings bond yields during the 1950's more closely in line with increases in other interest rates appears to be due to a number of factors. First, the statutory ceiling impeded upward adjustments in savings bond yields. The original ceiling established by statute in 1935 was 3.00 per cent. Congressional action was required before the Treasury could raise the yields at maturity of E and H bonds to 3.25 per cent in 1957 and to 3.75 per cent in 1959. On both occasions, Congress showed a reluctance to grant the Treasury much leeway to raise savings bond yields. In 1957, the Treasury requested that it be authorized to establish savings bonds yields up to a level of 4.25 per cent, but was held by the Congress to a limit of 3.26 per cent. In 1959, however, the Treasury was authorized to exceed the 3.26 per cent ceiling up to a top limit of 4.25 per cent, provided that the President finds such action is required by the national interest.

Postwar Treasury policy may also have been motivated by a desire to refrain from overly aggressive competition for individuals' savings with private financial institutions which support the E bond program.²³

Another factor that had a bearing on the determination of savings bond yields in the 1950's was the shift in policy with respect to the sale of marketable and nonmarketable securities to large investors. Greater reliance was placed by the Treasury on marketable securities during this period, while the sale of redeemable, nonmarketable securities to large investors, whose purchases and liquidations had proved to be volatile, was ended.²⁴ In effect, the J and K bond programs were permitted to wither on the vine, by keeping their yields at a submarket level. Finally, the sale of new bonds in these series was terminated early in 1957.

Treasury policy with respect to savings bond yields also reflects, in addition to the influence of statutory limitations and broad debt management policy considerations, the difficulty of adjusting a borrowing instrument developed under conditions of capital market ease and pegged government bond prices to the radically different financial environment prevailing in the 1950's. Prior to 1951, no changes were

²³ See testimony of Secretary John W. Snyder, *Monetary Policy and the Management of the Public Debt*, Hearings before the Subcommittee on General Credit Control and Debt Management of the Joint Committee on the Economic Report, 82nd Cong., 2nd sess., March, 1952, p. 44.

²⁴ "The elimination of the sale of short-term savings notes in the fall of 1953 and the recent dropping of sales of the investment type J and K savings bonds as of April 30, 1957, represent major steps in the reduction of the more volatile Treasury demand debt" (statement by Under Secretary of the Treasury W. Randolph Burgess before the Senate Committee on Finance, reprinted in *Annual Report*, Treasury, 1957).

needed to keep savings bond yields competitive, because other interest rates were relatively low and stable. To keep savings bond yields competitive at all times since the Federal Reserve-Treasury accord, however, the Treasury would either have had to make more frequent adjustments in savings bond rates in response to changes in market interest rates or else set savings bond rates at a fixed level near the peak of anticipated fluctuations in market interest rates. Apparently, neither alternative seemed attractive or feasible to the Treasury. On the one hand, frequent changes up and down in savings bond rates would seem to be inconsistent with the emphasis of the program on regular saving and systematic purchases through the payroll savings plan. On the other hand, a high, fixed level of rates that would make savings bonds competitive at all times would be uneconomical during periods of low market interest rates.

Advances in market interest rates and rates paid by intermediaries in 1959 led to changes in E- and H-bond yields that represented significant departures from previous Treasury practice. Yields at maturity of new issues of E bonds were raised substantially more than in the past (0.5 per cent compared with 0.25 per cent in 1957 and 0.10 per cent in 1952). Moreover, for the first time in the program's history, yields on *outstanding* E and H bonds were raised as well as those on new issues. Yields on outstandings for the remaining period to maturity were raised by at least 0.50 per cent above the levels prescribed at the time the bonds were sold.²⁵ These adjustments in yields on outstanding E and H bonds were designed to lessen redemptions for the purpose of shifting funds to the new higher-yield issues of E and H bonds that appeared at the time and to other investments.

NONINTEREST COSTS OF THE SAVINGS BOND PROGRAM

In addition to interest, the savings bond program also has substantial noninterest expenses of a type not incurred by other media of Treasury borrowing. These expenses, however, have not been borne solely by the Treasury. The advertising industry for a number of years has contributed, free, advertising reportedly valued at about \$50 million a year, which if undertaken by the Treasury would add approximately \$0.12 per \$100 of outstanding bonds to the cost of the program.²⁶ Routine

²⁵ For details of these changes see *United States Savings Bonds*, Treasury Dept., Department Circulars, *Series E*, No. 653, 5th rev., and *Series H*, No. 905, 2nd rev., September 23, 1959.

²⁶ Fifty million dollars of advertising costs related to \$43 billion of E and H bonds outstanding. The advertising expense figure is from *Annual Report*, Treasury, 1960, p. 158.

handling operations associated with the large numbers of small-denomination E bonds sold and redeemed have been assumed partly by banks, other financial institutions, companies participating in the payroll savings plan, and other private issuing or paying agents. The Treasury does not directly compensate these agents for expenses incurred in the sale of E bonds. The agents, of course, may deduct these expenses from their taxable income. Furthermore, the federal government maintains interest-free balances in commercial banks, which some persons have regarded as compensation to these institutions for services on behalf of the savings bond program and for other services. They were reimbursed for handling redemptions at an average cost to the Treasury of \$0.1265 per bond in fiscal-year 1960, representing an addition of \$0.03 per \$100 to the cost of servicing the E-bond debt.²⁷ However, fragmentary information suggests that this rate of compensation may cover only a part of the costs borne by some institutions.²⁸ On the other hand, making E bonds available to investors may be advantageous, particularly for commercial banks which do not emphasize savings accounts, in that it broadens the range of services offered and contributes to customer "traffic" in the bank.

Loss of tax revenue due to the postponement and possible avoidance of taxes by holders of discount bonds is an additional cost of uncertain magnitude, which the Treasury does not have to bear in the case of other types of securities.

SIMILARITIES BETWEEN E BONDS AND SAVINGS ACCOUNTS

In many essential respects from the investor's point of view, E bonds are similar to savings accounts at private financial institutions. Both E bonds and savings accounts are safe investments which may be readily converted into cash without risk of loss to the owner. Both are continuously available to investors, "over the counter," at a large number of institutions throughout the country. Both may be obtained in small

²⁷ *Ibid.*, p. 123.

²⁸ Cost figures based on a sample of 200 commercial banks indicate that in 1958 the average cost of handling E bond sales was \$0.38 per bond and the cost of handling redemptions (net of reimbursement) was \$0.1335 per bond (*Report on Treasury Tax and Loan Accounts, Services Rendered by Banks for the Federal Government, and Other Related Matters*, Treasury Department, Fiscal Service, June 15, 1960, pp. 10-11). The cost to the federal government of servicing the savings bond program is also discussed in *Treasury Post Office Departments, Appropriations for 1959*, hearings before the Subcommittee of the Committee on Appropriations, U.S. House of Representatives, 85th Congress, 2nd Session, pp. 325-326.

units; E bonds may be purchased in denominations as low as \$25, while no minimum balance of any consequence is generally required to be held in savings accounts. Yields and other essential features of savings accounts at individual institutions, as well as E bonds, normally are held fixed for months or even years without change.

One important difference has already been mentioned. Yields realized on E bonds that are redeemed prior to maturity are lower, often substantially so, than yields realized at maturity, while holders of savings accounts who withdraw funds generally are not subjected to comparable "losses" of interest.²⁹ Another difference is that the E bond is a long-term contract in which the Treasury is committed years in advance to pay particular rates of interest, while the rate paid on a savings account may be changed at the option of the institution. Accordingly, increases in yields on savings accounts apply to all existing accounts, while increases in yields on E bonds have applied (until 1959) only to new issues. The privilege of postponing tax payments on accrued interest is another distinctive feature of E bonds. Finally, E bonds may be purchased at many corporations and institutions through regular deduction of sums from purchasers' wages. Relatively few financial institutions (chiefly credit unions) offer payroll savings plans for savings accounts.

²⁹ Some financial institutions differentiate among savers with respect to the length of time their funds remain invested, offering lower rates on short-term savings than on long-term savings. However, the minimum rate offered by such institutions generally is not regarded as a penalty rate, and is frequently the standard rate which many savings-account holders receive.