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## 4

# Postwar Behavior of Savings Bond Holders

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Preceding chapters were concerned with the basic, distinguishing characteristics of savings bonds and with the distribution of savings bond holdings among individuals and other investors. The purpose of the present chapter is to describe the behavior of savings bond holders during the postwar period and to indicate the economic and financial forces underlying variations in sales and redemptions. This chapter deals with three main subjects: (1) the reduced importance of savings bonds in individuals' financial saving relative to the prewar and the World War II periods, (2) short-run variations in sales and redemptions during the postwar period, and (3) the turnover of savings bond holdings.

The postwar record of sales and redemptions is significant in several respects. Since savings bonds have been an important element in individuals' financial saving, analysis of the determinants of the behavior of holders of these bonds may contribute to understanding of broader aspects of the investment behavior of individuals. More specific to the purpose of this paper, however, is the significance of the postwar record of sales and redemptions from the standpoint of federal debt management. Since savings bond holdings constitute a large accumulation of near-demand claims, the analysis of the behavior of holders—particularly their responsiveness to economic change and sensitivity to interest rate relationships—is basic to the appraisal of the role of the program in federal debt management. The postwar record of behavior also provides an essential factual basis for the study of broader aspects of debt management, including the significance for the Treasury of borrowing directly from the mass of individual savers. The role of the program in postwar debt management is discussed in the last chapter, which utilizes findings on savings bond behavior developed here.

## POSTWAR POSITION OF SAVINGS BONDS IN INDIVIDUALS' FINANCIAL SAVING

In the perspective of the quarter-century history of the savings bond program, the most striking aspect of the postwar record is the sharply diminished relative position of these bonds in individuals' financial saving. Although postwar additions to savings bond holdings represented a significant proportion of financial saving, particularly during the early years following the end of World War II, their relative importance in the total was markedly smaller than in preceding periods. This shift reflected basic changes in the environment in which the program has operated.

The slight \$700 million decrease in the amount of savings bonds outstanding during the fifteen-year period from 1946 to 1960 contrasted sharply with the \$45.0 billion rise during 1941-45, and, indeed, with the \$3.2 billion rise from the inception of the program to the end of 1940.<sup>1</sup> The small postwar decline reflected the combined effects of the \$8.0 billion excess of redemptions over sales, which tended to reduce the amount of savings bonds outstanding, and \$7.3 billion of net accrued interest, which tended to increase outstandings.<sup>2</sup> According to Treasury estimates, individuals (including partnerships and personal trust accounts) increased their holdings by \$2.7 billion, while other investors reduced theirs by \$3.4 billion.

The decline in additions to savings bond holdings after World War II reflected partly the decline in the general level of personal saving from extraordinary wartime levels, accompanying the expansion in the supply of consumer goods, previously unavailable, and other economic changes. More significantly, it resulted from a massive shift in the composition of saving in favor of other media, as shown by data

<sup>1</sup> Data on outstandings are based on the current redemption value of discount bonds (Series A through F and J) and the par value of current-income bonds (Series G, H, and K), and exclude savings stamps. All data on sales, redemptions, and amounts outstanding of savings bonds are derived from *Annual Report*, Treasury, and *Treasury Bulletin*.

<sup>2</sup> Sales and redemptions are measured in terms of sales price. The annual amount of net accrued interest equals the interest accrued on outstanding bonds less the accrued interest portion of the value of bonds redeemed during the year.

on saving for the period 1935-58 in Table 11.<sup>3</sup> This shift is evident not only when additions to individuals' holdings are compared with gross financial saving, but also when they are compared with additions to savings accounts, assets closely similar in terms of safety, liquidity, and convenience to the saver. The decline in the relative position of savings bonds in individuals' saving was most pronounced after 1950, and for series other than E and H.

The diminished importance of savings bonds in individuals' financial saving may be attributed to a number of factors. It reflected partly the disappearance or weakening of temporary wartime stimulants that had enabled the program to capture an unusually large share of total saving during 1941-45, including massive bond drives, wartime patriotism, and widespread purchases on a semicontractual basis through payroll deductions. Moreover, continued growth of savings bond holdings on the wartime scale would not have been in accord with the Treasury's greatly reduced financing requirements.

Another major influence was the decline in the relative attractiveness of savings bonds to investors, due to the rise in yields on alternative media during the 1950's.

A third important influence was increasingly aggressive competition from private financial institutions during the postwar period, reflected not only in rising rates of return on savings accounts but also in the increased use of advertising, "giveaways," and other promotional activity. By contrast, promotional activity on behalf of the savings bond program has been less aggressive during the postwar period than during the war years.

Another possible factor underlying the shift to other types of assets may have been changes in individuals' investment preferences, resulting in an upgrading of deposits and shares in private financial intermediaries. Much of the growth of the savings bond program in the prewar and World War II periods probably reflected a shift to savings media of unquestioned safety in reaction to the financial crisis of the early 1930's. Postwar prosperity and the evident soundness of private financial institutions together with federal insurance of deposits and share accounts may have increased the relative attractiveness of private institutions as media for saving.

Finally, the maturing of bonds sold during World War II and discontinuation of some series were additional factors underlying the

<sup>3</sup> NBER estimates of nonfarm households' saving for 1946-58 in Table 11 are not fully comparable with estimates made by the Securities and Exchange Commission and included in the table for years prior to 1946. However, differences between the two series with respect to the share of savings bonds in financial saving are fairly small.

**TABLE 11**

**SAVINGS BONDS IN INDIVIDUALS' FINANCIAL SAVING,  
SELECTED PERIODS, 1935-58  
(dollars in billions)**

	1935 -40	1941 -45	1946 -50	1951 -58	1946 -58
<b>Net change in savings bonds outstanding<sup>a</sup></b>					
Total	\$3.2	\$45.0	\$10.0	—\$6.4	\$ 3.7
E and H		30.7	3.8	8.1	11.9
<b>Share of savings bonds in gross financial saving<sup>b</sup></b>					
Total	10%	26%	8%	—1%	1%
E and H		20	4	3	3
<b>Share of savings bonds in net changes in fixed-value, redeemable claims<sup>c</sup></b>					
Total	39%	63%	27%	—5%	4%
E and H		47	16	9	11

SOURCE: National Bureau of Economic Research, Securities and Exchange Commission, and Treasury Department.

NOTE: Share of savings bonds computed from NBER estimates of saving by nonfarm households, 1946-58, and data on individuals' saving from Securities and Exchange Commission, 1935-45. Data for 1946-58 are not strictly comparable with earlier years. Estimates of nonfarm households' holdings of E and H bonds are based on the assumption that the ratio of E and H bonds to total savings bonds in holdings of nonfarm households is equivalent to the corresponding ratio for individuals, partnerships, and personal trust accounts. Data on savings bonds include net accrued interest.

<sup>a</sup> Net change in total savings bonds and E and H bonds outstanding, including holdings of individuals and all other investors.

<sup>b</sup> Net change in savings bonds held by individuals as percentage of gross financial saving (net acquisitions of financial assets, excluding changes in indebtedness).

<sup>c</sup> Net change in savings bonds held by individuals as percentage of change in individuals' holdings of fixed-value, redeemable claims — savings deposits in commercial and mutual savings banks, postal savings, shares in credit unions and savings and loan associations, and savings bonds.

decline in the relative position of savings bonds, particularly in the 1950's. In brief, the diminished postwar importance of savings bonds in individuals' financial saving relative to earlier periods reflects deep-seated economic, financial, and psychological changes, as well as factors specific to the program.

## POSTWAR FLUCTUATIONS IN SAVINGS BOND FLOWS

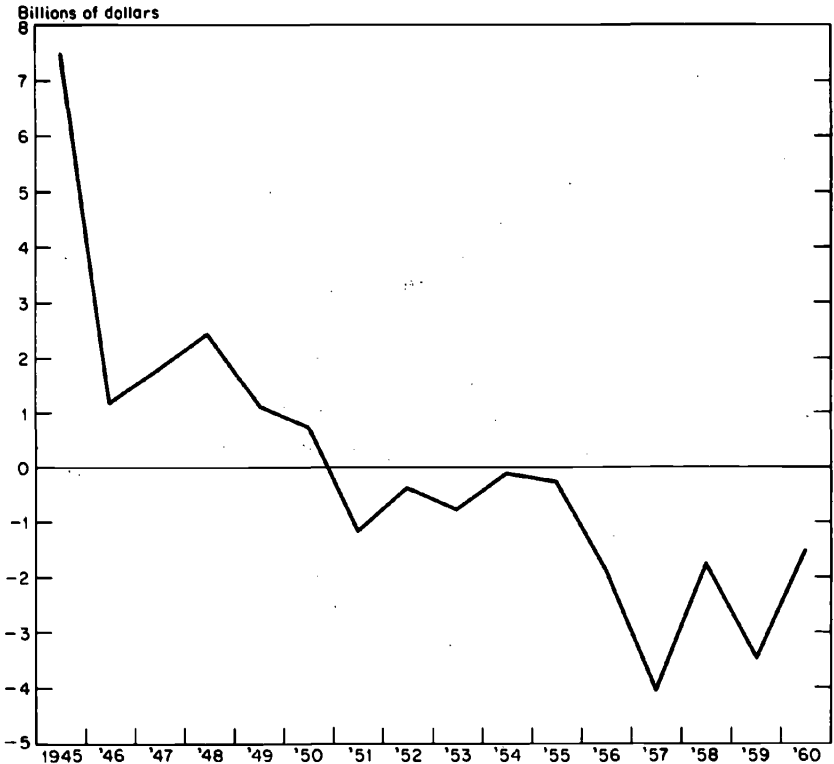
Within the span of the fifteen years after the end of World War II, sharp fluctuations occurred in the flow of funds channeled into the savings bond program. When total savings bond flows are broken down into component flows, it is evident that patterns of movement of the various series have differed markedly. It is important to bear in mind this diversity of movement in appraising the factors underlying savings bond behavior.

For the purpose of analyzing changes in total and in component flows, appropriate measures are sales, redemptions, and net sales (sales less redemptions) taken in terms of sales prices of bonds sold or redeemed, excluding the net amount of interest accrued on bonds sold at discount. Changes in the annual amount of net accrued interest stem mainly from technical factors. Although the accrual of interest has been an important factor in the growth of savings bond holdings (Table A-2), it is excluded throughout most of the following discussion because it tends to obscure the response of savings bond flows to economic and financial forces.<sup>4</sup>

As Chart 4 shows, annual net sales of savings bonds underwent a sweeping decline during the postwar period. In each year from 1946 to 1950, net sales were positive, as sales exceeded redemptions, amounting to \$7.3 billion for the entire five-year period. In 1951, net sales turned negative, as sales dropped below redemptions, and remained negative thereafter. During 1951-60 net sales amounted to \$-15.3 billion.

<sup>4</sup> Annual variations in net accrued interest reflect mainly changes in the amount and age of outstanding bonds, changes in the volume and age of redeemed bonds, and the structure of interest rates on current and past issues of savings bonds. An alternative measure of net sales is the excess of sales over the total dollar amount of redemptions, including both the aggregate sales price and the accrued interest portion of the value of redeemed bonds. If this measure were used, redemptions would be greater relative to sales than is indicated in this paper, and net sales would be smaller, but patterns of year-to-year movements of savings bond flows would not change greatly.

**CHART 4**  
**Net Sales of Savings Bonds, 1945-60**



**SOURCE:** Data are sales less redemptions, in terms of sales price, derived from Treasury Department figures. Accrued interest is excluded. Data reflect redemptions of matured bonds, including exchanges for marketable Treasury securities (see note to Table A-4), and redemptions of unmatured bonds.

Superimposed on this broad decline were marked short-period fluctuations. Net sales dropped precipitously in 1946, 1950-51, 1956-57, and 1959. Each of these reductions reflected rapid changes in economic and financial conditions. Net sales also declined from 1948 to 1949, mainly because 1948 sales were swelled by a special offering of F and

G bonds to institutional investors.<sup>5</sup> During intervening periods and in 1960 net sales increased, but not enough to offset these reductions.

### *Differences Among Series*

In analyzing fluctuations in savings bond flows, a distinction should be drawn between Series E and H bonds, on the one hand, and Series F, G, J, and K bonds, on the other.<sup>6</sup> While E and H bonds were sold exclusively to "natural persons" throughout most of the period covered by this paper, F, G, J, and K bonds were available to and were bought in significant amounts by nonindividual investors. E- and H-bond flows, therefore, have been influenced more directly by changes in the general level of personal saving than flows of other series. Furthermore, buyers of E and H bonds probably have a greater preference for investments free of risk and are less likely to shift to marketable securities in response to any given differential in yields. Finally, because of their higher yields, E and H bonds were less vulnerable to increases in yields on competitive investments during the 1950's than F, G, J, and K bonds.

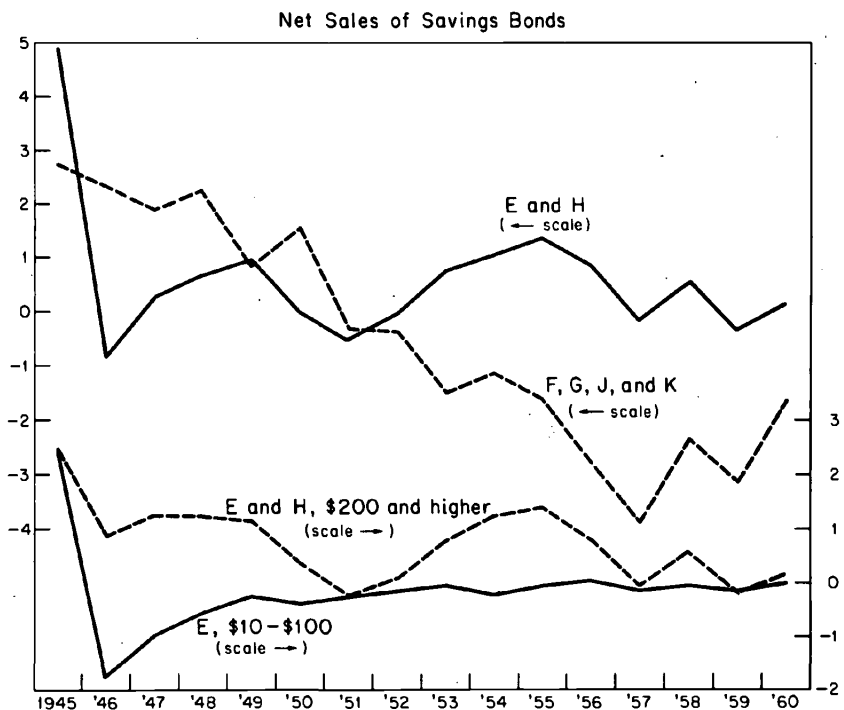
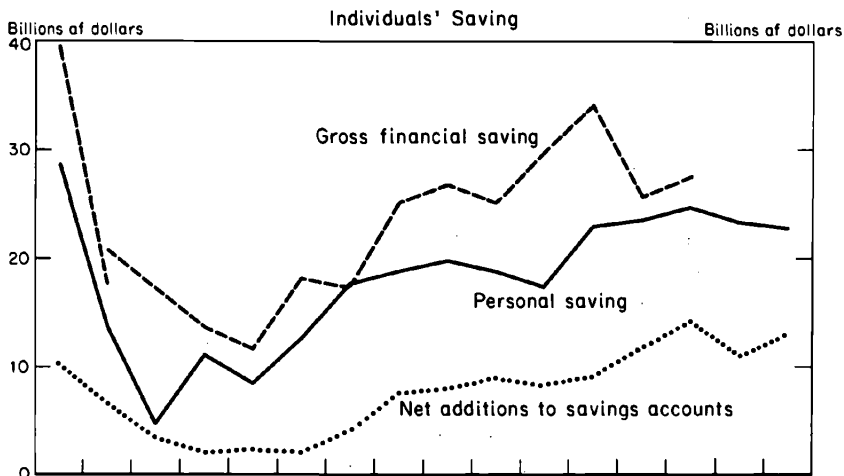
The influence of changes in the general level of saving on E- and H-bond flows is reflected in the concurrent sharp declines at the end of World War II in personal saving and net sales of E bonds (Chart 5). Similarly, the sudden drop in personal saving during the consumer buying spree following the outbreak of the Korean War, in mid-1950, was reflected in a pronounced decline in net sales of E bonds. In this instance, however, the similarity of movement is obscured in the annual data by the subsequent more rapid recovery of total saving than of E bonds. As a result, the general rise in saving during the early 1950's was reflected by increased net sales of E and H bonds only after a substantial lag.

In addition to fluctuations in the general level of saving, changes in the relative attractiveness of savings bonds and other savings media have had an important influence on E- and H-bond flows. This is

<sup>5</sup> In June 1948, financial institutions other than commercial banks were permitted to purchase F and G bonds in amounts exceeding prevailing limits on annual purchases, and commercial banks were also permitted to purchase limited amounts of these bonds. The Treasury sold over \$1 billion of F and G bonds to all investors in that month. Another special offering of F and G bonds occurred during the last three months of 1950, when the Treasury sold \$930 million of F and G bonds to institutional investors under terms similar to those adopted in 1948.

<sup>6</sup> In addition to activity in these bonds, investors liquidated prewar A-D bonds, mainly during the period from 1946 to 1951. The total amount of A-D bonds outstanding at year-end 1945 was \$3.5 billion. By the end of 1951 only \$152 million remained outstanding.

**CHART 5**  
**Individuals' Savings and Net Sales of Savings Bonds, 1945-60**



## NOTE TO CHART 5

Gross financial saving refers to net acquisitions of financial assets, excluding changes in indebtedness; data are NBER estimates for nonfarm households, 1946-58, and Securities and Exchange Commission figures for individuals, 1945 and 1946. NBER estimates for 1959 and 1960 are not available. Data on savings accounts include savings and time deposits in commercial and mutual savings banks, postal savings, and shares in savings and loan associations and credit unions; they are compiled from Federal Reserve figures, 1946-60, and SEC data, 1945 and 1946. Figures on personal saving are from the Department of Commerce. Net sales of savings bonds refer to the excess of sales over redemptions in terms of sales price, and exclude accrued interest. They are computed from Treasury Department figures (see also notes to Charts 4 and 6 and Table 11).

indicated by differences in direction between changes in net sales of E and H bonds and total saving.

Net sales of F, G, J, and K bonds, by contrast, have not been strongly influenced by changes in the level of saving. They declined at the end of World War II, but much more moderately than net sales of E and H bonds, and rose in 1948 and 1950 because of special offerings to institutional investors. While total saving rose during the 1950's, net sales of F, G, J, and K bonds declined markedly and were negative throughout the 1951-60 period, even before the first bonds in this group reached maturity in 1953 and before sales of new bonds were discontinued in 1957.

Just as there have been differences in the behavior of the various series, so also have there been differences in the behavior of small- and large-denomination E bonds. As indicated by Chart 5, net sales of \$10-\$100 E bonds have been negative throughout the postwar period, with the exception of 1956, while net sales of larger denominations generally have been positive.<sup>7</sup> Except during the period of transition at the end of World War II, net sales of \$10-\$100 E bonds have varied over a narrower range than those of larger denominations. The relative stability of net sales of small-denomination E bonds probably stems from regular purchases through the payroll savings plan and the lesser sensitivity to capital market changes of small, unsophisticated investors.

<sup>7</sup> The division of E- and H-bond flows into classes by denomination necessarily is partly arbitrary. However, examination of sales and redemptions data for the various denominations suggests that groupings of denominations other than those used in this chapter would not result in significantly different conclusions. Differences in behavior between large and small denominations are evident in F-, G-, J-, and K-bond flows, but are not discussed here because dollar amounts of sales and redemptions of these series are dominated by large denominations, particularly \$1,000 and \$10,000 bonds.

## *Differences in Behavior of Sales and Redemptions*

Diversity of behavior is also evident when net bond flows are broken down into their underlying gross flows of sales and redemptions. Sales have generally varied inversely to redemptions, as might be expected, but at times both moved in the same direction (Chart 6). Although much attention has been focused on the possibility of cash drains on the Treasury resulting from redemptions, reductions in sales of new bonds often have been as important a cause of declines in the net flow of funds into the program as increases in redemptions.

Differences in the responsiveness of sales and redemptions to economic and capital market changes partly reflect interest "penalty" features, which tend to discourage investors from liquidating savings bonds prior to maturity. Because of these features, investors may respond to increases in yields on other investments by reducing their purchases of new bonds, but may continue to maintain their existing holdings intact. Some investors may also have continued to hold E bonds in order to postpone further the payment of federal income tax on accrued interest, while at the same time they may have preferred to channel new saving into other media.

In any event, it is clear that not only the ability of investors to liquidate their holdings at will but also the varying ability of the Treasury to sell fixed-yield savings bonds under changing economic and capital market conditions have been major factors responsible for postwar variations in the net flow of funds into the program.

## *Periods of Declining Net Sales*

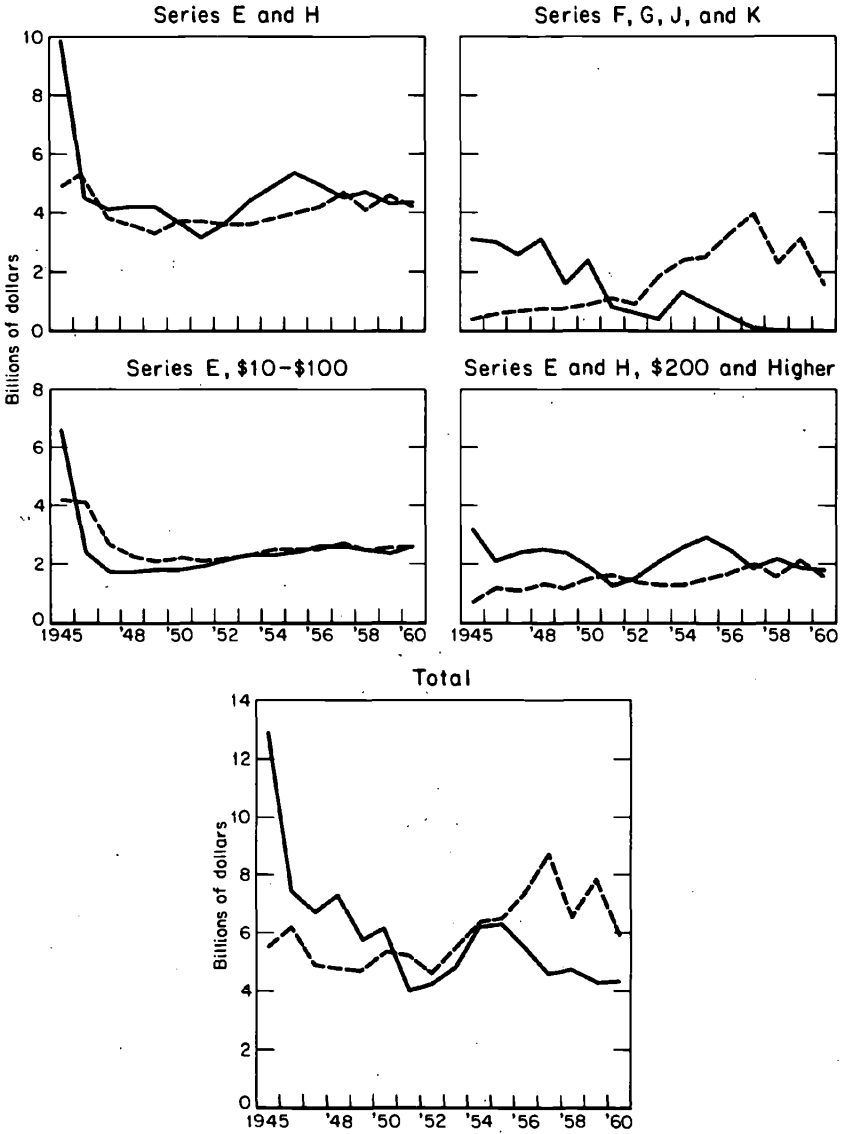
Periods of major reductions in the flow of funds into the program are of particular significance in appraising the role of savings bonds in federal debt management. Net outflows of funds resulting from excesses of redemptions over sales may exert unexpected drains on the Treasury's cash position. The behavior of savings bond holders during these periods provides an indication of the nature of the problems posed for the Treasury by the existence of a large amount of redeemable claims in the hands of individual investors.

As indicated earlier, the record of postwar savings bond flows has been dominated by sharp reductions in net sales—the sweeping decline from positive amounts during the early postwar years to negative amounts during most of the 1950's, and short-run reductions at the end of World War II, during the Korean War, and during periods of capital

### CHART 6

#### Sales and Redemptions of Savings Bonds, 1945-60

— Sales  
 - - - Redemptions



#### NOTE TO CHART 6

Figures were computed from Treasury Department data. They are in terms of sales price and exclude accrued interest. Redemptions include both matured and unmatured bonds. Figures on total savings bonds include redemptions of prewar A-D bonds. H bonds, first offered to the public in 1952, are included with E bonds beginning in June 1952. J and K bonds replaced F and G bonds in new offerings in May 1952; redemptions in 1952-60 include F and G bonds. Sales of new J and K bonds were terminated in 1957. Data on \$10-\$100 E and \$200 and higher-denomination E and H bonds are derived from figures on sales and redemptions of the various denominations, by number of pieces. The lowest denomination H bond is \$500. See note to Chart 4.

market stringency in 1956-57 and 1959. Each case is unique in a number of respects, reflecting differences among the various periods in the influential forces underlying savings bond behavior.

The marked decline in net sales from 1946-50 to 1951-60 was concentrated in Series F, G, J, and K bonds (Table 12), and was due initially to the reduced attractiveness of these bonds relative to marketable securities in the period since the Federal Reserve-Treasury accord. By contrast, average net sales of E and H bonds were higher during 1951-60 than in previous postwar years. As indicated earlier, the turn-about in total net sales stemmed partly from a decline in sales of new bonds and partly from an increase in maturities. The reduced attractiveness of F, G, J, and K bonds, therefore, was complicated by a refinancing problem—the unwillingness of many investors who purchased F and G bonds during World War II to replace maturing bonds with new ones, given the yield relationships that prevailed during most of the period since the accord. Holders of matured F and G bonds (except for commercial bank holders) could invest the proceeds in new J and K bonds prior to May 1957 and late in 1958 were granted the privilege of shifting to new E and H bonds without regard to the annual limitations on purchases of the latter series. However, under prevailing capital market conditions, savings bonds were not sufficiently attractive to these and to other investors so that new sales fell well below the increased level of total redemptions. Exchanges of F and G bonds for marketable securities in three separate offerings in 1953, 1959, and 1960 (which are included with redemptions of matured bonds in redemption data) and discontinuation of sales of new J and K bonds in 1957 further reduced total net sales of F, G, J, and K bonds.

The precipitous decline of \$6.3 billion in net sales from \$7.5 billion in 1945 to \$1.2 billion in 1946, by contrast, was due to radically different influences—the general decline in personal savings at the end of World

**TABLE 12**

**CHANGES IN SALES AND REDEMPTIONS OF SAVINGS BONDS DURING PERIODS  
OF DECLINING NET SALES, 1945-60**  
(billions of dollars)

	1946-50 to 1951-60 (annual rates)	1945-46	1949-51	1955-57	1958-59
Decline in total net sales	3.0	6.3	2.3	3.9	1.7
Decline in sales	1.8	5.5	1.9	1.7	.4
Increase in redemptions	1.2	0.8	0.4	2.2	1.3
Unmatured bonds <sup>a</sup>	-0.8	0.8	0.7	1.5	0.7
Matured bonds <sup>a</sup>	2.5	0.1	-0.1	-0.1	1.3
Unclassified <sup>a</sup>	<sup>b</sup>		<sup>b</sup>	0.9	-0.5
Decline in total net sales	3.0	6.3	2.3	3.9	1.7
A-D	-0.5	0.1	-0.2	<sup>b</sup>	<sup>b</sup>
E and H	-0.2	5.8	1.4	1.6	0.9
\$10-\$100 E	-0.7	4.2	<sup>b</sup>	0.1	0.1
\$200 and higher denomination E and H	0.5	1.6	1.4	1.5	0.8
F,G,J, and K	3.6	0.4	1.1	2.3	0.8

SOURCE: Computed from data in *Treasury Bulletin*.

NOTE: Positive figures indicate reductions in sales and increases in redemptions; negative figures represent increases in sales and reductions in redemptions. For the period prior to 1950, redemptions of matured bonds are assumed to be equivalent to total redemptions of A-D bonds. As indicated in the note to Table A-4, figures on redemptions of matured bonds include exchanges. See also note to Chart 6.

<sup>a</sup> Breakdown of redemptions includes accrued interest.

<sup>b</sup> Less than \$500 million.

War II and the special problems, already indicated, which the savings bond program faced in adjusting to peacetime conditions.

Savings bonds responded more sensitively to the general decline in saving at the end of World War II than did other media: the relative importance of net changes in individuals' holdings of savings bonds dropped from 17 per cent of gross financial saving and 41 per cent of net additions to fixed-value, redeemable claims in 1945 to 5 per cent and

13 per cent, respectively, in 1946.<sup>8</sup> As shown by Table 12, the decline was due largely to falling sales, mainly in small-denomination E bonds, which accompanied a drastic decline in membership in the payroll savings plan, from 25 million at mid-1945 to 7.5 million at mid-1946.<sup>9</sup> Reduced participation in the plan probably resulted partly from the withdrawal of persons who had joined during the war for patriotic reasons or under social pressure. Factory shutdowns and movement of labor stemming from demobilization probably also caused withdrawals from the plan.

Rapid changes in savings bond flows during the Korean War period were produced by still another set of circumstances. The \$2.3 billion reduction in net sales from 1949 to 1951 was triggered by scare buying by consumers, but was aggravated and prolonged by capital market developments that adversely affected the savings bond program. Net sales dropped from \$1.1 billion to \$-1.2 billion, largely owing to falling sales. The decline was concentrated in Series F and G bonds and in large-denomination E bonds. Perhaps surprisingly, small-denomination E bonds were less strongly affected, reflecting expansion in the number of participants in the payroll savings plan—from 5 million at mid-1950 to 5.8 million at mid-1951 and, further, to 7.5 million at mid-1952.<sup>10</sup>

Expecting shortages of consumer goods, consumers responded to the outbreak of hostilities in Korea and to subsequent events by markedly increasing their purchases of goods, particularly durables, in the third quarter of 1950 and the first quarter of 1951.<sup>11</sup> The effects of these waves of scare buying on total personal saving and net sales of E bonds are reflected in Table 13. Other media for liquid saving were also affected as indicated by the slight decline in net additions to savings accounts in 1950 (Chart 5).

While increased consumer spending was the initiating factor underlying the decline in net sales during this period, shifts in the composition of saving in response to rapid capital market changes and expectations of inflation apparently also played an important part. Net sales of savings bonds continued to decline after other savings media had recovered from the effects of the consumer spending rise. Although net sales

<sup>8</sup> Data are based on estimates compiled by the Securities and Exchange Commission. For types of savings media included, see notes to Table 11.

<sup>9</sup> *Annual Report*, Treasury, 1946, p. 47.

<sup>10</sup> *Annual Report*, Treasury, 1951, p. 145, and 1952, p. 191.

<sup>11</sup> See Bert G. Hickman, *The Korean War and United States Economic Activity, 1950-52* (Occasional Paper 49, New York, NBER, 1955), for a detailed analysis of economic changes during this period.

**TABLE 13**

**CONSUMER EXPENDITURES, PERSONAL SAVING, AND NET SALES  
OF E BONDS, QUARTERLY, 1950 AND 1951**  
(seasonally adjusted annual rates in billions of dollars)

Year and Quarter	Net Sales of E Bonds	Personal Consumption Expenditures		
		Total	Durable Goods	Personal Saving
1951				
I	0.72	185.7	26.8	15.2
II	0.47	189.9	27.9	11.8
III	-0.59	204.4	35.5	5.8
IV	-0.63	200.1	31.2	17.6
1952				
I	-1.16	210.5	33.0	8.2
II	-0.45	205.5	28.0	20.9
III	-0.24	208.8	28.5	20.7
IV	-0.12	213.4	28.4	20.4

NOTE: Data on net sales are in terms of sales price, excluding net accrued interest. They are based on monthly sales and redemption figures from *Treasury Bulletin*, adjusted by NBER for seasonal variations. Data on personal consumption expenditures and personal saving are from *United States Income and Output, A Supplement to the Survey of Current Business*, Dept. of Commerce, November 1958, pp. 147 and 153.

declined further in 1951 from the already low level of 1950, gross financial saving increased significantly on an annual basis in 1950, and declined only slightly in 1951. The shift to alternative media was concentrated mainly in additions to holdings of savings deposits and shares, which had dropped sharply during the early stages of the Korean War, but nearly doubled between 1950 and 1951. The Survey of Consumer Finances reported that, among individuals who were asked to state their investment preferences, the proportion expressing a preference for savings bonds and savings accounts decreased between early 1949 and early 1951, while the percentage favoring common stock and real estate increased. Between early 1951 and early 1952 there was an increased preference for savings accounts, but the proportion of spend-

ing units favoring savings bonds declined further. Over the same period, common stock continued to gain adherents but the gain was slight.<sup>12</sup>

These shifts in saving flows and investment preferences may reflect, apart from fears of inflation and stock market activity, dissatisfaction with the fixed yields of savings bonds at a time when the general level of interest rates was rising and, perhaps, expectations that these yields would soon be raised. From early 1951 until the spring of 1952, capital market yields were generally higher in relation to savings bond yields than previously during the postwar period. Rates of return paid by private financial institutions also were rising during the period. Net sales of savings bonds did not recover until 1952, when their yields were raised and current-income H bonds were introduced.

In contrast to earlier periods of declining net sales, when reductions in the general level of saving strongly influenced cash flows into the savings bond program, the \$3.9 billion drop in net sales from \$-0.2 billion in 1955 to \$-4.1 billion in 1957 appears to be due basically to shifts in the composition of financial saving stemming from changes in yield relationships. Total personal saving and net additions to savings accounts both increased from 1955 to 1957, although gross financial saving declined. Consumer purchases of durable goods increased from 1955 to 1957, but the rise was moderate.

During this period of tightening capital market conditions, yields on alternative investments rose sharply in relation to savings bond yields. Average effective rates of return paid by savings and loan associations rose above yields at maturity of new issues of E and H bonds in 1956, and remained above despite the increase in E- and H-bond yields, from 3.00 per cent to 3.25 per cent, in early 1957. Annual average yields on marketable long-term Treasury bonds exceeded E- and H-bond yields in 1956 and 1957 and exceeded the lower yield on J and K bonds throughout the three-year period.

In response to the reduced attractiveness of savings bond yields, individuals shifted from savings bonds to investment media whose yields were more responsive to the general rise in interest rates. The decline in net sales of savings bonds contrasted sharply with the in-

<sup>12</sup> See "Consumer Expectations as to Economic Trends and Consumer Investment Preferences," *Federal Reserve Bulletin*, July 1952, pp. 742-749, and "Income, Selected Investments, and Short-term Debt of Consumers," *Federal Reserve Bulletin*, September 1952, pp. 982-985. NBER estimates of financial saving by nonfarm households indicate that net acquisitions of common and preferred stock increased from 1950 to 1952 (Table A-3).

creases in other savings media, particularly net additions to savings deposits in commercial banks and net purchases of certain types of marketable investments (Table A-3).<sup>13</sup>

In preceding periods of declining net sales, unmatured savings bonds were held relatively firmly. In contrast, redemptions of unmatured bonds rose sharply during 1955-57 (Table 12). This increase stemmed from the sharp rise in yields on alternative investments, which made switching from existing savings bonds into other forms of investment more profitable than during earlier periods.

As in the Korean War period, the decline in net sales was concentrated in F, G, J, and K bonds and in large-denomination E and H bonds, while small-denomination E bonds were largely unaffected. At the end of April 1957, the sale of J and K bonds was discontinued, after purchases of these bonds had dropped to the vanishing point. Sales of E and H bonds generally, and large denominations particularly, were bolstered by changes in ownership provisions (Table A-1), which tended to broaden the demand for these securities. Despite these changes, however, net sales of E and H bonds in denominations of \$200 or more dropped by about \$1.5 billion from 1955 to 1957. In contrast, net sales of \$10 to \$100-denomination E bonds increased between 1955 and 1956 (reaching a postwar peak), and declined only slightly in 1957, reflecting the approximately unchanged level of participation in the payroll savings plan of about 8 million between mid-1954 and mid-1957.<sup>14</sup>

Net sales of savings bonds declined once again in 1959 under the influence of tightening capital markets, following the rise during the 1958 period of recession and financial ease. Despite the increase in E- and H-bond yields, the competitive position of these bonds worsened as yields on marketable securities soared to postwar peaks. Individuals sharply increased their purchases of marketable securities, while they reduced additions to holdings of savings accounts and savings bonds. This shift in individuals' investment activity was dramatized by widespread purchases of 5 per cent marketable Treasury notes ("magic

<sup>13</sup> The sharp increase in net additions to savings accounts between 1955 and 1957 was concentrated in commercial banks, and reflected the sharp rise in rates of interest on commercial bank time and savings deposits in 1957 following the increase (effective January 1, 1957) in the maximum rates these banks were permitted to pay on such deposits.

<sup>14</sup> *Annual Report, Treasury*, various issues.

fives”), accompanied by reduced accumulation of liquid assets.<sup>15</sup>

Increased consumer spending for durables possibly also contributed to rising redemptions. Total personal saving decreased, but financial saving increased; this suggests that changes in savings bond behavior were related mainly to shifts in the allocation of saving rather than to changes in total saving.<sup>16</sup>

As in the preceding period of tight money in 1956-57, the decline in net sales was due mainly to increased redemptions. In contrast to the earlier period, however, the rise in redemptions was concentrated in matured rather than unmatured bonds. Considering the magnitude of the rise in market interest rates, redemptions of unmatured bonds probably would have been substantially greater had the Treasury not taken the step of increasing yields on outstanding E and H bonds as well as on new issues. As in all postwar periods of declining net sales after 1946, large-denomination E and H bonds and F, G, J, and K bonds (which were no longer available for purchase) were more severely affected than small-denomination E bonds. Redemptions of F and G bonds reflected a substantial amount of exchanges for marketable securities.<sup>17</sup>

The course of sales and redemptions was reversed again in 1960. Sales of E and H bonds increased and redemptions declined, reflecting

<sup>15</sup> The offering of 5 per cent four-year ten-month notes in October 1959 was one of the few instances in recent years of substantial purchases by individuals of an offering of marketable Treasury securities. Allotments to individuals (including partnerships and personal trust accounts) of the “magic fives” amounted to \$778 million of the total \$2,316 million issued. Monthly data from the Federal Home Loan Bank Board and National Association of Mutual Savings Banks indicate that savings inflow into savings and loan associations and mutual savings banks was substantially lower in October 1959 than in the corresponding period of the preceding year. Net sales of E and H bonds showed a similar drop.

<sup>16</sup> Flow-of-funds data compiled by the Federal Reserve indicate that from 1958 to 1959 consumers (including personal trust accounts and nonprofit institutions) sharply increased their net purchases of marketable securities, mainly Treasury obligations, while they reduced their new savings in time and savings deposits in banks. Accumulation of savings and loan shares continued to increase in 1959, but the rise was much smaller in dollar terms than the fall in additions to bank deposits. Gross financial saving (corresponding in general terms to the Federal Reserve’s “net acquisition of financial assets”) was higher in 1959 than in 1958. (See *Federal Reserve Bulletin*, August 1961, p. 987.)

<sup>17</sup> For amounts and issues involved, see note to Table A-4.

an improved competitive position owing to the decline in capital market yields relative to yields on E and H bonds which had been increased a year earlier. Redemptions of F, G, J, and K bonds also declined. These changes in savings bond flows were accompanied by increased accumulation by individuals of other types of liquid assets and reduced purchases of marketable securities.

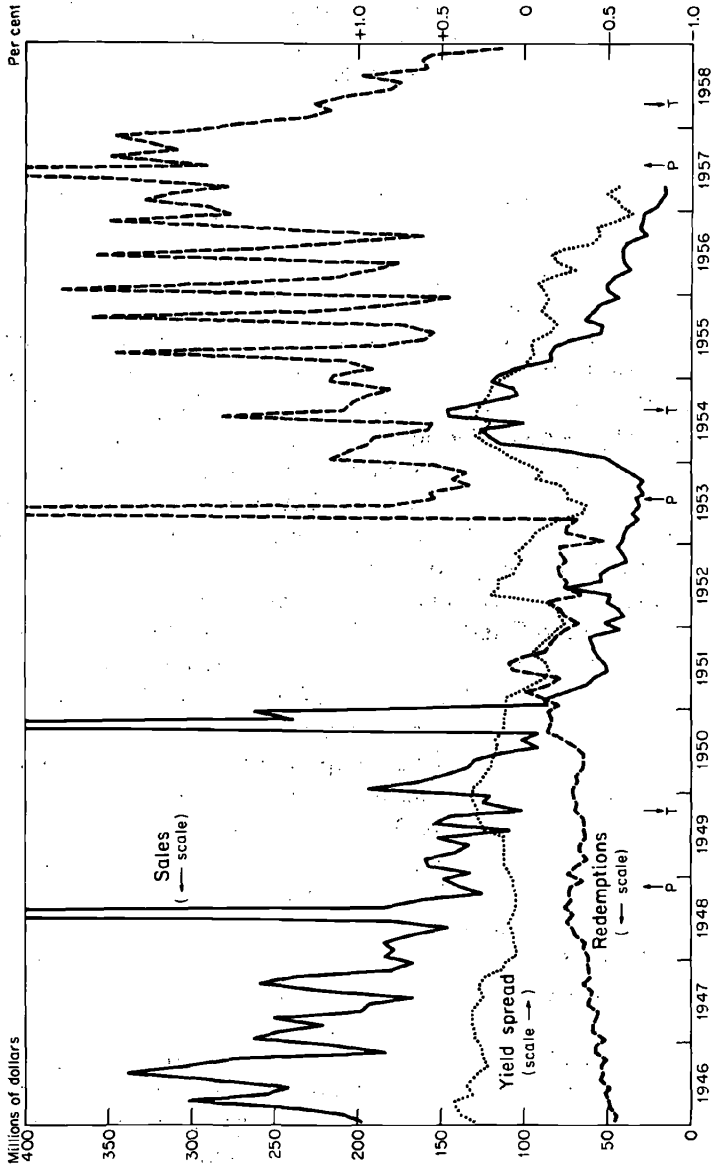
### *Role of Yield Relationships*

As indicated in the preceding section, the relative attractiveness of yields on savings bonds has played an important role in determining the course of savings bond flows. Yield relationships are important also because they are subject, in some degree, to control by the Treasury. To the extent that the market in which the program competes is imperfectly competitive and the program's competitors do not respond immediately to changes in savings bond yields with adjustments of their own, the Treasury may widen or narrow the gap between savings bond yields and rates on alternative investments. At the same time, it is clear from the postwar record that factors other than interest rate relationships exert important influences on savings bond flows.

In Charts 7 and 8, the relative position of rates of return on savings bonds and capital market investments is measured by the excess of yields at maturity of new issues of savings bonds over the average yield of marketable long-term United States government securities. This comparison involves the assumption that investors consider mainly the yield at maturity in choosing between savings bonds and alternative marketable investments. While the much lower yields earned prior to maturity undoubtedly are an important consideration in the choice between savings bonds and alternative investments, investors probably give the yield at maturity heavier weight. The yield at maturity is emphasized in Treasury advertising, and some savers probably do not know precisely what rates of return they will realize in the event that they fail to hold their bonds until maturity. Moreover, in view of interest penalties and other features that discourage liquidation prior to maturity, many investors appear to regard savings bonds as long-term investments. This is suggested by the relatively long average "life" of E bonds. In any case, to attempt to take into account the many rates of interest realized at various points during the period to maturity would greatly complicate the analysis without necessarily adding appreciably to its precision.

# CHART 7

## Sales and Redemptions of F, G, J, and K Bonds Compared with Spread Between Yields at Maturity and Yields on Marketable Long-Term U.S. Government Bonds. Monthly, 1946-58



#### NOTE TO CHART 7

Data are monthly sales and redemptions, in terms of sales price, from *Annual Report*, Treasury, and *Treasury Bulletin*, adjusted for seasonal variation by NBER. Peaks in sales in June 1948 and fourth-quarter 1950 reflect purchases by institutional investors of special offerings. Sales of new J and K bonds were terminated as of the end of April 1957. Peaks in redemptions during 1953-58 mainly reflect maturities of F and G bonds.

Spread is excess of yields at maturity on new issues of G and K bonds (F- and G-bond rates are closely similar, J- and K-bond rates are identical) over Federal Reserve figures for yields on marketable United States government bonds maturing or callable after fifteen years, January 1946 to March 1952; after twelve years, April 1952 to March 1953; and after ten years, April 1953 and thereafter. (See also notes to Charts 2, 4, and 6.) P and T indicate peaks and troughs of NBER reference cycles.

Additional qualifications are in order with respect to redemptions. The most relevant yield is not the yield at maturity shown in the table but the prospective yield on the outstanding bond to be realized for the remainder of the holding period. Here again, many different rates of return are involved, depending on the length of the holding period, which cannot be taken readily into account.<sup>18</sup>

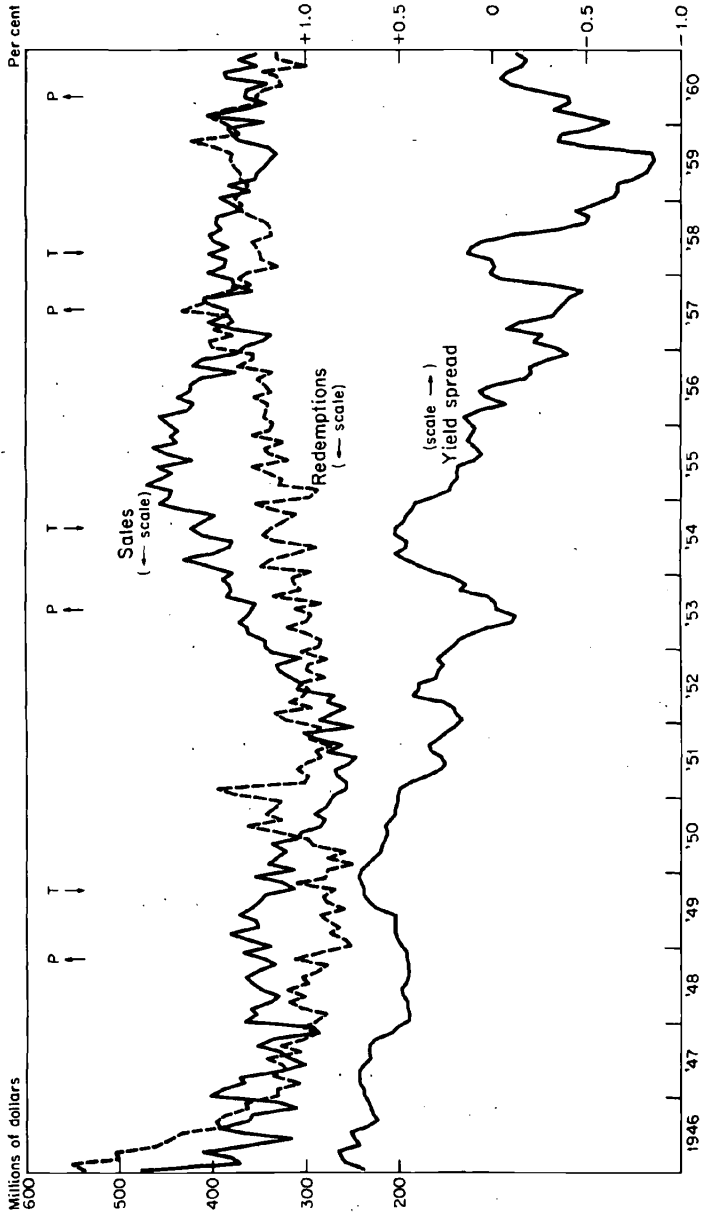
During the early postwar years, changes in the spread between yields of savings bonds and marketable bonds appear to have had little effect on monthly seasonally adjusted sales and redemptions of E, F, and G bonds.<sup>19</sup> The yield spread was fairly stable, due to the maintenance of savings bond yields at constant levels and to rigid support of prices of marketable Treasury security prices. At all times, yields at maturity of all series exceeded long-term marketable bond yields. The pattern of E-bond flows was dominated by the sharp decline in sales and the rise in redemptions at the end of World War II. The subsequent rise in sales and fall in redemptions reflects the reassertion of the relative attractiveness of savings bonds during this period of low interest rates.

<sup>18</sup> It should be noted, further, that data on marketable bonds used in this comparison are for bonds whose terms to maturity are not uniform throughout the period covered, and, in any event, differ from both the nominal maturities of savings bonds and their average retention periods.

<sup>19</sup> As a result of procedures adopted June 1954 by the Treasury for processing redeemed bonds, the relationship between the issue price and accrued interest portions of the value of redeemed bonds is obscured. (See, for example, *Treasury Bulletin*, July 1959, Table 4, N.5, p. 44.) Revised monthly figures, based on changed methods of distributing redemptions between sales price and accrued interest were available for 1960 and 1961, but not for earlier years, as this study went to press.

### CHART 8

## Sales and Redemptions of E and H Bonds Compared with Spread Between Yields at Maturity and Yields on Marketable Long-Term U.S. Government Bonds, Monthly, 1946-60



#### NOTE TO CHART 8

Data are monthly sales and redemptions, in terms of sales price, from *Annual Report*, Treasury, and *Treasury Bulletin*, adjusted for seasonal variation by NBER. Spread is excess of yields at maturity on new E and H bonds over marketable bond yields (see note to Chart 7). E- and H-bond yields are rates prescribed at time of offering and do not reflect revisions in yields on outstanding bonds made in 1959 or retroactive application of increases in yields in April 1957 and September 1959 to bonds sold February-March 1957 and June-August 1959. (See also notes to Charts 2, 4, and 6.) P and T indicate peaks and troughs of NBER reference cycles.

Sales of F and G bonds declined (except during special offerings in 1948 and 1950), despite the stable yield spread, possibly as a result of reduced demand for these bonds, as issues of corporate bonds and other higher-yield investments became more plentiful after the end of World War II. Redemptions of F and G bonds rose gradually, owing to the relatively stable rate of attrition of the growing outstanding amount of these securities.

As indicated earlier, the Federal Reserve-Treasury accord heralded basic changes in the level and stability of yield differentials and in the responsiveness of savings bond flows. Since the accord, the yield spread has been lower than during the early postwar period. It also has been more variable, as marketable bond yields fluctuated sharply above and below yields at maturity of savings bonds. Reflecting basic differences in behavior among the various series, the response of sales of E and H bonds differed markedly from that of F, G, J, and K bonds. Sales of F, G, J, and K bonds varied closely with changes in the spread between their yields at maturity and the rate of return on marketable Treasury bonds. Sales of E and H bonds were not strongly associated with changes in the yield spread until 1956-60, when marketable bond yields varied sharply above and below their yields at maturity. The weaker response of E and H bonds reflects the influence of general changes in the level of saving, the stabilizing effect of regular purchases through the payroll savings plan, and the strong preference for nonmarketable investments on the part of many individuals. It also reflects the fact that until 1956, E- and H-bond rates always exceeded marketable bond yields, with the result that they were more attractive than other series at the peaks of variations in market interest rates.

Variations in redemptions of F, G, J, and K bonds since 1953 reflect mainly the large amounts of maturities during that period. However, it is clear from annual data that redemptions of unmatured bonds also were affected by changes in yield relationships, increasing, as might be

expected, when marketable bond yields were relatively high, declining when marketable bond yields were relatively low (Table A-4). Annual redemptions of unmaturing E and H bonds also tended to move inversely to the yields spread, although they generally remained relatively stable.

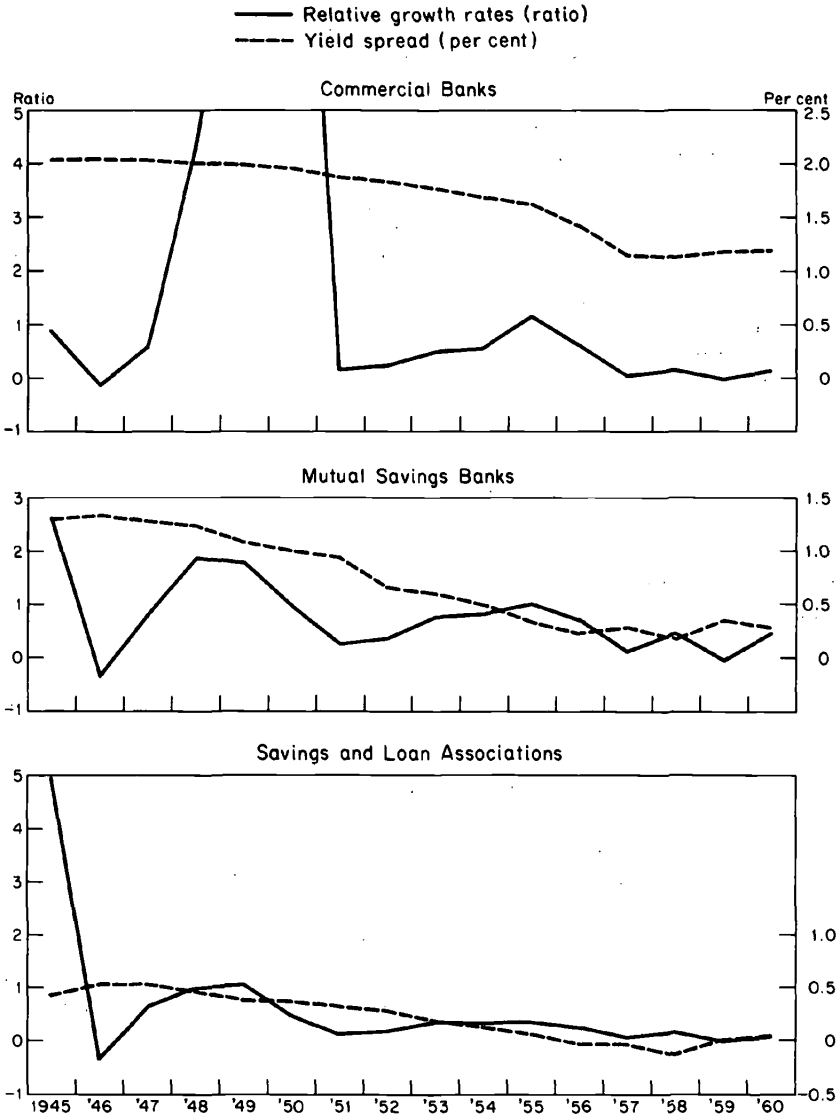
E- and H-bond yields must also be compared with rates of return paid by the main types of private financial institutions on savings deposits and share accounts, their closest competitors for individuals' savings.<sup>20</sup> During most of the postwar period, rates of return paid by the main types of private financial intermediaries on savings deposits and share accounts moved closer to the generally higher yields on savings bonds. The long-run effect of the resulting decline in yield spreads is evident when early postwar peaks in the ratio of the net increase in E and H bonds to net additions to savings accounts are compared with the much lower peaks of the 1950's (Chart 9).

While the relative position of yields on E and H bonds and rates of return on savings accounts is of basic importance, it is evident that other factors also significantly influence the relative rate of growth of E- and H-bond holdings in the short run. The importance of factors other than the yield spread is indicated by the contrast between the gradual decline in the yield advantage of E and H bonds and jagged fluctuations in their relative growth. The unique problem of adjustment to peacetime conditions of the savings bond program and the subsequent revival of E and H bonds during the early postwar period were indicated earlier. The sharp declines in the relative growth of E bonds from during 1950-51, 1956-57, and 1959 seem to indicate reduced demand on the part of sophisticated individuals for savings bonds relative to savings accounts during periods of rapid economic expansion and rising interest rates. To express this conclusion differently, E and H bonds appear to have been more vulnerable to rapid rises in yields on marketable securities

<sup>20</sup> Again, qualifications are in order. Data on savings bond yields refer to rates realized at maturity, while figures for savings deposits and share accounts are average effective rates of return paid by these institutions. Commercial bank rates reflect the lower rates paid on time deposits other than savings deposits, which presumably are not close alternatives to E and H bonds from the viewpoint of individual investors. Moreover data on commercial bank time deposit flows include net changes in holdings of partnerships and corporations, which were barred from purchasing E and H bonds until 1958. Yield spreads are compared with net changes in holdings because data on gross deposits and withdrawals that are comparable to figures on sales and redemptions of savings bonds are not available for all types of financial institutions. Annual data are used because of the unavailability of figures on rates paid by intermediaries on a quarterly or semi-annual basis.

### CHART 9

**Relative Growth of E and H Bonds and Savings Accounts Compared with Spread Between Yields at Maturity and Effective Rates of Return Paid by Selected Types of Financial Institutions, 1945-60**



#### NOTE TO CHART 9

Relative growth rates are ratios of net changes in E and H bonds outstanding (including net accrued interest), derived from figures in *Treasury Bulletin*, to net changes in time and savings deposits (held by individuals, partnerships, and corporations) in commercial banks, savings deposits in mutual savings banks, and share accounts in savings and loan associations, computed from data compiled by the Federal Home Loan Bank Board. Negative values of these ratios do not accurately reflect differences in relative growth among the three types of institutions since the greater the savings gain at the institution (and the larger the denominator of the ratio) the smaller the absolute value of the ratio, but do reflect decreases in the relative growth of E and H bonds compared with preceding years.

Yield spread is excess of yields at maturity of new issues of E and H bonds over effective rates of return paid on savings accounts. E- and H-bond yields are rates prescribed at time of offering, or those applying retroactively to bonds sold during February-March 1957 and June-August 1959, following changes in rates on new issues in April 1957 and September 1959. They do not reflect revisions in yields on outstanding bonds made in 1959. E- and H-bond yields in 1952, 1957, and 1959, when rates were raised, are averages weighted by the number of months each rate applied. Rates on savings accounts are percentages of interest or dividend payments to average amount of deposits or share accounts held during year by insured commercial banks, member savings and loan associations of the Federal Home Loan Bank System, and all mutual savings banks, and are from Federal Deposit Insurance Corporation, Federal Home Loan Bank Board, and National Association of Mutual Savings Banks.

than have savings accounts. One possible factor was the expectation that rates on new issues of savings bonds would soon be raised, resulting in postponement of purchases. Moreover, some investors may have preferred to concentrate additions to liquid assets in savings accounts at such times because they could reasonably expect that yields on these accounts would be adjusted upward should capital market yields continue to rise. Barring an increase in yields on *outstanding* issues such as that occurring in 1959, a purchaser of an E or an H bond could look forward to receiving no more than the rate stipulated in the contract at the time the bond was purchased, regardless of the future course of yields on alternative investments. Thus the long-term savings bond contract may become less attractive to investors relative to flexible-yield savings accounts during periods of rising capital market yields, just as it may gain in attractiveness during periods of falling interest rates.

The influence of rapidly changing capital market yields on the relative growth of savings bonds and savings accounts is indicated also by the rise in the relative growth of E and H bonds during 1958 and 1960, when capital market yields declined.

Comparisons of yield differentials and the relative growth of savings bond holdings are helpful not only in analyzing the past record of savings bonds, but also in appraising Treasury policy with respect to savings bond rates. Despite the fact that E- and H-bond yields at maturity generally exceeded rates of return on savings accounts, holdings of these bonds increased at a modest pace in dollar terms during the postwar period, and annual additions actually declined relative to the accumulation of savings accounts. This suggests that many individuals tend to prefer savings accounts to E and H bonds at prevailing yields, probably because savings accounts are regarded as more suitable for liquidity purposes. It appears that yields at maturity of E and H bonds must be set at or near the top of the range of rates paid on savings accounts by the various types of private financial institutions, if holdings of these bonds are to continue to grow even at the relatively slow pace attained during the postwar period.

### *Savings Bonds During Postwar Business Cycles*

Postwar E- and H-bond flows have not shown a strong association with business cycle turning points during the postwar period. The absence of a systematic response to business cycles reflects in part the relative mildness of postwar cycles and the influence of unemployment insurance and other factors that dampen fluctuations in personal income and saving. E- and H-bond flows have also been relatively unresponsive to cyclical changes in capital market yields during much of the period covered by this paper.<sup>21</sup> Cyclical stability of E-bond sales has been fostered, furthermore, by regular purchases through payroll deductions and by the Treasury's policy of conducting promotional campaigns in both recession and prosperity.<sup>22</sup>

As indicated earlier, sales and redemptions of Series F and G bonds showed no clear cyclical tendency during the early postwar period. Since the Federal Reserve-Treasury accord, however, F-, G-, J-, and K-bond flows have varied with changes in the spread between yields at maturity and rates on marketable long-term Treasury bonds.

<sup>21</sup> To the extent that cyclical variations in gross financial saving are parallel to fluctuations in capital market yields, their effects on net sales of savings bonds tend to be offsetting. In a period of high interest rates, for example, increased gross saving might be accompanied by a shift from savings bonds to marketable securities.

<sup>22</sup> See *Annual Report*, Treasury, 1949, p. 181; 1954, p. 157; and 1958, p. 167, for accounts of intensified promotional efforts conducted during the 1948-49, 1953-54, and 1957-58 recessions.

## TURNOVER OF SAVINGS BOND HOLDINGS

Savings bonds are readily convertible into cash at the option of the holder at predetermined prices. The rate of turnover of savings bonds, however, has been lower than might be expected on the basis of their near-money characteristics. From 1941 to 1960, the average ratio of annual redemptions of E bonds to amounts outstanding was 0.13.<sup>23</sup> On the basis of this average rate of redemption, it may be estimated that E bonds have remained outstanding on the average for close to eight years. The turnover of E bonds has been substantially lower than that of savings deposits and shares (Table 14) and, of course, much lower than that of demand deposits.<sup>24</sup> Turnover of F and G bonds, the other series with which the Treasury has had extended experience, was even lower than that of E bonds until 1954 (Table 15).

The relatively low rate of turnover of E bonds stems partly from the low yields realized on savings bonds that are redeemed prior to maturity. The redemption-at-discount feature of G and K bonds and the tax deferral provision of discount bonds also tend to reduce the rate of turnover of savings bonds.

While interest "penalties" may retard investment shifts, they probably have little influence when consumers dissave for emergencies or for major expenditures on durable goods, or where the only alternative means of obtaining cash is borrowing. The prospective yield forgone through redemption prior to maturity generally is considerably below the cost of borrowing for most individuals.

Contrary to expectations held during World War II, the rate of redemptions of E bonds did not rise after the end of the war, despite the greatly increased inducement to liquidate savings bonds arising from the expanded supply of consumer goods following wartime shortages. Indeed, the rate of redemptions of E bonds was lower during most postwar years than during the late war years.

<sup>23</sup> Data on turnover are ratios of redemptions, including accrued interest on redeemed bonds, to averages of beginning- and end-of-year amounts outstanding. The 1941-60 ratio is an average of annual ratios weighted by amounts outstanding.

<sup>24</sup> In comparison with a ratio of redemptions to amounts outstanding of 0.13 for E bonds in 1960, rates of turnover of demand deposits, reported by the Federal Reserve, were 60.0 in New York City, 34.8 in 6 other centers, and 25.7 in 337 other reporting centers.

TABLE 14

## TURNOVER RATES OF SELECTED SAVING MEDIA, 1948-60

	Commercial Bank Time Deposits	Mutual Savings Bank Deposits	Savings and Loan Shares	E Bonds
1948	n.a.	.27	.26	.12
1949	.45	.25	.25	.10
1950	.48	.27	.29	.11
1951	.46	.27	.29	.12
1952	.46	.25	.27	.12
1953	.46	.25	.28	.12
1954	.46	.25	.27	.12
1955	.47	.27	.29	.12
1956	.49	.26	.30	.12
1957	.48	.26	.30	.14
1958	n.a.	.25	.28	.13
1959	n.a.	.28	.30	.14
1960	n.a.	.26	.29	.13

n.a.=Not available.

SOURCE: American Bankers Association, Federal Home Loan Bank Board, National Association of Mutual Savings Banks, and Table 15. Data on deposits and share accounts are ratios of withdrawals to average amounts outstanding. Figures for E bonds are ratios of redemptions, including accrued interest, to average amounts outstanding.

There is wide diversity in turnover rates among the various series of savings bonds, stemming partly from technical differences among the series and partly from differences in the financial behavior of the various types of investors. The turnover of E bonds generally has been higher than that of other series, but more stable. It was lower than the turnover of F and G bonds after 1954, however, as F- and G-bond redemptions rose sharply owing partly to maturities including exchanges for marketable securities. There was no similar bulge in redemptions of E bonds because of the success of the Treasury's efforts to persuade individuals to continue to hold their E bonds beyond the initial

**TABLE 15**

**RATIO OF REDEMPTIONS TO AMOUNTS OUTSTANDING,  
E, F, AND G BONDS, 1941-60**

	Series E	Series F	Series G
1941	.02	a	a
1942	.05	.01	.01
1943	.12	.03	.02
1944	.14	.04	.02
1945	.18	.04	.04
1946	.18	.07	.03
1947	.13	.07	.04
1948	.12	.07	.04
1949	.10	.06	.04
1950	.11	.06	.04
1951	.12	.07	.04
1952	.12	.05	.04
1953	.12	.09	.09
1954	.12	.14	.13
1955	.12	.17	.15
1956	.12	.29	.22
1957	.14	.40	.33
1958	.13	.26	.30
1959	.14	.48	.56
1960	.13	.44	.46

SOURCE: Computed from data in *Annual Report*, Treasury, and *Treasury Bulletin*. Data are ratios of redemptions, including accrued interest, on redeemed bonds to averages of beginning- and end-of-year amounts outstanding. Both matured and unmatured bonds are included. See notes to Table A-4. Data on F and G bonds for 1960 are estimated.

a Less than .005.

maturity.<sup>25</sup> E bonds also were less sensitive to the rise in interest rates between 1955 and 1957 and in 1959. These differences in turnover rates are paralleled by differences between H bonds, on the one hand, and J and K bonds, on the other (Table 16).

<sup>25</sup> Of the \$25.6 billion of E bonds coming due between May 1951, when the first E bonds matured, and June 1958, less than \$11 billion were turned in for cash; the balance of nearly \$15 billion was held for an extended period (see *Annual Report*, Treasury, 1958, p. 166).

**TABLE 16**

**RATIO OF REDEMPTIONS TO AMOUNTS OUTSTANDING,  
H, J, AND K BONDS, 1953-60**

	Series H	Series J	Series K
1953	.05	.03	.03
1954	.04	.03	.01
1955	.03	.07	.03
1956	.05	.10	.07
1957	.07	.16	.15
1958	.05	.08	.08
1959	.06	.15	.17
1960	.05	.16	.14

SOURCE: *Annual Report*, Treasury, and *Treasury Bulletin*. Data are ratios of redemptions, including accrued interest, on redeemed bonds to averages of beginning- and end-of-year outstandings. Data on J and K bonds for 1960 are estimated.

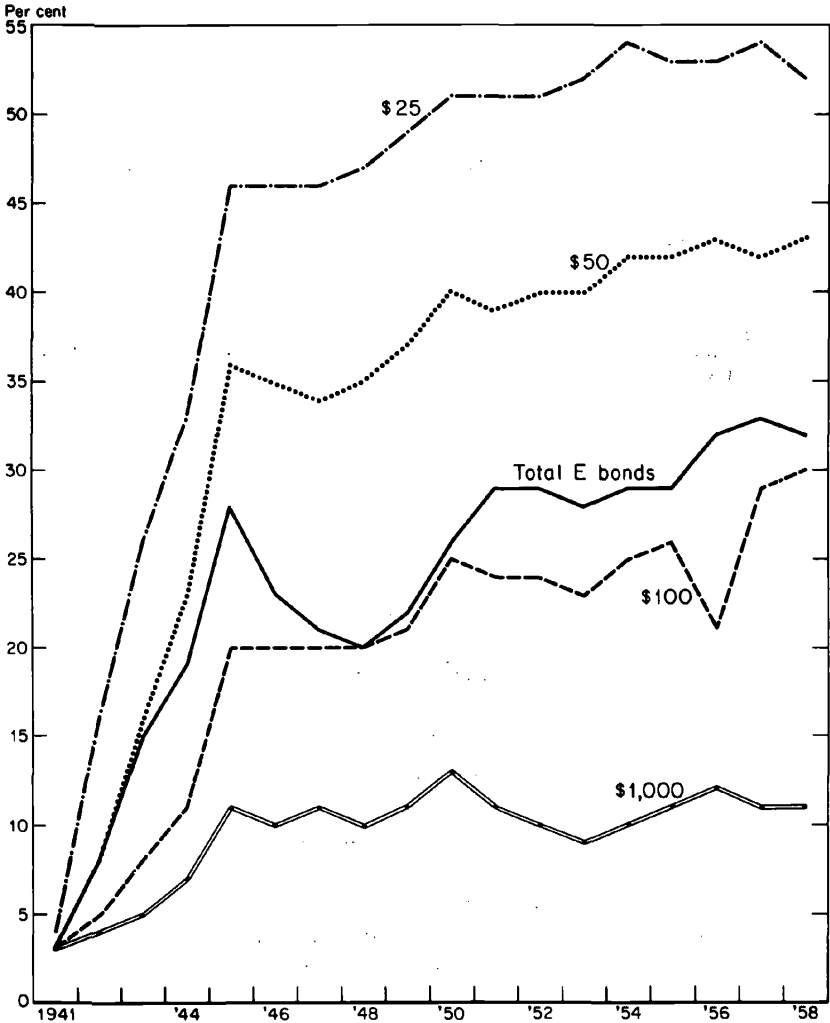
The generally higher, but more stable, rate of turnover of E bonds probably reflects the effects of consumer dissaving for emergencies and other types of expenditures that are not closely related to changes in business activity or capital market conditions. Individual holders of F and G bonds may not be prone to such dissaving or may make use of other types of assets. Their rate of redemptions seems to be governed mainly by changes in the attractiveness of shifts to other types of investments. The higher E-bond rate of redemptions is also attributable to the fact that E bonds may be liquidated without notice, while one month's written notice is required prior to redemption of all other series sold during the postwar period.

Diversity among the various series with respect to redemption behavior is indicated also by the fact that a much larger proportion of E bonds has been liquidated shortly after being purchased than F and G bonds. About one-fifth to one-third of E bonds issued each year from 1946 to 1958 was redeemed within one year, in contrast with only 2 to 6 per cent of F and G bonds.

Redemption behavior also varies among different holders and denominations of E bonds. While many investors have liquidated their E bonds within a year after the date of purchase, other investors have

### CHART 10

Percentage of E Bonds Redeemed Within One Year After Issue Date, by Selected Denominations, 1941-58



NOTE: Data are proportions of the value of bonds originally sold in indicated calendar years which were redeemed (including redemptions of bond reissued as a result of partial redemptions) before July 1 of the next calendar year. Sales and redemptions are taken at maturity values. Data are from *Annual Report*, Treasury, 1959.

held their bonds for much longer periods of time: \$17.5 billion, representing 47 per cent of the total redemption value of E bonds outstanding at mid-1960, had been outstanding for more than the original ten-year maturity period.<sup>26</sup> As Chart 10 shows, the rate of redemptions of E bonds within one year has been greater for \$25 E bonds than for higher denominations.<sup>27</sup> Similar, although less pronounced, differences in rates of early redemption exist among denominations in bonds of other series.<sup>28</sup>

<sup>26</sup> *Annual Report, Treasury, 1960, p. 39.*

<sup>27</sup> One possible reason why small-denomination bonds are cashed in more frequently may be that some investors desire to avoid partial redemption of higher-denomination bonds, or may be ignorant of the fact that partial redemption of larger denominations is permitted. An individual holding various denominations, therefore, may prefer to redeem the smaller ones.

<sup>28</sup> *Annual Report, Treasury, 1958, pp. 32, 556-562.*