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Introduction and Summary

For a quarter of a century, the United States savings bond program has been an important instrument of federal debt management. To describe its particular role and significance, however, it is appropriate to cite analogies in an area as distinct and far removed from federal debt management as the policies and practices of the nation's private savings institutions. With respect to the marshaling of funds for the Treasury, the program follows the classic pattern established many years ago by these institutions. It seeks to attract the small savings of large numbers of individuals by offering a combination of financial incentives that emphasizes safety of principal, liquidity, and convenience to the unsophisticated investor. Savings bonds are also similar to savings accounts at private financial institutions in that they are continuously available for purchase by investors and their yields are relatively inflexible. Moreover, the program utilizes the far-flung offices of the savings institutions to sell and redeem savings bonds and relies heavily on their support. Indeed, from the standpoint of investors it may be said—always bearing in mind, however, that savings bonds are direct obligations of the United States government—that these bonds are more similar in some essential respects to the obligations of savings institutions than to other types of Treasury securities.

It is because of the distinctive features of the savings bond program that within the scope of an occasional paper it has been accorded separate treatment in the National Bureau's capital market study. The demand for marketable Treasury securities will be analyzed in a volume by Morris Mendelson, to which this paper is a companion study.

This paper is not concerned, except incidentally, with the origins of the savings bond program or with its operations during World War II, when it achieved the peak in its quantitative importance as a medium for personal saving and Treasury borrowing. Still less is it concerned

with the broader problems of war economics, although, in the final analysis, no meaningful appraisal of the means used to finance federal expenditures during World War II can fail to take into account the behavior in later years of holders of savings bonds and other liquid assets accumulated in wartime. Rather, this paper deals with the period from the end of World War II to 1960 which witnessed radical departures from the economic and financial conditions under which the program operated during its earlier history. The transition from war to peacetime economic conditions, increased competition for individuals' savings, the revival of orthodox monetary policies, and the increased variability and rising level of market interest rates during the 1950's were environmental changes that had a profound impact on the savings bond program. The need to adapt to these changes is the central, continuing problem confronting the savings bond program today.

Objectives and Techniques of the Savings Bond Program

The principal objectives of the savings bond program as stated in official Treasury statements have been to stimulate saving, promote widespread holdings of United States government obligations among individuals, and limit the amount of "residual" borrowing from the commercial banking system. These objectives have been pursued by the savings bond program under widely varying economic conditions and throughout the business cycle. In recent years, however, the program has succeeded only in the more limited accomplishment of maintaining the total amount of savings bonds outstanding at about the high level reached at the end of World War II, rather than in exerting a major impact on the distribution of ownership of the federal debt. Nevertheless, the Treasury continues to seek and has attained positive, if modest, growth in the outstanding amount of E and H bonds, the largest element in the savings bond debt and the only series on sale since 1957.

Three main factors distinguish savings bonds from other types of securities sold in large amounts by the Treasury during the postwar period. First, they are designed primarily for individuals rather than for financial institutions, corporations, or other large investors. The program provides the Treasury with direct access to individuals' savings. It bypasses private financial intermediaries and competes with them as well as with other final borrowers for funds held by individuals.

Second, to a somewhat greater degree than is true of other Treasury securities, sales, redemptions, and amounts outstanding of savings bonds depend, in the short run, on the initiative of the public and are, in practice, independent of close control by the Treasury. The flow of funds to and from the savings bond program may fluctuate in ways that are contrary to current over-all debt management objectives, partly because savings bonds may be liquidated at the option of the owner at prearranged values. Variations in the flow also reflect the practice followed by the Treasury of making savings bonds continuously available for purchase by investors and holding their yields fixed for extended periods of time in the face of changing rates of return on alternative investments.

Third, savings bonds are the principal type of nonmarketable security sold by the Treasury to the public. The choice of a nonmarketable security as the primary means of attracting funds from individuals was motivated largely by a desire to protect unsophisticated individual investors from the effects of market value depreciation, and the apparent preference of many individuals for investments free of market risk.

Numerous alternatives to savings bonds have been suggested, mainly in order to substitute less liquid securities as means of attracting savings. Purchasing-power bonds have also been proposed, on the ground that the government should properly provide the unsophisticated investor with protection against inflation, which has markedly reduced the purchasing power of holdings of savings bonds and other liquid assets during the postwar period.

The various series of savings bonds are similar in basic design, but vary in some important details. Differences among the various series partly reflect the Treasury's intention to segregate groups of investors in order to offer higher yields to individual than to nonindividual investors. They also reflect efforts to tailor the terms of various series to investors' preferences.

In keeping with the importance attached to its basic objectives, the program originally offered yields at maturity on E bonds well above those prevailing on marketable long-term Treasury bonds and those offered by major types of private financial intermediaries. However, yields available on savings accounts rose substantially during the postwar period, and market interest rates also increased during the 1950's. Consequently, although they were increased in 1952, 1957, and 1959, yields at maturity of savings bonds lost the premium status they once held. The fact that the savings bond yields were not raised more rapidly along with other interest rates reflects, in part, the influence of statutory restrictions and reduced reliance on nonmarketable securities

in debt management policy during the 1950's, particularly as regards sales of such securities to large investors. It indicates, moreover, the difficulty of adjusting the program to the regime of widely fluctuating interest rates that emerged in the 1950's.

Throughout most of the program's history, yields on savings bonds held for short periods of time have been low in comparison with other interest rates, making these bonds relatively unattractive to investors as a medium for short-term investment and inexpensive in terms of interest cost as a means of short-term Treasury borrowing. The relatively low yields on savings bonds that are liquidated prior to maturity, as well as other features, are designed to reduce redemptions prior to maturity. However, interest "penalties" involved in early redemptions probably are not effective in retarding redemptions for emergency purposes or where the alternative is consumer borrowing. Such features also detract from the competitive position of new issues of savings bonds.

The program incurs substantial noninterest costs, which are borne partly by private groups, including major competitors for individuals' savings.

Pattern of Savings Bond Holdings

Reflecting the basic objectives of the program, savings bonds are held primarily by individuals. Owing to restrictions imposed by the Treasury and a greater willingness to assume market risks, financial institutions hold relatively small amounts.

Survey data gathered by the Survey Research Center of the University of Michigan indicate that savings bonds were held by a large proportion (30 per cent) of spending units in 1960. They represent a significant share of individuals' financial asset holdings. The frequency of ownership of savings bonds among spending units, however, is lower than that of savings accounts and life insurance and has declined markedly since the end of World War II. Furthermore, savings bonds are held by a lower proportion of spending units and in smaller average amounts than savings accounts in most financial asset, income, age, and occupation groups.

Given this over-all difference in extent of ownership, however, savings bonds appear to be distributed among spending units in a manner similar to that of savings accounts. In contrast to corporate stocks, which are held mainly by spending units in upper income and upper financial asset classes, both types of assets are held by large proportions of spending units in widely different economic situations.

The various series of savings bonds are held partly by different types of investors. Series E and H bonds are held mainly by individuals, while a fairly large proportion of F, G, J, and K bonds appear to be held by trust funds, financial institutions, state and local governments, nonprofit institutions, and other relatively large investors.

Postwar Behavior of Savings Bond Holders

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 quantitative importance of savings bonds in individuals' financial savings. The $48 billion of savings bonds outstanding at the end of 1960 was slightly lower than the total at the end of World War II, despite $7.3 billion of net accrued interest, owing to an excess of redemptions over sales. In contrast, the amount of savings bonds outstanding increased by $45 billion during World War II. The decline since World War II reflected the general reduction in personal saving in the early postwar years, and a massive shift in the composition of saving in favor of other media, resulting from basic economic and financial changes. The disappearance or weakening of temporary wartime stimulants, increased competition from private financial intermediaries, changes in savers' attitudes toward these intermediaries, and the diminished relative attractiveness of savings bond yields during much of the 1950's were important underlying factors. Also important were the large amount of maturities since 1953 and the discontinuation in 1957 of sales of new bonds of Series J and K.

The postwar period also witnessed sharp short-period fluctuations in savings bond flows. Net sales (sales less redemptions, measured in terms of sales price and excluding accrued interest) were positive during the 1946-50 period. In each of the subsequent ten years, however, total net sales were negative, as redemptions including maturities exceeded sales. The turning point was marked by the outbreak of the Korean War in the summer of 1950 and by the Federal Reserve–Treasury accord in March 1951. After the accord, the relative attractiveness of fixed-yield savings bonds declined markedly, particularly for sophisticated investors, in the face of increases in rates of return on competitive investments. The rise in maturities and discontinuation of certain series also contributed to the decline in net sales.

Net sales declined between 1945 and 1946, mainly because of the general drop in saving and the withdrawal of millions of persons from the payroll savings plan. They declined again between 1949 and 1951,

in response to the consumer buying spree that followed the outbreak of the Korean War and to subsequent capital market changes. Other substantial declines in net sales occurred during periods of capital market stringency in 1956-57 and 1959, as investors shifted from savings bonds to investments whose yields were more responsive to general rises in market interest rates. During most intervening years and in 1960, net sales rose, but not sufficiently to offset these declines.

In analyzing the behavior of savings bond flows, a basic distinction must be drawn between E and H bonds and other series. Net sales of E and H bonds, which were available exclusively to natural persons during most of the period covered by this paper, have been strongly influenced by major changes in the general level of saving. They also have been influenced by shifts in the composition of saving in response to changes in yield relationships, particularly in 1956-60, when yields on marketable securities fluctuated above and below E- and H-bond yields. The slower growth of E- and H-bond holdings relative to holdings of savings accounts occurred even though their yields at maturity for the most part exceeded effective rates of return paid by intermediaries. This suggests that to achieve even the comparatively slow rate of growth of E- and H-bond holdings experienced during the postwar period, the Treasury must offer rates of return as high as or higher than yields offered by the various types of private intermediaries, probably because investors may regard these bonds as less liquid than savings accounts.

F, G, J, and K bonds have been influenced mainly by general capital market changes, rather than by variations in over-all personal saving. After the Federal Reserve–Treasury accord, sales of these bonds rose during periods of capital market ease, when their fixed yields were attractive relative to variable capital market yields, and declined during periods of financial stringency, when the relative attractiveness of their yields decreased. F, G, J, and K bonds responded more sensitively than E- and H-bond flows to variations in the relationship between their yields at maturity and marketable bond yields, reflecting the greater willingness of investors in these bonds to purchase marketable securities and the greater vulnerability of their lower yields to rises in market interest rates.

Further diversity of behavior exists between small- and large-denomination E bonds. Except at the immediate end of the war, net sales of small-denomination E bonds have been relatively stable, partly because of regular purchases through payroll deductions.

When net sales data are broken down into their underlying gross flows, it is evident that variations both in sales of new bonds and in

redemptions of old ones have been major causes of changes in net flows. The inability of the Treasury to maintain the attractiveness of new issues relative to other investments, as well as the ability of holders to liquidate their bonds without loss, have been major factors of instability.

Annual E-bond redemptions have averaged 13 per cent of amounts outstanding, considerably lower than rates of withdrawals from savings accounts, partly owing to interest "penalties" incurred by investors in liquidating bonds prior to maturity. The rate of redemption of E bonds has been fairly stable and has shown little tendency to rise above levels attained in the late World War II years, despite greatly increased incentives for liquidation.

Role of Savings Bonds in Postwar Saving and Federal Debt Management

In the pattern of individuals' saving, E bonds perform a role similar to that of savings accounts, in that they represent a safe, standardized investment easily available at a large number of sales outlets and may be readily converted into cash without risk of loss. Although individuals differentiate between savings bonds and savings accounts to some extent, they are both suitable for unsophisticated investors who seek investments free of market and credit risks. As is true of other fixed-value obligations, savings bonds have suffered losses in purchasing power as a result of postwar inflation.

The $6.3 billion rise in savings bond holdings of nonfarm households during the 1946-50 period, which represented 8 per cent of gross financial saving and 27 per cent of the total gain in their combined holdings of savings accounts and bonds, probably diverted to the Treasury funds that would have been saved through other media, except to the extent that the program may have stimulated total saving. While the incidence of the diversion of the flow of funds effected through the program during this period is difficult to ascertain, it probably was borne partly by competing private financial intermediaries and thus tended to reduce total capital market investment of these intermediaries.

During the 1950's, by contrast, the program experienced an outflow, as redemptions exceeded sales, which, in most years of the period, augmented the flow of funds into intermediaries and other nonfederal investment media.

In addition to consideration of the impact of postwar savings bond flows, "stock" effects of wartime accumulations of savings bonds and other liquid assets should be taken into account. Large holdings of

savings bonds built up during wartime may have stimulated the postwar propensity to consume, more so than accumulations of less liquid securities, but the magnitude of this difference in impact is difficult to estimate. Liquidations of savings bonds may also have financed postwar dissaving, but, on balance, redemptions have been offset by sales and net accrued interest. During 1946 and during the Korean War, however, consumer dissaving financed by E-bond liquidation contributed to some degree to the upsurge in spending and militated against the effectiveness of consumer credit controls.

In Treasury debt management, savings bonds, as the principal means used to attract funds from individuals, occupy a unique position. Direct borrowing from individuals has enabled the Treasury to tap the flow of funds at a point where investors' preferences and demand conditions may be relatively favorable for the Treasury. Savings bonds account for the bulk of nonmarketable Treasury debt held by private investors, and represent the principal departure from the policy in effect during the 1950's of placing primary reliance on marketable securities in debt management. The continued use of savings bonds, in contrast to the termination in recent years of the sale of other types of nonmarketable securities to private investors, reflects partly the practical problem of offsetting the stream of redemptions as well as the basic objective of broadening the distribution of securities among individuals.

In view of many investors' preference for investments free of risk, redeemable, nonmarketable savings bonds represent a less expensive means than marketable securities of attracting savings from large numbers of individuals.

Moreover, E bonds have remained outstanding, on the average, for nearly eight years, and thus have some of the characteristics of intermediate- and long-term securities. Nevertheless, the flow of funds into and out of the program has varied considerably. Net redemptions of savings bonds during periods of capital market stringency may compel the Treasury to increase market offerings at a time when it would be desirable to refrain from doing so because of rising interest rates on marketable securities and in order to assure that the Federal Reserve will be free to take restrictive monetary policy actions. However, net redemptions of savings bonds were moderate in magnitude in most years and have not posed the serious problem that might have been expected.

During the early postwar years, the sale of savings bonds provided funds for the retirement of marketable securities. Since the securities retired were necessarily short-dated, while a large proportion of the savings bonds sold at the time remained outstanding for several years, the program was engaged essentially in a funding operation. The pro-

ceeds of savings bond sales, together with the much larger amounts derived from reduction of Treasury balances and other sources, were used, in part, to reduce the amount of Treasury securities held by the commercial banking system.

During each year of the period 1951-60 by contrast, net redemptions of savings bonds exerted a cash drain on the Treasury, but the magnitude of this drain was relatively small until 1956-60. The peak outflow occurred in 1957, when net redemptions, together with other pressures on the Treasury's cash position, forced it to increase its cash offerings of marketables in the face of sharply rising market interest rates. The cash outflow rose sharply again in 1959, but in this year the pronounced increase in individuals' purchases of marketable Treasury securities suggests that investors, in effect, merely exchanged savings bonds for higher-yield marketable Treasury securities.

Notwithstanding net redemptions during the 1950's, savings bonds continued to be a major element in the structure of the federal debt. At the end of 1960, savings bonds represented 16 per cent of the total amount of United States government securities outstanding, 23 per cent of the amount held by all nonfederal investors, 33 per cent of the holdings of noncommercial-bank investors, and 68 per cent of the amount held by individuals—about the same proportions as at the end of World War II. Over the span of the fifteen-year period since the end of World War II, savings bond holdings of individuals increased slightly. The demonstrated willingness of individuals to maintain and increase their holdings during the postwar period contrasted sharply with the pronounced reduction in Treasury security portfolios of major types of institutional and corporate investors. The contrasting behavior of individuals and institutional investors appears to reflect, in part, differences in investment preferences and the willingness of the Treasury to offer relatively generous yields on savings bonds during the early years of the program.

While continuing to be an important element in the federal debt structure, the savings bond program as a whole may also become in the future a more significant source of new funds for the Treasury, after the overhanging volume of outstanding bonds of discontinued series, already greatly reduced, shrinks further and is extinguished by redemptions and maturities. The ability of the savings bond program to channel funds to the Treasury will depend on how thoroughly it adapts its techniques for attracting new funds from individuals to the changing financial environment.