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The Effect of the Social Security Program on the Rate of Personal Saving

by Allen J. Whitlow

Does the institution of social security have an effect on the saving decisions of consumers? If it does, to what degree is aggregate saving increased or decreased? The dilemma of whether or not savings are affected by social security has received a great deal of attention over the years because aggregate saving is directly related to the level of capital invested, which in turn is responsible for economic growth (Aaron 1982, p. 51). Policy makers interested in stimulating the overall growth of the economy are likewise interested in the effects of their policy decisions on aggregate capital outlays. Therefore, a method of accurately measuring a change in consumer saving patterns would be a great asset when developing future policy.

Traditional Theories

There are two traditional schools of theory that predict a decrease and an increase in savings, respectively. The first holds that, as the amount paid into social security increases, the amount accumulated through private savings will decrease (Munnell 1974, p. 544). This theory is based on the assumption that individuals have some predetermined idea of how much they want to save in anticipation of financing their retirement years. As the amount paid into social security increases, individuals no longer see a need to save 100 percent of the money they feel is necessary to cover retirement consumption, since social security is, in effect, a form of compulsory retirement saving. This theory suggests that the amount of savings would decrease by an amount equal to the payments contributed to the social security program. The fact that their social security contribution is not saved by the government but paid out to beneficiaries may or may not affect their determination of the present value of social security benefits they themselves would receive upon retiring. The more skeptical recipients are of receiving future benefits, the more they will discount the value of those benefits, lessening the effect social security would have on savings decisions pertaining to retirement (Munnell 1977, p. 113). Individuals who conceive of social security as a form of saving and guaranteed future returns will tend to save less due entirely to the projected retirement benefits they will be entitled to at age 65. This influential factor has been dubbed "the benefit effect" by economists (Skidmore 1981, p. 62).

The other theoretical scenario goes something like this. The presence of social security has caused an increase in private saving because it has made people more aware of the need to plan for their retirement. As individuals take a more responsible approach to retirement, the majority will choose to increase the amount they save on their own in order to supplement adequately future social security benefits they will receive. Social security would also stimulate increased saving among those marginal individuals who, in the absence of social security, would not be able to afford retirement (Munnell 1977, p. 114). By increasing the amount they save on their own, and adding benefits received during retirement, these marginal individuals can now afford a retirement period that would otherwise be beyond their financial grasp.

Two other generally recognized factors, besides the benefit effect, which more than likely influence the degree to which social security affects private saving decisions are "the retirement effect" and "the bequest effect." The way the social security program is designed, few individuals choose to work past the age of 65. Prior to 1972, the earnings
test, applied to all earned income, cost the retiree one dollar for every dollar earned over $2,100. In 1972 the legislation governing the earnings test was revised. Since then a retiree is "taxed" fifty cents for every dollar earned. Although this change has reduced the earnings penalty by 50 percent, it still allows for a steep enough tax on earnings to effectively discourage retirees from working. So in reality, those people who would rather continue to work past 65 are coerced into retirement by the stringent earnings penalty.

According to the retirement effect, those individuals who are thus "forced" to retire would be spending more years without a source of working income than would otherwise be the case. Therefore, they will want to accumulate more funds to supplement consumption during the longer retirement period (Darby 1979, p. 14). Saving will have to take place over a shorter number of work years, requiring increased private savings throughout the work life of the individual. By increasing personal private saving, individuals are better prepared to smooth out the reduction in income encountered during retirement.

Social security may also influence parents' decisions concerning saving for bequests. If parents feel an obligation to their children's future welfare because their children will be footing the bill while they are collecting social security, the parents may choose to save more during their work years in order to provide a larger bequest for the children (Skidmore 1981, pp. 60-61). In this way, parents attempt to offset the future tax burden of their children by eventually providing them with a larger inheritance.

Early Empirical Studies

Two early studies relating to social security and saving were independently performed by George Katona and Phillip Cagan in the early 1960s. Both economists found that social security influences saving in a positive manner (Aaron 1982, p. 40). They reported that social security encourages private saving largely through the retirement effect. However, Katona's and Cagan's results were met with much skepticism among their peers. As social security continued to grow in relation to the total United States budget during the 1960s and 1970s, more economists took an interest in the effects the program was having on various aspects of the economy. Since that time, a number of studies have been published by highly respected economists.

These studies have led to general agreement among economists that social security has reduced saving, but there is general disagreement as to how much. Estimates have ranged from nearly 50 percent to practically none at all. One reason for such a wide variety of conclusions is that the calculations used are often complex and involve many variables and assumptions which are not readily verifiable or entirely applicable to all individuals (Munnell 1977, p. 153). Different economists may choose to delete or add variables they feel are more important which further muddles any attempt to reach consensus.

Another problem found in empirical studies of the influence of social security on saving is accurately determining the period of time individuals plan ahead. Do people look a few weeks ahead? A few months or years? Do they plan and develop a financial habit intended to span their lifetimes, or perhaps even longer to include future generations? Determining how far ahead people look when planning their financial futures is necessary to accurately value or discount expected future social security benefits. This value, called social security wealth (Aaron 1982, p. 11), is an important variable in calculating the effect social security has on saving.

Another important aspect sometimes overlooked is the effect of the program on private pension systems. That is to say, what types of financial retirement securities would have developed in the absence of social security? One possibility is a more developed private pension system. A fully-funded and vested pension service would essentially substitute business saving for personal saving (Skidmore
1981, p. 62). This would only affect the composition and not the total amount of saving; the net effect of social security on the rate of saving would be zero.

The most popular time frame used in many of the studies is the life cycle model, the general assumption being that individuals base their working, spending, and saving behavior on their lifetime anticipated earnings (Aaron 1982, p. 10). Individuals would thus choose to save or dissave accordingly at different points over their lifecycles. To simplify calculations, it is likewise assumed that individuals save only enough during their work years to finance their retirement and there are no intended bequests. This model implies that social security would decrease personal saving by reducing the amount an individual is required to save on his or her own in order to finance a planned retirement period. However, this method of analysis has some drawbacks.

A major assumption of the life cycle model is that retirement-age individuals reduce their asset holdings through consumption, yet numerous studies have indicated that this is not the case. Apparently the elderly do not necessarily reduce their asset holdings and, in many instances, even continue to add to them. The life cycle model also falls short of adequately explaining the saving habits of households by consistently overvaluing such key variables as social security wealth and the value of private pension plans (Aaron 1982, p. 49).

Feldstein’s Model

In 1974, Martin S. Feldstein published a report in which he claimed that the amount of personal savings had been cut in half due to the social security system. He further reported that this decline had, in turn, caused a 38 percent reduction in the amount of capital stock in the United States as compared to the estimated amount of saving that would have taken place in the absence of a social security program. His original study was based on an extended life cycle saving model using aggregate United States time-series data for the period of 1929 through 1971 with data for 1941 through 1946 excluded (Feldstein 1982, p. 632).

Social security’s effect on saving is embodied in the social security wealth variable. The net effect on saving is determined by the interaction of the benefit and retirement effects as described above. For purposes of calculation, Feldstein defines gross social security wealth as the discounted present value of expected future social security benefits taking into account the anticipated probability of receiving those benefits (Esposito 1978, p. 10). Net wealth is then defined as gross social security wealth minus the discounted present value of all social security taxes to be paid by the current work force.

Using 1971 figures, Feldstein calculated that social security taxes and contributions reduced disposable income by $51 billion. He further calculated that personal savings was reduced by $18 billion. Social security wealth for 1971 was $2,029 billion, giving way to a $43 billion reduction in saving. Adding these two reductions, personal saving fell a total of $61 billion in 1971. Total personal saving recorded in 1971 was only $61 billion, revealing an apparent 50 percent loss of potential saving due to social security.

Feldstein has noted that social security serves as a substitute for private retirement saving among low-and middle-income households, something he calls an asset-substitution effect. The coefficient of the social security wealth variable in Feldstein’s model reflects this asset-substitution effect and the influence social security has on decisions of individuals to retire earlier than they would like. These two forces which act on saving in different directions are no doubt going to change in magnitude as the social security program matures.

Since the social security system is a pay-as-you-go system instead of an accumulation system where funds earn a return, any decline in the rate of personal private saving is not replaced by a system of public saving. The 50 percent reduction in personal private saving
attributed to social security therefore results in an estimated 38 percent reduction in total private saving. In the long run, this would reduce the private capital stock by the same 38 percent. Feldstein has estimated that, besides reducing private capital stock, social security has caused a decline in the overall labor force of nearly 3 percent by inducing early retirement. The net effects of the reductions in capital and labor have been to increase the rate of profit and lower the wage rate (Feldstein 1974, p. 920).

Feldstein believes that the social security tax in and of itself is responsible for a reduction in total aggregate saving by reducing the amount of disposable income with which a working individual makes consumption expenditure and saving decisions. Therefore, he believes the saving level will decline because consumers would rather maintain their current consumption level and will do so at the expense of saving.

**Refutations of Feldstein's Results**

A number of economists have criticized this analogy, however, stating that in the aggregate the total amount of disposable income does not change. Since social security is a pay-as-you-go program, what is taken from the working population in the form of the social security tax is immediately paid out to retired individuals as benefits. In effect, social security serves as a transfer program whereby income is shifted from the working population to the retired. Although retired individuals tend to have a high consumption rate, the majority of social security funds are collected from working individuals who are also consuming at a high rate (Munnell 1977, p. 120). In essence, the transfer does not affect the aggregate level of saving to any substantial degree.

The apparent error in Feldstein’s calculation was first detected by Dean R. Leimer and Selig Lesnoy while employed by the Social Security Administration (Aaron 1982, p. 43). They discovered an error in the estimation of the social security wealth variable. Correcting this error does not alter the direction of social security’s effect on saving, but it does change the magnitude. The original implied reduction in total private personal saving was 50 percent. With the correction this value drops to 44 percent and the original estimated reduction in the private capital stock of 38 percent becomes 34 percent (Feldstein 1982, p. 634). Nevertheless, Feldstein’s conclusions as to how much saving is affected by social security remains significant even after adjusting the original calculation for the error. However, other economists continue to be critical of his evaluation as they have determined in their own independent studies that saving is affected by social security somewhat less than reported by Feldstein. Leimer and Lesnoy have pointed out that the choice of years used in any study of social security and saving may influence the results one way or another (Aaron 1982, p. 43). When the depression years of the 1930s or years of war are included, the results tend to be greatly distorted.

Louis Esposito of the Social Security Administration examined Feldstein’s work and concluded that the empirical results do not support the theory of a decrease in saving as a consequence of social security (1978, pp. 10-11). For the period 1946 through 1971, Esposito found that this is true whether or not an unemployment variable is used. (This variable was excluded without explanation from Feldstein’s initial theoretical model). For the period 1929 through 1971, the results do not support a decrease in saving unless the unemployment variable is omitted from the calculation. When it is deleted, the results imply a definite decrease in saving. However, other economists generally agree that there is no feasible justification for excluding the variable. Therefore, the fact that the equation can be construed to reveal an apparent decrease in saving over this period is irrelevant. Many economists even believe the unemployment factor should play a larger role in the analysis of social security’s effect on saving than is allowed in Feldstein’s calculations (Esposito 1978, p. 11).
Alicia H. Munnell, in a study on the effects of social security on saving, argues that the social security program really only affects savings made in anticipation of financing consumption during retirement (1974, p. 553). This would include decisions and purchases of insurance and pension plans. According to Munnell, social security has caused a two-sided effect on saving. This “dual impact” model calls for a decrease in personal private savings as social security replaces some savings intended for retirement, an approach very similar to the benefit effect discussed above. It would also call for an increase in saving as workers are discouraged from remaining in the labor force past the age of 65; therefore they increase their savings to cover a longer retirement period. The important feature of Munnell’s analysis is isolating the retirement savings from total savings in order to find the actual impact of social security on saving.

Munnell’s study, which is based on the life cycle saving model using time-series data for the period 1900 through 1971, used two different saving concepts: personal saving and retirement saving. For her purposes, retirement saving is defined as the net annual increase in life insurance company assets (net of policy loans), private pension plans, and government-sponsored insurance and pension plans (Esposito 1978, p. 12). Munnell also used two different values for the social security variable in her calculation, the first the combined contributions of employer and employee into the social security system, and the second a measure of social security wealth similar to that developed by Feldstein.

According to Munnell’s “dual impact” model, the benefit effect and the retirement effect have essentially cancelled each other out in the past, implying no effect on savings. She has even gone so far as to state that “most of the solid empirical evidence to date for the United States seems to indicate not only that social security has not decreased saving, but that it may even have served to stimulate it” (Munnell 1974, p. 554). However, she has cautioned that this is in the process of changing: “Considering the leveling off in labor force participation of the aged and the enormous benefit increases of the early 1970s, the net impact of social security on saving in the future will probably be negative” (Munnell 1977, p. 124). The argument here is that the increase in the number of retired individuals over the past decade and the forecast of future increases over the next few decades, coupled with the significant increases in the structure of benefits paid out as of 1972, will require working individuals in the future to contribute a much larger portion of their income in order to finance the program (Munnell 1974, p. 363). As the portion of personal income paid into social security becomes more substantial, saving as well as consumption expenditure decisions will need to be reevaluated accordingly.

Robert J. Barro did an analysis of social security’s effect on saving using the same basic data Feldstein used, except Barro used United States time-series data for 1929 through 1974 (Esposito 1978, p. 14). He also added a few variables of his own and redefined a couple of variables used by Feldstein. The results obtained from Barro’s study are very similar to those obtained by Feldstein, when the unemployment rate variable is excluded. The difference in their calculations is found in their use of the unemployment variable. Feldstein used a linear value representing the unemployment rate for the entire labor force. Barro takes this value one step further by adjusting it to reflect all persons employed during the depression era by government emergency programs as employed, not unemployed. Barro then uses this composite variable, arguing that it more closely represents the necessary relationship between the unemployment rate (relative to the normal rate) which is seen as a proportional measure of the change in income from its “normal” position. Barro agrees that there is no apparent reason to exclude the unemployment variable and thus concludes that his “general assessment of present empirical knowledge is that, either in terms of individual components of evidence or in terms of the overall picture, there is no support for the
proposition that social security depresses private saving. The effect of social security on saving and capital formation remains an open empirical issue.'

Conclusions

Economists have now generally concluded that time-series analysis of the effects of social security on saving is not a very effective analytical tool (Aaron 1982, pp. 44-45). It leads to a general quagmire of results, all of which can be supported or refuted. The data and variables used to develop accurate results as to the effect of the program on saving are complicated and very difficult to determine.

In 1980, the Social Security Administration sponsored a symposium on "Alternative Methods of Social Security Financing." As to how the effects of social security on saving could be analyzed using econometrics, the assembled group generally agreed that more detailed information, as well as more complex analytical techniques, would be required before any consensus could be reached. They also agreed that, regardless of the eventual outcome of analysis, the effect of social security on saving would not call for a change in social security policy solely on those grounds. If the observed level of saving is found to be insufficient, there are better and more direct ways of stimulating the rate of saving than by doing so through adjustments in the social security system. Peter Diamond also made the point that "the effect of a mature system on the saving rate is likely to be very different from the effect of a developing system (such as the United States system in the past) and, therefore, that analyzing data from the past would provide little guidance as to what can be expected in the future" (Skidmore 1981, p. 6).

After looking at studies by Feldstein, Munnell and Barro it is difficult, if not impossible, to draw any concrete conclusions as to how saving is actually affected by the presence of the social security system. Arguments highlighting the influences of the benefit, retirement and bequest effects have all based their results on verifiable economic data. Yet the various methods of manipulating that data in an attempt to isolate a social security-induced change in saving have led to very different answers. As George F. Breake states: "whether all of the interrelated effects have resulted in a significant decline in the rate of national saving, investment, and economic growth is a debatable issue, which empirical evidence has so far been unable to resolve" (Skidmore 1981, p. 74).

It is clear that more analytical techniques and better detailed information are necessary if economists are to progress further in their quest for the answer. Yet, the answer itself no longer appears to be as important as it once was. Economists have agreed that regardless of what they may ultimately find, the social security program should not be the monetary instrument used to bring about a change in aggregate saving behavior. For that, there are numerous alternative methods which would accomplish the desired change in a more appropriate and practical manner.

REFERENCES


