Psychology and Savings Policies

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Many observers of the current economic scene are concerned about the low rate of personal saving in the United States. One well-known researcher, Laurence Kotlikoff (1992), calls the situation a crisis. He proposes that each American worker receive an annual statement from the Social Security Administration with projected benefits upon retirement, arguing that: “If each of us got [this statement] our attention would be caught and perhaps our psychology of saving, which is in such urgent need of redress, would really change” (p. 107). I agree with the thrust of Kotlikoff’s recommendations, and join him in applauding steps that will alter the general public’s “psychology of saving.” However, as economists, we need to recognize that the economic theory of saving is similarly in urgent need of redress. If we are to understand why people are saving so little and are to make helpful recommendations as to how to get people to save more, we have to incorporate more of the psychology of saving into our economic theories.

Kotlikoff’s policy proposal, while a sensible one, highlights the growing gap between theory and policy prescription in this domain. If households are acting in accordance with the life-cycle theory of saving, then undersaving is impossible, so why do they need to have their “psychology” redressed? And, how does this “psychology” fit into the model? This example reflects an increasing frustration in the economics community about personal saving. Many observers have come to the conclusion that the low saving rate represents an important problem on two fronts: macroeconomists worry that the low saving rate will produce too little investment, and microeconomists worry that individuals, particularly the baby boomers, are not putting enough away to finance a satisfactory lifestyle in retirement. These are serious concerns. However, the frustration comes from the realization that, even if there was agreement that the saving rate needs to go up, economic theory offers little help in constructing a solution. In the standard life-cycle framework the only policy variable is the after-tax rate of return to saving. Yet it is well known that the theory does not specify the sign of the relationship between the saving rate and the interest rate. Raising the interest rate increases the returns to saving but decreases the amount of saving necessary to yield any given future consumption level. Furthermore, empirical estimates offer little help. Most studies are unable to reject the hypothesis that the elasticity of personal saving with respect to the interest rate is zero. Clearly this is frustrating: the theory only gives us one lever to use, and we don’t know whether to push or pull!

With this background, I wish to supply what should be considered good news: the theory is misspecified. Life-cycle models of saving fail to describe actual household saving in three important ways. This failure of the theory is good news because by incorporating some basic psychology we can enrich the theory and generate specific policy recommendations. In this paper I will begin by characterizing the problems with the theory and then go on to discussing the implications of modifying the theory.

I. Three Critiques of the Life-Cycle Theory

The first criticism of the life-cycle hypothesis comes from its dependence on an underlying optimizing framework. Life-cycle predictions are based on the presumption that households are solving a multiperiod dynamic maximization problem. How realistic is this assumption? While some
economists may argue that the optimization assumption is always a good one, a more moderate position is to admit that the approach is likely to work better in some circumstances than others. Three factors are important in judging whether an optimization model is likely to be a good characterization of behavior. First, how hard is the problem to solve? Actual behavior will be closer to the optimizing model, the easier the task. For most adults, the optimal solution would be a good descriptive model of their play in tic-tac-toe, but not in chess. Second, are there good opportunities for learning? Tasks done many times offer chances to learn from experience, and simply by repetition people may be able to act "as if" they can solve very difficult problems such as driving a car or catching a ball. Third, are there simple rules of thumb that may do a good job of approximating the optimal solution? Even difficult rare decisions may be done well if a common rule of thumb is effective.¹

Obviously, the first two criteria argue against the use of an optimizing model of saving for retirement. Figuring out how much to save and the best dynamic path for achieving any given goal are difficult problems even for economists. It is the rare person indeed who could literally "solve" the implicit problem posed by the theory. Furthermore, given that most people only save for retirement once, the opportunities for learning by doing are minimal. The only plausible ways in which people might approximate an optimal saving plan is either by learning from others (e.g., role models or experts) or by using good rules of thumb. While this possibility cannot be ruled out on a priori grounds, I am not aware of any commonly used savings heuristics that would come close to making life-cycle predictions. On all three counts, then, saving for retirement appears to be a domain where economists should be particularly worried about the issues raised by bounded rationality.²

Bounded rationality refers to the limited intellectual capabilities of human beings. The second problem with the life-cycle theory stems from another human failing: lack of self control (Thaler and Shefrin, 1981). Even if an individual were capable of calculating the optimal amount to save this year in order to maximize lifetime utility, he might well find it difficult to resist the temptation of current consumption. Saving requires willpower, which humans (or at least men) have sometimes had trouble summoning since the time of Adam and Eve. Many households undoubtedly think they should be saving more but find that saving is a luxury they cannot afford.

Self-control problems impair the life-cycle theory in two substantive ways. First, insufficient self-control may prevent households from saving as much as the theory predicts. Numerous studies have investigated whether households save enough to accommodate their retirement needs (and thereby behave as the theory predicts). A recent study by Bernheim (1993b) concludes that the baby-boom generation is saving only a third of the amount necessary to maintain their consumption in retirement. Though it is possible to reconcile this low level of saving with the life-cycle theory if one assumes that people assign a low utility to retirement consumption, this renders the theory empty. Any behavior can be similarly reconciled. A more parsimonious explanation is that the inadequate saving is produced by inadequate will power.

Self-control problems can also distort behavior away from that predicted by the life-cycle model because some situations are more conducive to saving than others, holding wealth, age, and other relevant life-cycle parameters constant. Just as it is easier to stick to a diet while on a nature hike than

¹These criteria are grounds for judging the plausibility of a theory on a priori grounds. Naturally, the ultimate evaluation of a theory must be based on the accuracy of its predictions, as Milton Friedman so forcefully argued. However, the theory does no better on this basis (Hersh Shefrin and Thaler, 1988).

²For further discussion of this issue, see B. Douglas Bernheim (1993a) and Karlkoff et al. (1987).
while attending a chocolate-lovers' convention, it may be easier to save in some situations than others. For example, people find it easier to save from lump-sum payments than from "regular income."

The third source of difficulty with the life-cycle theory is the assumption of fungibility. The essence of the theory is that an individual spends the annuity value of his or her wealth in each period, so an extra dollar of housing wealth, pension wealth, or current lottery winnings all generate the same increase in consumption. Partly for reasons of self-control, this prediction of the theory is not consistent with behavior. People behave in ways that suggest that the source or location of wealth can influence the marginal propensity to spend it. Wealth coming in the form of current income is almost entirely consumed, but wealth coming in the form of an increase in home equity or pension assets has little or no effect on consumption. The life-cycle theory can be enriched by relaxing the assumption of fungibility and instead assuming that households have a set of "mental accounts" with varying marginal propensities to consume (see Shefrin and Thaler, 1988; Thaler, 1985, 1990).

II. Implications for Research

Most economics research on saving is based, either implicitly or explicitly, on the life-cycle model. It follows that if this model is flawed, then some of the existing research program needs to be modified. I will use the debate about whether IRA's stimulated saving to illustrate how a behavioral approach influences the questions one must ask.

The research with the greatest need for change is what might be called dataless policy evaluation. The literature on IRA's is replete with examples of this. In this style of research, it is possible to conclude that IRA's did not stimulate saving on the basis of theory alone. The argument is familiar by now: most IRA contributors already had liquid assets in excess of their IRA contribution; therefore the IRA provided no marginal incentive to save; QED. Obviously this type of analysis is only as useful as the theory from which it is derived. If, as the evidence suggests, IRA contributors did not treat IRA saving as a perfect substitute for other saving, then the condemnation of IRA's is premature.

More substantively, if the concept of mental accounts with differing marginal propensities to consume is granted, than it becomes important to take a longer-term perspective on savings policies. Heretofore, most researchers have concentrated on where the money that flowed into IRA's came from. That is, if a $2,000 IRA contribution came from a savings account then it was called no net saving, whereas if it came from reduced consumption, then it was net saving. Clearly this is too simple. Suppose the marginal propensity to consume (MPC) from a savings account is 0.4 while the MPC from an IRA is 0.05. Then the transfer from one account to another was not inconsequential.

Evidence supporting precisely this possibility is provided by William Gale and John Karl Scholz (1994). They investigate the relationship between 1986 non-IRA financial saving (NIFS) and a series of other variables measured in 1983. For IRA contributors, the effect of non-IRA financial assets in 1983 is highly negatively correlated with 1986 NIFS ($r = -9.2$) while debt in 1983 is positively associated with NIFS ($r = 3.1$). Pension and IRA dummies (again from 1983) both have positive though statistically insignificant coefficients. These results are consistent with the mental accounting predictions of high MPC's from savings accounts, virtually zero MPC's from pensions and IRA's, and a strong predilection to pay off debts (though different interpretations are also possible [see Gale and Scholz, 1994]). From this evidence, transfers from savings accounts to IRA's and even borrowing to contribute to IRA's both reduce consumption over the long haul. Money in a savings account can be splurged on a new car, but money in an IRA is likely to stay put.

Another long-term issue that has been given scant attention in the literature is persistence. The evidence suggests that once people start putting money into an IRA they are likely to continue to do so. For example, Jonathan Skinner (1992) reports...
that over 80 percent of IRA contributors in a year contribute again the following year, and fully 61 percent of those who contributed in 1982 did so in all four of the subsequent years that IRA's were widely available. Leslie Papke et al. (1993) find even stronger persistence among contributors to 401(k) plans. These high persistence rates reinforce the long-term benefits of both IRA's and 401(k)'s. Not only is a contribution likely to stay saved for a long time, but one contribution begets another.

III. Implications for Policy

Getting real people to save is both harder and easier than economic theory would suggest. Real people have trouble both in figuring out how much to save and in implementing a plan to achieve any given goal. Nevertheless, the behavioral framework outlined here does offer numerous novel policy possibilities. I will focus on two general areas: information and incentives.

A. Information

If people are having trouble making decisions there is a legitimate role for the government in providing information. A good example is the practice of putting energy-efficiency labels on appliances. These labels are not very costly, and they enable consumers to make better-informed choices. Of course, the slope between providing information and jawboning is a slippery one. Nevertheless, it is important to stress that calculating how much to save for retirement is a very difficult problem, and it is not clear how the private sector can provide this information in an unbiased fashion. In this spirit, Kotlikoff's (1992) suggestion of sending annual Social Security statements is worthy of serious consideration. However, Social Security is only one part of the retirement savings program. People need additional information about other savings plans, especially with defined-contribution pension plans becoming more popular. What other steps could the government take? Bernheim (1993a) makes several sensible suggestions, including activities to improve economic literacy, so I will add only one more.

Give the private sector an incentive to promote savings. —In designing programs that create incentives to save, such as IRA's, the government should at the same time create incentives for the private sector to stimulate demand through advertising and other promotional activities. Lawrence Summers (1986) and others have noted that banks and other financial-service companies heavily promoted IRA's during the period when they were widely available. Although it is hard to measure the importance of this advertising, it could be substantial and comes free to the government. A similar spillover comes from the existing rules on defined-benefit pension plans and 401(k)'s which tie the maximum benefit given to top management to the benefits accrued by lower-paid workers. These rules give firms an incentive to encourage their lower-paid workers to enroll in the program.

B. Incentives

Naturally enough, when economists discuss tax-favored savings programs such as IRA's and 401(k)'s they tend to emphasize the increased after-tax rate of return as the key feature of the program, although, as discussed earlier, neither the sign nor the magnitude of such effects is known. The framework suggested here points to other features as important. The ideal savings program has the following characteristics:

(i) It provides an immediate reward to saving.
(ii) It is simple to use and to understand.
(iii) The money is perceived as "off-limits" to current spending.
(iv) Experts consider the program a good deal.

It is apparent that the original IRA program scored well on these criteria. The

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3 It is important to stress that the median income of the households who contributed every year is only $43,412, so a contribution of $2,000 per year would represent 4.6 percent of income, or roughly the average personal saving rate during this period.
“front-loaded” tax break gave taxpayers an immediate reward for contributing. For a household in a 30-percent tax bracket, a $2,000 contribution produced a $600 reduction in the tax bill. The rules were fairly simple to understand (although many households believed that the contribution limit was $2,000, whereas for most couples the limit was either $2,250 or $4,000). The penalty upon withdrawal helped discourage spending out of these funds, at least for those taxpayers under age 59.5. Finally, contributing to an IRA was considered to be a “smart” thing to do.

Some recent proposals to reinstate some version of the IRA program lack one or more of these desirable features. For example, a popular idea in the Congress is the so-called “back-loaded” IRA. Instead of receiving an immediate tax deduction for contributing, taxpayers would contribute after-tax funds which would accrue interest tax-free, and there would be no tax upon withdrawal. Although the two plans are identical in present-value terms (as long as tax rates do not change), from a behavioral perspective the back-loaded IRA is distinctly worse than the front-loaded IRA. The absence of the immediate deduction would make the plan less popular, and the absence of a withdrawal penalty would imply that whatever funds did get contributed would be more at risk to a spending spree. The only reason why this idea is popular is because it represents the Congress’s idea of a free lunch. The Congress can say it is doing something about saving, but the program will not have to be paid for until years later, when it will be a problem for some other Congress.

For different reasons I also worry about some aspects of the Premium Savings Account suggested by Bernheim and Scholz (1993). Under this plan, in order to obtain tax-favored saving an individual or household would first have to save some minimum amount on an after-tax basis, where the minimum is an increasing function of income. Thus a low-income person might be eligible for an old-style IRA, whereas a higher-income family might have to save $5,000 first before it becomes eligible for the IRA. The idea is to maximize the number of households who get a marginal incentive to save. From a behavioral viewpoint the plan is attractive in suggesting substantial savings “targets” for higher-income households. My worry is that the plan is just too complicated. Few households would know whether they were eligible without making fairly extensive calculations, and the rules to determine eligibility would either be easy to manipulate or extremely complicated.⁴

As for my own suggestions about explicit programs to encourage saving, I would begin by urging that the old IRA program be reinstated with new higher limits that are indexed to the rate of inflation. In what follows I will assume that this suggestion has been taken.

1. **Let federal taxpayers deposit their refunds into IRA’s.**—Taxpayers electing this option would have the amount contributed increased by their marginal tax rate. That is, a taxpayer in the 28-percent bracket who was going to receive a $1,000 refund could instead ask that $1,280 be sent directly to the firm holding the IRA account.

This proposal shares all the merits of the traditional IRA and has some additional features. Specifically, it is designed with three facts in mind. First, most taxpayers get refunds. Second, under the old IRA plan, many contributors to IRA’s did so at the last minute (Summers, 1986). Third, taxpayers were more likely to contribute if they would have otherwise owed the IRS money. While all three of these facts are puzzling in a standard economics framework, they are not surprising from a behavioral perspective. People like refunds because they view them as psychologically easy ways to save. They contribute at the last minute for the

⁴For example, suppose my minimum is $5,000 and suppose I buy a $25,000 car every fifth year. If I save up for that car by putting $5,000 away each year I would be eligible in four out of five years, although I would not really be saving any more than someone who leased the car. I do not see any simple way of avoiding this kind of abuse.
same reason that I find myself finishing this paper in late December (see George Akerlof, 1991). Finally, they are more likely to contribute to an IRA if they would otherwise owe money because writing a check to the IRS feels like a loss, and losses loom larger than gains (Daniel Kahneman et al., 1991).

The goal of this proposal is to give those who would otherwise be less likely to contribute to an IRA an easy way to do so. People who receive substantial refunds are middle-income taxpayers who are not very sophisticated about financial planning. To be eligible for this program they would only have to receive a refund and have an IRA account open. Additionally, taxpayers would be given the opportunity to request that their withholding rates be increased to allow a greater contribution the following year.

2. Increase withholding taxes.—I first made this surprising proposal in the spring of 1992, shortly before George Bush decided to cut withholding rates! It is therefore with some trepidation that I repeat the suggestion. As argued above, most taxpayers like refunds, so raising withholding taxes improves the government’s cash flow and makes taxpayers happy, an unusual parlay. On top of that, however, there is evidence that people save more from lump-sum payments (see Shefrin and Thaler, 1988), so increasing the withholding rate should also increase the saving rate. A free lunch! Obviously, this proposal would ideally be combined with proposal 1.

3. Encourage firms with defined-benefit programs to make joining the program the default option for employees.—Pensions in general and 401(k)s in particular are good savings vehicles. Those who participate in such plans show no signs of reducing their savings elsewhere. However, if an employee does not enroll, then obviously the pension does not help. My suggestion is to make joining the default option. For several reasons (inertia, loss aversion, transactions costs) this simple change could substantially increase enrollments.

REFERENCES


