

Justifying Public Provision of Social Security

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Abstract

The enormous expansion of the Social Security system over the last four decades has left the government very heavily involved in determining the savings and insurance of American households. While the growth of Social Security has been very substantial, it has also been gradual; this may explain the lack of focused debate on the pros and cons of government intervention in private saving and insurance decisions. This paper discusses the rationale for government intervention in this area as well as the evidence supporting the need for such intervention. While arguing the case for government provision of Social Security, the paper also points out significant shortcomings in the current system and suggests several needed reforms.

The enormous expansion of the Social Security system over the last four decades has left the government very heavily involved in determining the savings and insurance of American households. For most American households Social Security retirement and disability benefits represent, respectively, the most important sources of retirement finances and disability insurance. In addition, Social Security's provision of life insurance in the form of survivor benefits, although not as significant as privately provided life insurance, is an important addition to the life-insurance holdings of many Americans.

While the growth of Social Security has been very substantial, it has also been gradual; this may explain the lack of focused debate on the pros and cons of government intervention in private saving and insurance decisions. I will discuss the rationale for government intervention in this area as well as the evidence supporting the need for such intervention. Although arguing the case for government provision of Social Security, I will also point out significant shortcomings in the current system and suggest several needed reforms.

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RATIONALES FOR GOVERNMENT PROVISION OF SOCIAL SECURITY

It's There Because It's There

It may be useful to rule out immediately one rationale for Social Security's continued existence—that because the system is unfunded, it must be perpetuated in order to avoid defaulting on obligations to current and near term beneficiaries. Such is not the case. If it so desired, the government could phase out Social Security by simply eliminating the payroll tax and using explicit deficit finance to pay for the accrued benefits of current generations. In this case current young and future generations would still bear the burden of covering Social Security's unfunded accrued liabilities to those currently alive. But they would bear that burden by paying higher income taxes to cover interest on the newly issued government debt, rather than bear the burden by receiving less than a market rate of return on their Social Security tax contributions. Hence, while the country is for all practical purposes locked into its accrued obligations to those currently alive, it can meet such obligations without simultaneously continuing to force households to save and insure. Stated differently, one can divide Social Security tax contributions of current workers into two parts: the first represents payments on the system's unfunded accrued liabilities, and the second represents forced saving and insurance purchase. The country could eliminate the second part of the tax while maintaining the first.

Paternalism

Paternalistic concern appears to underlie much of the government's intervention in household saving and insurance decisions. There seems to be an unstated belief that, left to their own devices, a sizeable fraction of households would inadequately save and insure.

The question of the adequacy of saving and insurance needs to be distinguished from the question of the adequacy of the resource base used to finance savings and the purchase of insurance; these issues are often confused. While Social Security can and certainly has played a role in redistributing resources across and within generations, it cannot (except under conditions not relevant for the U.S.) increase the overall resource base of the economy. Hence, by increasing the adequacy of the resource base of certain generations or groups within generations, it is also reducing the adequacy of the resource base of other generations or groups within generations.

The question of the adequacy of private saving and insurance purchase is not whether resources are sufficiently large, but rather whether the resources available are reasonably allocated between current and future consumption (in the case of savings) and between the purchase of insurance and other expenditures (in the case of insurance). Thus upper- as well as lower-income households may inadequately save and insure. In other words, they may experience a significant drop in living standards during retirement or in the event of disability or the death of a working spouse.

Inadequate saving and insuring can arise from myopia, misinformation, miscalculation, and simple laziness. Myopic households range from those who perceive future needs but care only for immediate gratification, to those who find it psychologically too trying to consider unpleasant events (such as

disability) or unaccustomed stages in life (such as retirement). Casual evidence suggesting the existence of immediate gratifiers is the formation of Christmas clubs whose members are sufficiently concerned about their lack of self control that they place funds out of their reach until Christmas, although these funds earn little or no interest.

Misinformed households include those who incorrectly believe their future earnings will be high, those who incorrectly think their mortality and disability probabilities are low, and those who incorrectly believe their relatives and friends will provide adequate support in time of need. Misinformation or simply ignoring the possibilities of what appear to be highly unlikely events can leave one exposed to significant drops in standards of living. The 60-year-old who expects to live to 75 and was sure, before his back went out, that he would retire at 65, now has to finance a 33% longer retirement without additional funds for that contingency.

Miscalculating households may be those who know neither how to discount future income flows nor to accumulate interest income on their savings. Many Americans appear to have trouble taking percentages, let alone doing intricate present-value calculations. A recent experimental study asked a sample of college students to make consumption choices in a certainty environment with explicitly specified levels of initial assets and earnings streams.¹ They report a considerable variance in consumption choices in cases where the present value of lifetime resources is fixed, but the mix between initial assets and the present value of labor earnings differs.

Lazy households simply find it too much of a bother to figure out whether they are saving and insuring at adequate levels. Having once made some initial decision, for example, about life insurance, they may be very slow to adjust the decision in light of changing circumstances.

For all such myopic, misinformed, miscalculating, and lazy households, government-forced saving and insurance purchase through Social Security—if effective in raising total levels of saving and insurance—may be highly beneficial. The effectiveness of these policies depends on the ability and propensity of such households to offset the government-forced saving and insurance purchase by reducing their non Social Security saving and insurance. For instance, households may respond to the government's provision of survivor insurance by cutting back their purchase of life insurance from the private insurance industry. If such private offsets to government behavior are important and widespread, then Social Security, regardless of its good intentions, will not increase total household savings and insurance.

Market Failure

Another important rationale for government intervention in the insurance area is the possible failure of certain private insurance markets because of adverse selection, moral hazard, and related problems. Annuity insurance offers a good example. Essentially no private annuity market exists in the U.S. at the current time. One explanation is that households have sufficient annuities in the form of private pensions and Social Security, and they can also self insure fairly well.² Although this is true, apparently a substantial segment of society would purchase actuarially fair annuities. The adverse selection problem behind the actuarially unfair pricing of private annuities

may be that those who are particularly healthy chose to purchase such annuities;³ because the insurance company cannot ascertain the state of health of its customers, it cannot charge particularly healthy customers a higher price to cover their longer expected longevity. Another problem with respect to private annuities is that they are not real annuities, i.e., they are not indexed for inflation.

In contrast to the private market, the government is in a unique position to overcome adverse selection in its provision of annuity insurance by requiring universal coverage. The government also has the unique position of providing real annuities, i.e., to insure against inflation, since it is the ultimate source of inflation through its printing of money.

Disability insurance offers another example of an important type of insurance in which there is essentially no private market, with the exception of employer-provided policies. While a range of disabling medical problems can be readily identified, other problems (such as chronic back pain) cannot be objectively observed by the insurance company and therefore present problems of moral hazard as well as simple fraud. One advantage of the government in providing disability insurance relative to private industry is its access to extensive employment information. Thus the government can determine more easily than private insurance companies whether a disability beneficiary has returned to work and thus is no longer eligible for disability benefits.

Risk sharing between generations who are currently alive and those not yet born is a form of insurance that the private market simply can not provide. The reason is that contracts cannot be written between generations currently alive and those not yet born. Thus if one generation experiences a severe economic recession or a war, the private market cannot spread the burden of paying for these events across future generations. The government, through both its Social Security and other fiscal policies can, however, pool good and bad times across generations. In this connection the significant redistribution to the elderly in the post-war period through Social Security may be viewed as partly offsetting some of the burdens of World War II and the Great Depression.

Another type of insurance implicitly provided by Social Security is divorce insurance, which may be particularly valuable to spouses with low earnings. Social Security provides dependent and survivor benefits to divorced spouses, provided their marriage lasted at least 10 years. An interesting feature of these benefits is that they are based on the primary earner's entire earnings history, not just the earnings during the period of the marriage. Thus the divorced, low-earner spouse is insured some return on the earnings of the high earner spouse even though those earnings occurred after the marriage. Since earnings typically rise over the life cycle, this provision partly insures the low-earning spouse for the loss of the future earnings of the high-earning spouse. Although the private market could conceivably provide some form of divorce insurance, this insurance seems hard to imagine if only for the reason that many couples may feel too embarrassed to purchase such insurance or find the issue too sensitive to discuss. Such insurance would also be subject to adverse selection problems which, again, are avoided by the government's requirement of comprehensive coverage of virtually all couples.

Self Serving Altruism

A rationale for government-provided Social Security that is similar to paternalism may be labeled self-serving altruism. In this explanation of Social Security individuals, rather than an abstract government, are concerned about the welfare of their fellow citizens. Indeed, it is possible that each individual cares about the welfare of all other individuals. Although each individual may be altruistic towards everyone else, those who fare better economically will end up transferring resources to those who fare poorly. Because each individual can anticipate such transfers in the event of bad luck, an incentive will exist to free ride on the generosity of others when considering how much to save and insure for such outcomes. Stated differently, in making saving and insurance decisions individuals do not internalize the external gains to their altruistic fellow citizens by their having more savings and more insurance.

The classic prescription for dealing with such externalities is for the government to encourage more saving and insurance. Clearly, forcing people to save and insure more than they would do voluntarily is one method of encouragement. Another would involve subsidizing saving and the purchase of insurance. A problem with subsidies as opposed to specified levels of required saving and insurance purchase is that individuals may not be able to observe each others' savings and insurance holdings. Hence, those who fare well will be open to appeals for charity from individuals who have done poorly (but not *that* poorly) and are misrepresenting the extent of their misfortune. By forcing individuals to save and insure, the government—which can be viewed as representing the more-fortunate segment of altruistic society—eliminates or at least reduces this information problem because the government now has substantial knowledge of the actual economic situation of each individual. Indeed, for many individuals who do poorly, Social Security benefits will represent their only retirement asset. For such individuals the government knows not only their earnings history, but also the precise amount of their assets.

In a world of initially identical self-serving altruists each individual, knowing that she will be vulnerable for assistance in the future, will favor setting up a compulsory saving and insurance system. To illustrate these points consider a very simple economy consisting of person *A* and person *B*, both of whom live and consume for two periods and are altruistic towards each other in their second period. Suppose each person earns 1 in the first period, but in the second period, with probability $\frac{1}{2}$ *A* earns 1 and *B* earns 0, and, with probability $\frac{1}{2}$, *A* earns 0 and *B* earns 1. Denote by the second period state Λ in which *A* earns 1 and *B* earns 0, and denote by $*$ the second-period state in which *A* earns 0 and *B* earns 1. Also take the case of a zero interest rate. Then, assuming logarithmic utility, the expected utility of *A* can be written as

$$EU^A = \log C_y^A + \frac{1}{2}[\log \hat{C}_o^A + m \log \hat{C}_o^B] + \frac{1}{2}[\log C_o^A + m \log C_o^B],$$

where C_y stands for consumption when young, C_o stands for consumption when old, and m is a parameter whose value lies between 0 and 1 which indicates the extent of altruistic caring by *A* for *B* and by *B* for *A*. An exactly analogous expression can be written for the expected utility of *B*.

In state Λ , *A* is relatively well off and transfers to *B*. The opposite occurs in

state *. In state Λ , A determines the consumption of the two at the margin; letting R stand for the combined resources of A and B in state Λ , A will choose to consume $[1/(1+m)]R$ and will transfer his remaining money to B , who will consume $[m/(1+m)]R$. As can easily be verified, in state Λ , B would prefer to reverse the fractions of R that he and A consume. But since B has less money in state Λ he cannot enforce his desire to consume a larger fraction of the combined resources of A and B . A , on the other hand, is in a position to enforce his desired allocation of R ; since his own second-period resources exceed $[1/(1+m)]R$, he transfers the excess to B , who is eager to receive the transfer and, indeed, would like to receive more.

Thus in state Λ B understands that he will not control at the margin the allocation of total resources, and every additional dollar saved by B when young will mean only $m/(1+m)$ dollars more of his own consumption in state Λ . In other words, if B saves another dollar, in state Λ A will cut back his transfers by $\$1/(1+m)$, leaving B with only $\$m/(1+m)$ of additional consumption. Of course exactly the opposite situation arises in state *. Hence, in the first period when thinking about how much to save, both A and B will realize that another dollar of savings will not deliver, in their respective adverse states, as much benefit as if they had control in these states of the marginal allocation of consumption. As a consequence both A and B will have a smaller saving incentive when young. This can be viewed as a form of free riding on the generosity of each other, or it can be viewed as a failure by each to consider the full benefit to the other of their having additional savings in their adverse state.

It is easy to show that, without government intervention, C_y for both A and B will equal $3/(3+m)$, while the Pareto-efficient level of consumption is smaller when they are young, namely $3/(4+2m)$. If m equals $\frac{1}{2}$, the efficient level of consumption is 28% smaller than the inefficient level, and the efficient level of saving is 3.6 times the inefficient level.

To see why compulsory saving may be more efficient than subsidization in increasing saving, consider an extension of the simple model to include uncertain second-period earnings in the adverse state. In state Λ , which still occurs probability $\frac{1}{2}$, A still earns 1; but B earns 0 with probability $\frac{1}{2}$ and 0.5 with probability $\frac{1}{2}$. In state * B still earns 1, but A earns 0 with probability $\frac{1}{2}$ and 0.5 with probability $\frac{1}{2}$. If m is not too small, A will still transfer to B in state Λ , and B will transfer to A in state *. Assume now that B 's earnings in state Λ are not observed by A , and vice versa in state *. Then in state Λ B will have an incentive to mis-state his earnings as 0 when they are actually 0.5. Similarly A will mis-state nonzero earnings in state *. As a consequence A in state Λ and B in state * face uncertainty about the resources of each other, and they make their transfers subject to this uncertainty.

In state Λ A 's second-period level of expected utility is given by

$$V_A = \max_{\hat{C}_0^A} EU_0(\hat{C}_0^A) = \max_{\hat{C}_0^A} \log \hat{C}_0^A + mE \log \hat{C}_0^B$$

$$\text{s.t.: } \hat{C}_0^A + \hat{C}_0^B = 1 + 2S + \bar{W}^B,$$

where $2S$ is combined first-period saving $2(1 - C_y)$ of A and B , and \bar{W}^B is B 's random second-period earnings in state Λ . Denote the optimal choice of \hat{C}_0^A as \bar{C}_0^A and note that

$$V_A = \max_{\hat{C}_0^A} EU_0(\hat{C}_0^A) = EU_0(\bar{C}_0^A) \leq E \max U(\hat{C}_0^A).$$

Hence, for any choice of C_y , and therefore S , A 's expected utility in the second period in state Λ is larger if B 's second-period earnings are revealed prior to A 's choice of \hat{C}^A . It is also the case that both A and B could be better off if B 's second-period state- Λ earnings were public knowledge. To see this, suppose that B 's earnings are revealed, but that A is forced to consume \hat{C}^A when B 's earnings are 0.5. When B 's earnings are zero, A is free to choose \hat{C}^A . In this case \hat{C}^A will be less than \hat{C}^A , making both A and B better off. Hence, under this scenario when B 's earnings are 1, A and B are in the same situation as in the case that B 's earnings are not observed, while both are better off when B 's earnings are zero. Thus we see that observability of B 's earnings can provide a Pareto improvement over the situation of nonobservability.

If all saving of A and B is compulsory and done through Social Security, then Social Security faces no problem of observation. Hence, Social Security can resolve both the problems of deficient first-period saving and nonobservability of second-period earnings. To Pareto improve the allocation, Social Security must, however, be able to link benefit payments to earnings. This can be readily accomplished if Social Security provides benefits on a progressive basis. In this case in state Λ , B receives positive transfers (via Social Security) from A , but the extent of these transfers declines with the level of B 's state- Λ earnings, which is exactly what would occur without Social Security if A could observe B 's earnings.

In concluding this discussion of self-serving altruism it is worth pointing out that the altruism need not be among individuals of the same generation. Suppose, for example, children care about their parents.⁴ In this case parents, taking into account their children's future support, may undersave, i.e., free ride on their children. Again, such an externality can be rectified through compulsory Social Security.

EMPIRICAL ANALYSES OF THE ADEQUACY OF SAVINGS AND INSURANCE

The Adequacy of Savings

As mentioned above, a proper phrasing of the questions of the adequacy of savings and insurance is whether households are making reasonable intertemporal consumption choices and reasonable insurance-purchase decisions given their current and expected future economic resources. Kotlikoff, Spivak, and Summers (KSS)⁵ examine the adequacy of saving by comparing the constant stream of consumption that couples could have financed when young with the constant stream that they can finance in old age. Couples with significant reductions in their affordable consumption streams are classified as inadequate savers. Their data set is the Retirement History Survey (RHS) which provides information both about the lifetime labor earnings of each spouse as well as the economic position of the couple in old age.

Table 1 reports the distributions of old-age to lifetime consumption ratios, cross tabulated by the average earnings level (in 1969 dollars) of the couple between 1951 and 1969. The table indicates that over 90% of married couples can afford an old-age level of consumption that exceeds 80% of their affordable lifetime consumption level; 73% of the couples can afford a larger consumption stream in their old age than they could afford to purchase at age 30. The lower tails of the distribution are also of interest. According to Table

Table 1. Ratio of old-age consumption stream to lifetime consumption stream, no-annuity case.⁵

Couple's average earnings	0-0.39	0.40-0.49	0.50-0.59	0.60-0.69	0.70-0.79	0.80-0.89	0.90-0.99	1.00-1.09	1.10-1.19	1.20-1.29	1.30+	Total
\$0-\$2999	0	0	4	4	6	8	15	20	18	9	98	182
Number	0.00	0.00	2.20	2.20	3.30	4.40	8.24	10.99	9.89	4.95	53.85	100
Row Percent	0	3	2	2	11	10	13	12	15	15	60	143
\$3000-3999	0.00	2.10	1.40	1.40	7.69	6.99	9.09	8.39	10.49	10.49	41.96	100
Number	0	0	1	5	6	12	22	19	27	19	59	170
Row Percent	0.00	0.00	0.59	2.94	3.53	7.06	12.94	11.18	15.88	11.18	34.71	100
\$4000-4999	0	0	1	4	11	20	26	30	20	26	77	215
Number	0.00	0.00	0.47	1.86	5.12	9.30	12.09	13.95	9.30	12.09	35.81	100
Row Percent	0	0	3	3	10	23	31	32	38	29	71	240
\$5000-5999	0.00	0.00	1.25	1.25	4.17	9.58	12.92	13.33	15.83	12.08	29.58	100
Number	0	0	0.79	1.19	5.93	6.72	11.07	16.60	20.55	13.04	61	253
Row Percent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100
\$6000-6999	0	0	0	5	15	20	25	26	23	27	67	208
Number	0.00	0.00	0.00	2.40	7.21	9.62	12.02	12.50	11.06	12.98	32.21	100
Row Percent	0	0	0	7	6	10	12	21	29	28	50	165
\$7000-7999	0.00	0.61	0.61	4.24	3.64	6.06	7.27	12.73	17.58	16.97	30.30	100
Number	0	0	1	1	6	13	15	18	12	15	30	111
Row Percent	0.00	0.00	0.90	0.90	5.41	11.71	13.51	16.22	10.81	13.51	27.03	100
\$8000-8999	0	0	5	6	17	18	31	38	29	39	91	277
Number	0.36	0.00	1.81	2.89	6.14	6.50	11.19	13.72	10.47	14.08	32.85	100
Row Percent	1	4	20	42	103	151	218	258	263	240	664	1964
\$9000-9999	0.05	0.20	1.02	2.14	5.34	7.69	11.10	13.14	13.39	12.22	33.81	100
Number	0.05	0.20	1.02	2.14	5.34	7.69	11.10	13.14	13.39	12.22	33.81	100
Row Percent	0.05	0.20	1.02	2.14	5.34	7.69	11.10	13.14	13.39	12.22	33.81	100
\$10,000-11,999	0	0	1	1	6	13	15	18	12	15	30	111
Number	0.00	0.00	0.90	0.90	5.41	11.71	13.51	16.22	10.81	13.51	27.03	100
Row Percent	0	0	0.90	0.90	5.41	11.71	13.51	16.22	10.81	13.51	27.03	100
\$12,000+	1	0	5	6	17	18	31	38	29	39	91	277
Number	0.36	0.00	1.81	2.89	6.14	6.50	11.19	13.72	10.47	14.08	32.85	100
Row Percent	1	4	20	42	103	151	218	258	263	240	664	1964
Total	0.05	0.20	1.02	2.14	5.34	7.69	11.10	13.14	13.39	12.22	33.81	100

1 fewer than 2% of elderly respondents in 1969 faced implied reductions in their standard of living by more than 40%. Only 5 of the 1,964 couples in this sample had computed sustainable consumption ratios below 0.5.

Table 2 presents the distribution of the consumption ratio for those couples with retired household heads. These couples appear somewhat less well prepared for their old age than couples whose head is still working in 1969. For 13% of the couples with retired household heads, retirement assets are insufficient to finance old-age consumption streams greater than 80% of the lifetime sustainable stream. The comparable percent for the entire sample is 9%.

For those couples with no private pensions, the distribution of consumption ratios suggest somewhat less adequacy in old-age resources than for the overall sample. 12% of the couples without pensions had a ratio less than 0.8. Among combined subsamples of retired couples and couples with no pension, however, fewer than 1% of respondents indicate ratios that are less than 0.5.

While readers should draw their own conclusions from the tables, these data suggest to me no evidence of significant undersaving. In viewing these numbers, it should also be recalled that some individuals—even in the presence of perfect annuity markets—may prefer to consume at a lower rate in their old age than in their youth, while some couples may prefer the opposite.

Arguments exist, of course, for rising affordable levels of consumption as one ages. There appear to be particular types of risks (such as the need for nursing-home care) that private markets insure poorly. In addition, many elderly people appear to have a strong fear of becoming a burden to their children.

How do these numbers square with the standard findings from national surveys that large fractions of the elderly have little or no net wealth, and that a larger fraction has no positive liquid wealth? The figures presented here are consistent with these facts. While fewer than 9% of married couples exhibit sustainable consumption ratios of less than 0.8, slightly more than $\frac{1}{4}$ of couples reported levels of net worth that represent less than 10% of their total future resources. In addition, 67% of married couples held less than 10% of their future resources in liquid wealth. Of these couples, 21% had no liquid wealth whatsoever. Despite the fact that a significant fraction of the elderly in this sample have little or no liquid or illiquid wealth, their Social Security, pension, and earnings stream are sufficient to finance a level of old-age consumption as large or larger than they enjoyed in their youth.

Analysis of the rate at which the elderly consume their retirement resources provides another test of the ability of the elderly to plan cogently their old age consumption. Table 3 from KSS presents the ratio of the annuity that elderly couples could have financed in 1971 to the annuity they could have financed in 1969. A ratio close to unity suggests that couples are managing to provide a level consumption stream as they age. The table indicates that roughly 60% of couples have ratios of the 1971 affordable annuity that lies within 10% of the 1969 affordable annuity. In 1971, 16% of couples could have financed an annuity more than 10% larger than they could have managed in 1969. On the other hand, almost 25% of 1971 couples could not have financed an annuity as large as 90% of the 1969 annuity; 6% of couples could not afford an annuity constituting 70% of the 1969 annuity.

While these data provide no overwhelming *prima facie* support for the existing massive forced-savings programs, they also provide no strong support for expansion of the Social Security and private-pension systems. If this

Table 3. Ratio of annuity in 1971 to annuity in 1969.⁵

Couple's average earnings	0-0.29	0.30-0.39	0.40-0.49	0.50-0.59	0.60-0.69	0.70-0.79	0.80-0.89	0.90-0.99	1.00-1.09	1.10-1.19	1.20-1.29	1.30+	Total
\$0-\$2999													
Number	1	2	2	3	5	4	13	61	53	34	26	17	221
Row Percent	0.00	0.90	1.36	2.26	1.18	5.88	27.60	23.98	15.38	11.76	7.89	7.69	100
\$3000-\$3999													
Number	0	0	1	1	5	3	24	64	41	32	9	10	190
Row Percent	0.00	0.00	0.53	0.53	2.63	1.58	12.63	33.68	21.58	16.84	4.74	5.26	100
\$4000-\$4999													
Number	0	1	2	1	3	9	26	78	48	29	12	9	218
Row Percent	0.00	0.46	0.92	0.46	1.38	4.13	11.93	35.78	22.02	13.30	5.50	4.13	100
\$5000-\$5999													
Number	2	0	1	7	3	6	37	116	72	25	8	11	288
Row Percent	0.69	0.00	0.35	2.43	1.04	2.08	12.85	40.28	25.00	8.68	2.78	3.82	100
\$6000-\$6999													
Number	0	0	0	5	8	13	39	134	79	24	4	11	317
Row Percent	0.00	0.00	0.00	1.58	2.52	4.10	12.30	42.27	24.92	7.57	1.26	3.47	100
\$7000-\$7999													
Number	0	0	3	5	14	14	43	152	63	23	12	11	340
Row Percent	0.00	0.00	0.88	1.47	4.12	4.12	12.65	44.71	18.53	6.76	3.53	3.24	100
\$8000-\$8999													
Number	0	1	0	4	10	15	37	111	61	17	7	7	270
Row Percent	0.00	0.37	0.00	1.48	3.70	5.56	13.70	41.11	22.59	6.30	2.69	2.59	100
\$9000-\$9999													
Number	1	1	1	4	5	17	39	94	42	10	3	4	221
Row Percent	0.45	0.45	0.54	1.81	2.26	7.69	17.65	42.53	19.00	4.52	1.36	1.81	100
\$10,000-\$11,999													
Number	2	0	0	4	8	9	20	58	21	11	5	4	142
Row Percent	1.41	0.00	0.00	2.82	5.63	6.34	14.08	40.85	14.79	7.75	3.52	2.82	100
\$12,000+													
Number	2	3	12	19	11	34	92	124	40	12	12	14	375
Row Percent	0.53	0.80	3.20	5.07	2.93	9.07	24.53	33.07	10.67	3.20	3.20	3.73	100
Total													
Number	8	8	22	53	72	124	370	992	520	217	98	98	2582
Row Percent	0.31	0.31	0.85	2.05	2.79	4.80	14.33	38.42	20.14	8.40	3.80	3.80	100

evidence offers little positive justification for forced savings, does it offer any compelling evidence against forced savings? To consider this question, the distributions of the affordable consumption ratios were recomputed under the extreme assumption that, in the absence of Social Security, all individuals would have fully consumed their tax contributions. The effect of setting all Social Security taxes and benefits to zero has a dramatic effect on the distribution of the ratios of old-age to lifetime consumption. Over 40% of the sample would suffer at least a 20% reduction in their consumption levels in a world with no Social Security, given the assumption that all Social Security taxes would have been consumed. Of this 40%, 20% would suffer a 50% reduction in consumption; 9% would suffer over a 70% reduction in consumption.

The results are even more impressive if one considers the subset of the population that is retired and that has no pension benefits. For this group, eliminating Social Security from the calculation and assuming no offsetting private-savings response leaves 32% of the sample with a retirement annuity lower than $\frac{1}{3}$ of their lifetime annuity. In the no-annuity framework, 65% of the sample would face a 50% or greater reduction in their standard of living.

These numbers are sufficiently dramatic to conclude that no strong case could be made for or against Social Security and other forced savings programs, based on the adequacy of resources available during retirement, unless and until one pins down the exact savings response to these programs.

KSS present a regression analysis to pin down the saving response to Social Security. This analysis suggests that, absent Social Security, the ratio of sustainable old-age consumption to sustainable consumption when young would be substantially lower for a large fraction of households. Although their results are subject to several possible biases and should be viewed cautiously, they do suggest a potential problem of inadequate savings in the absence of government intervention.

The Adequacy of Insurance

Auerbach and Kotlikoff (AK)⁶ examine the adequacy of life insurance using a methodology similar to that in KSS. They compare the constant consumption stream that could be guaranteed for each spouse (given the couple's resources and the proper purchase of life insurance) with the consumption streams that could be afforded in the event of the death of either of the two spouses (given their actual holdings of life insurance). Thus a couple with no life insurance and with virtually all its resources tied up in the husband's future earnings will have a very low ratio of the surviving wife's affordable consumption stream to the affordable consumption stream with the proper purchase of life insurance. For a surviving husband, on the other hand, the consumption ratio will be close to 2 because, in the event of the wife's death, the same resources will be feeding only one mouth. The Retirement History Survey is also used in this analysis. Table 4, reproduced from AK, considers the entire 1969 sample of RHS couples and compares the annuity that could be purchased at the time of the RHS interview with the annuity that the surviving wife could have purchased if her husband had expired immediately after the interview. About 25% of the sample has an annuity ratio below 0.75; almost 50% have a ratio less than 1. A sizeable fraction—33%—has an annuity ratio above 1.25.

Table 4. Wives' annuity ratios if husbands die: 1969 (by 1969 PVR class).⁶

No. Obs.	Present value of resources						Total 5131
	<10K	10-25K	25-50K	50-100K	100-250K	250K+	
	55	179	714	2040	1922	221	
Fraction of potential 1969 annuity							
<0.1							
Number	1	0	5	1	0	0	7
Percent	2%	0%	1%	0%	0%	0%	0%
0.1-0.25							
Number	0	4	9	10	3	1	27
Percent	0%	2%	1%	0%	0%	0%	1%
0.25-0.5							
Number	3	19	75	155	83	1	336
Percent	5%	11%	11%	8%	4%	0%	7%
0.5-0.75							
Number	13	42	156	391	280	4	886
Percent	24%	23%	22%	19%	15%	2%	17%
0.75-1.0							
Number	7	35	183	514	418	9	1166
Percent	13%	20%	26%	25%	22%	4%	23%
1.0-1.25							
Number	3	8	131	458	478	16	1094
Percent	5%	4%	18%	22%	25%	7%	21%
1.25-1.5							
Number	6	18	56	306	329	29	744
Percent	11%	10%	8%	15%	17%	13%	15%
1.5-1.75							
Number	4	15	37	114	213	56	439
Percent	7%	8%	5%	6%	11%	25%	9%
1.75-2							
Number	8	11	23	57	83	70	252
Percent	15%	6%	3%	3%	4%	32%	5%
>2							
Number	10	27	39	34	35	35	180
Percent	18%	15%	5%	2%	2%	16%	4%

Turning to hypothetical surviving husbands, AK find a dramatically different situation. Only 2% of hypothetical widowers have annuity ratios below 0.75, 95% have ratios above 1, and 73% have ratios above 1.5. Clearly there is little reason for general concern about inadequate life insurance of wives.

Another way of examining the adequacy of insurance coverage is to limit investigation to those couples for whom significant insurance would be required to keep a surviving spouse from suffering a large drop in consumable resources. This would exclude couples with most of their wealth held in current net worth, as the death of a spouse in such cases would have little effect on total family resources (excluding insurance) available to the survivor. Table 5 repeats the calculations of Table 4 for the subsample of wives who are "at risk," which AK define to be those for whom the husband's survival-contingent resources (labor earnings, pension benefits, and Social Security benefits) constitute over half of the couple's total resources.

Table 5. Wives' annuity ratios if husbands die: 1969 wives at risk (by 1969 PVR class).⁶

No. Obs.	Present value of resources						Total 2776
	<10K 28	10-25K 99	25-50K 446	50-100K 1201	100-250K 972	250K+ 30	
	Fraction of potential 1969 annuity						
<0.1							
Number	1	0	5	1	0	0	7
Percent	4%	0%	1%	0%	0%	0%	0%
0.1-0.25							
Number	0	4	9	10	3	1	27
Percent	0%	4%	2%	1%	0%	3%	1%
0.25-0.5							
Number	3	19	75	155	83	1	336
Percent	11%	19%	17%	13%	9%	3%	12%
0.5-0.75							
Number	13	42	156	391	280	4	886
Percent	46%	42%	35%	33%	29%	13%	32%
0.75-1.0							
Number	7	25	152	454	376	7	1021
Percent	25%	25%	34%	38%	39%	23%	37%
1.0-1.25							
Number	2	3	35	146	171	8	365
Percent	7%	3%	8%	12%	18%	27%	13%
1.25-1.5							
Number	0	4	7	36	41	5	93
Percent	0%	4%	2%	3%	4%	17%	3%
1.5-1.75							
Number	1	2	5	3	9	1	21
Percent	4%	2%	1%	0%	1%	3%	1%
1.75-2							
Number	0	0	0	2	6	2	10
Percent	0%	0%	0%	0%	1%	7%	0%
>2							
Number	1	0	2	3	3	1	10
Percent	4%	0%	0%	0%	0%	3%	0%

Over half of the wives in the sample are, by this measure, at risk. Of this group, over 45% have an annuity ratio of less than 0.75. For wives at risk who are in poorer households, the extent of underinsurance is more significant. Consider, for example, wives at risk with household PVR between 25 and 50 thousand dollars in Table 5. 55% of this group have an annuity ratio below 0.75, and 20% have a ratio below 0.5.

Auerbach and Kotlikoff conclude from these tables and from consideration of potential biases, most of which tend to overstate the adequacy of insurance, that a significant minority of elderly couples appear to have inadequate amounts of life insurance. Indeed, their analysis suggests that inadequate purchase of life insurance may be an important explanation of poverty among elderly widows. They also find, in their estimation of life-insurance demand equations, that the purchase of life insurance is greatly at odds with

theoretical predictions. In particular, unlike the theoretical prediction that couples would offset Social Security's provision of survivor insurance by reducing their private purchase of life insurance, no such offset appears to occur. Social Security survivor insurance is, however, currently too small in scale to significantly offset inadequate private life-insurance purchase.

DIRECTIONS FOR SOCIAL SECURITY REFORM

While there seem to be legitimate theoretical and paternalistic arguments for Social Security and evidence suggesting the need for government intervention in saving and insurance decisions, this does not imply that one should be content with the current structure of Social Security. The U.S. Social Security system appears to be doing much good in a number of areas, but a number of significant problems with the system reflect its rather hodgepodge evolution. These problems may be undermining Social Security's ability to address inadequate private saving and insurance. First, the system provides its active participants with very little information about the likely level of future benefits. Thus most Americans have little or no idea how much actual saving and insuring, both for death and disability, they are doing through Social Security. Some households may, accordingly, overassess the provision of saving and insurance by Social Security and, as a consequence, save and insure too little on personal account. Hence, by failing to inform, Social Security may be partly the cause of the inadequate saving and insurance it presumably was instituted to correct.

A second and related problem is that workers may mistakenly believe they will get little or nothing back at the margin from their Social Security tax contributions. With a combined employee-employer OASDHI tax rate of close to 15%, such a perception means that workers feel they are in a 15-percentage-point higher tax bracket on their labor earnings because of Social Security. Because the level of economic distortion rises with the square of the tax rate, Social Security may be more than doubling the inefficiency of the U.S. tax structure.⁴ A third problem is Social Security's earnings test, which may be helping to induce widespread early retirement. If such is the case, Social Security actually exacerbates the need for savings and the potential inadequacy of savings. Although the KSS study suggests that recent generations of elderly have suffered no drop in their postretirement consumption levels despite their retiring early, these generations may have been surprised by the benefit increases in the 1960s and 1970s. Had they anticipated these benefit increases they may have cut back on their private savings. Since it appears that young and future generations will not experience similar unexpected Social Security windfalls, the trend towards much earlier retirement may contribute to future widespread savings inadequacy.

A fourth concern with Social Security is its redistribution across two-earner and single-earner couples. This redistribution appears to be both quite capricious and, in many cases, quite substantial. In addition to making the system often grossly inequitable, the treatment of two- and single-earner couples means too much saving and insurance for two-earner couples and too little saving and insurance for single-earner couples. Compare the cases of Mr. and Mrs. A and Mr. and Mrs. B. Suppose Mr. A earned \$50,000 per year, and Mrs. A earned zero, while Mr. and Mrs. B each earned \$25,000 per year.

Further suppose that all four have just turned 65. The combined retirement benefits of the A's will exceed that of the B's, although their lifetime incomes are identical. Next consider survivor benefits. The survivor benefit to Mrs. A in the event of Mr. A's death will equal the combined retirement benefit of the A's. If Mr. B dies, on the other hand, Mrs. B's survivor benefit will be zero. The surviving Mrs. A will be left with 100% of the A's retirement benefit, while the surviving Mrs. B will be left with only 50 percent of the B's retirement benefit. If two can live more cheaply than one, which is surely the case, Mrs. B's survivor benefit is inadequate relative to Mrs. A's.

CONCLUSION

In the area of saving and insurance, appropriate government intervention through Social Security can be readily justified on grounds of externalities and failure of insurance markets. The empirical evidence also suggests a basis for paternalistic concern about inadequate savings and insurance. Unfortunately, the current outmoded design of Social Security may be defeating much of programs' legitimate purpose. It would appear to be high time to begin modernizing our half-century-old Social Security system.

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NOTES

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COMMENT

Robert P. Inman

The largest public program for the redistribution of income within the United States is Social Security. In 1984 over \$273 billion in benefits were

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