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MEDICARE REFORM: THE LARGER PICTURE

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ABSTRACT

The "Medicare problem" is examined as part of the larger problem of providing for the overall financial needs of the elderly. Several myths about Medicare are discussed, and sources and uses of the elderly's "full income" are estimated. The paper explores policy options to deal with technology-induced increases in health care expenditures and excessive dependence of the elderly on transfers from the young. The paper concludes that if Americans wish to continue to enjoy the benefits of medical advances, they will have to work more before *and* after age 65 and will have to increase substantially their rate of saving.

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Attempts to reform Medicare reflect pressures from diverse groups: The elderly complain about Medicare's failure to cover drugs; budget-balancers fear escalating expenditures; hospitals and physicians deplore inadequate reimbursement that forces them to skimp on services; and stake-holders in education, housing, child-care, and defense see Medicare as an 800-pound gorilla that crowds out everything else. At the most fundamental level, the "Medicare problem" is best understood as the interaction of two larger problems: 1) providing for the overall financial needs of the elderly; and 2) developing a more efficient, equitable medical care system for Americans of all ages. Unless there is progress on these larger problems, Medicare reform is likely to be ineffective and ephemeral. If the political climate blocks such progress in the short term, those seeking to change Medicare should at least take cognizance of the larger picture, and, following the first rule of good medical practice, "do no harm." This paper discusses several current myths about Medicare, presents a framework for thinking about the larger problems, and offers a policy approach for the long run.

The crucial economic facts about old age are diminished earning power and increased utilization of medical care. Physiological changes are the primary cause of both lower earnings and increased use of medical care. Earnings are also affected adversely by obsolescence of skills and knowledge and by public and private policies that reduce the incentives of older persons to continue working and that increase the costs to employers of employing older workers. Economists could help future elderly pay for health care and other goods and services by focusing attention on artificial barriers to the employment of older workers and on policies that would increase saving before age 65.

Myths About Medicare

Understanding of the "Medicare problem" would be enhanced if the many myths about it could be dispelled. A discussion of three of the most misleading myths follows.

Myth 1. *The rapid growth in Medicare expenditures results primarily from demographic change*. It is true that the population over 65 is growing rapidly. Since 1980 the rate of increase has been 1.5 percent per annum, and it is expected to accelerate to 2.3 percent between 2000 and 2020. But the rate of growth of real per capita health care expenditures for each age-sex group over 65 has been much more rapid—over 4.0 percent per annum (Fuchs, forthcoming). Most of this growth reflects increases in the quantity and quality of medical care, increases largely associated with the introduction and diffusion of new medical technology (Fuchs, 1996). For example, a study of changes in the age-specific utilization of seven major surgical procedures between 1987 and 1995 revealed an average rate of increase of well over 10 percent per annum (Fuchs, 1999).[1]

Medical innovations have undoubtedly contributed to longer and/or better quality lives for many elderly patients; some innovations actually reduce expenditures. Even when the initial expectation is cost reduction, however, the long run effect is usually an increase in expenditures for several reasons. First, new applications are found for the technology, applications that were not contemplated when the technology was first developed and introduced into practice (e.g., lasers). Second, as physicians gain experience with the new technology, it becomes medically appropriate for older and sicker patients (e.g., open-heart surgery). Third, in the case of screening and diagnostic technologies, false positives can induce extensive expenditures on patients who receive no benefit from the interventions. Even true

[1]The procedures were: angioplasty, coronary artery bypass grafts, cardiac catheterization, carotid endarterectomy, hip replacement, knee replacement, and laminectomy.

positives can lead to greater expenditures as the tests become more sensitive and identify more patients to treat (e.g., PSA tests for prostate cancer). Finally, widespread diffusion of the technology can result in a higher incidence of expensive complications than was experienced in clinical trials carried out on selected patients in selected settings by selected physicians (e.g., carotid endarterectomy).

Myth 2. *The rate of increase of Medicare spending over the long run can be significantly slowed without reducing services to the elderly*. Health care expenditures, like those of any commodity, are identically equal to the product of price and quantity. This is equally true whether one looks at output ($P_s \times Q_s$) or at the resources used to produce the output ($P_r \times Q_r$). Because it is usually difficult to measure changes in the content of a physician visit or a hospital day over time, it is very difficult to distinguish between changes in the price or quantity of output. A more useful approach to the expenditures identity is to define it as the product of three terms

$$EXP \equiv P_r \times Q_r / Q_s \times Q_s.$$

This formulation makes it clear that there are only three possible ways to reduce expenditures: (1) reduce the prices paid to the labor, capital, and intermediate goods and services used in the production of medical care (P_r); (2) increase production efficiency (i.e., reduce Q_r/Q_s); or (3) reduce services (Q_s). Medicare has already used its monopsony power to cut payments to providers of care and could go farther in that direction, but elimination of any monopoly rents currently enjoyed by physicians, drug companies, or other suppliers can have only relatively small, one-time effects. For instance, the net income (after expenses) of physicians accounts for about 10 percent of total health care expenditures. Thus, a one-time reduction of 20 percent would reduce the growth rate of expenditures by only 0.1

percent per annum over the next 20 years. Cutting drug company profits in half would have an even smaller direct effect. The *indirect* effect on expenditures of lower drug profits would probably be much larger, by slowing the pace of medical advances (i.e., reducing Q_s).

Improving efficiency (i.e., using fewer resources to produce the same quantity of services) is always desirable, but Medicare already sets reimbursement rates for hospitals and physicians (the principal providers), thus providing considerable incentive for them to produce any given level of services with as few resources as possible. A broader definition of efficiency that includes elimination of unnecessary services and of services with low benefit/cost ratios would have a large effect on expenditures—but that is the point: a reduction in expenditures requires a reduction in services. It is relevant to note that while managed care for patients under age 65 achieved some short-term success in the early 1990's by squeezing providers and eliminating obvious inefficiencies, expenditure growth in the late 1990's resumed its upward trajectory.

If reducing prices paid to resources or cutting the quantity of resources offers little promise, the only way to cut expenditures over the long run is through reducing services. This could be a reasonable goal for policy; a great deal depends on which services are cut. For example, critics of American medical care assert that the fee-for-service system results in some patients getting care with *negative* expected benefits. The potential harm outweighs the potential good. For this to happen, patient ignorance is a necessary but not sufficient explanation. The physician must also be ignorant, or if not ignorant, must be venal and insulated from external constraints such as peer condemnation or malpractice suits. Even if such care exists, however, it is unlikely that its proportion of total care has increased over time, and therefore could not be an explanation for the rapid growth of health care

expenditures. If fee-for-service medicine is judged to be a serious problem, Medicare could change its method of reimbursement, as it already has for hospital care.

Much more problematic are services that have positive expected benefits, but the value of the benefit is less than its expected cost. Many services fall into this category; indeed, given widespread third-party payment unaccompanied by controls on supply, economic theory predicts exactly that outcome. Proposals to provide more generous benefits under Medicare would probably increase services in this category, and thus increase expenditures. Furthermore, because changes in medical technology are partly endogenous, increased insurance coverage fuels the development and diffusion of new drugs and procedures.[2]

Economists find it easy to say that the socially optimal amount of care is where marginal benefit equals marginal cost. Practicing physicians, however, find it much more difficult to determine where that optimum lies. Most medical interventions have never been rigorously evaluated from that perspective. Not only is it difficult to determine the optimal level for the average patient, but the marginal benefit as valued by patients with identical medical conditions may vary, depending upon their incomes and other factors. This poses an additional problem for analysis and policy.

[2]Countries with national health insurance typically rely on supply side constraints to keep expenditures under control. They limit construction of new facilities and modernization of old ones. They restrict the diffusion of new high-cost technologies such as magnetic resonance imaging devices and open-heart surgery teams. And many countries limit the number of specialists, who typically generate more expenditures than do primary care physicians.

Myth 3. *Means-testing Medicare benefits will not have adverse effects on incentives to work or save because most Medicare beneficiaries are out of the work force and are not savers*. This is a popular but short-sighted view. It ignores the likely effect of means testing of those over age 65 on the work and saving behavior of those under age 65. Any one measure, such as means-testing Medicare benefits, may not have a large effect, but when combined with means-tested tax rules for Social Security benefits, means testing for nursing home use, as well as income-related subsidies for food, housing, and other goods and services, many elderly will find that they face extremely high implicit marginal tax rates. It may be too late for them to make big changes in behavior,[3] but many younger Americans will anticipate the incentives and constraints that they will face after age 65 and will react in an individually reasonable[4] but socially undesirable manner. Rather than lose benefits and subsidies and pay extra taxes, many will work less and especially save less. It hardly seems prudent to create a "welfare" system for the elderly when the nation has recently decided to dismantle a system of welfare for younger adults which has had similar adverse consequences. Evidence that an implicit tax at time *t* can significantly affect saving in years prior to *t* can be found in studies of the relation between college financial aid and saving (see Edlin, 1993, Feldstein, 1995; Kim, 1995).

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[3]Although there is allegedly substantial "dis-savings" to qualify for Medicaid-paid nursing home care.

[4]Eric Engen, William Gale, and Cori Uccello (1999) argue that current savings patterns are consistent with optimal behavior from the individual perspective.

Who? What? How?

A useful way to think about the larger picture, including the "Medicare problem", is to measure the "full income" (or "full consumption") of the elderly and address three questions: 1) *Who* provides the money to finance their medical care and other consumption? 2) *What* is the money used for? 3) *How* is the money provided? I define "full income" as the sum of personal income and health care expenditures not paid from personal income. I apportion the latter equally to each individual $65, treating government expenditures as if they were an insurance policy. Data sources, adjustments, and assumptions are described in Appendix A. To simplify the calculations, I do not include in-kind transfers or other subsidies received by the elderly for items such as food, housing, and transportation, and I do not exclude taxes paid by the elderly.

Who provides for the financial needs of the elderly? The only possibilities are the population under age 65 or the elderly themselves. To determine how dependent are today's elderly on those under 65, I estimate the elderly's "full income" and decompose it into the share provided by those under 65 and the share attributable to self-provision by the elderly. For 1997, about half of the elderly's "full income" was provided by those under 65 and about half by the elderly themselves. Because the underlying data on personal income and health care expenditures are far from precise, and because numerous assumptions are required in order to allocate by source, these figures should be considered only approximations. They are valuable, nevertheless, because the most important policy questions concern *changes in these shares* over the next two or three decades.

The most critical decision about "what" is the allocation between health care and other goods and services. Public policy influences this allocation by the extent to which the transfers from those

under 65 are tied to health care, as under the Medicare and Medicaid programs. (Allocations *within* health care among different services are also influenced by the source of payment.) Using the data sources and assumptions described in Appendix A, I estimate that about 35 percent of the elderly's "full income" was allocated to health care in 1997, with Medicare paying only slightly more than one-half of that bill. Again, I emphasize that these are approximations, but I also again emphasize the importance of likely changes in these proportions, changes that are not particularly sensitive to possible errors in the estimated *levels* for 1997.

The key "how" decision concerns how much of the financing of "full income" is done *collectively* and how much *individually* (including family). This decision is related to but conceptually distinct from the question of the extent of inter-generational transfers. In theory, each generation could arrange collectively to provide for its own financial needs in retirement; the premium paid by the elderly to cover a portion of Medicare's Part B is an example of such an arrangement. Conversely, transfers to the elderly from those under 65 could be made individually, within families; throughout history that has been the usual arrangement. In recent times, however, most transfers from those under 65 have been provided collectively; the balance of "full income" has been arranged for by the elderly themselves. Collective provision almost always involves some compulsion (or heavy subsidies), and usually results in a more egalitarian distribution after age 65 than would result from purely individual provision.

The choice between collective and individual arrangements has implications for efficiency (discussed below) and for redistribution, both inter-generational and intra-generational. The redistributive objectives, however, could mostly be pursued through an appropriate combination of taxes and subsidies,

rather than being allowed to dominate the "how" question at the expense of efficiency.[5] Economists have a huge comparative advantage in analyzing the efficiency aspects of "how" and should, to the extent possible, try to separate their conclusions regarding efficiency from policy recommendations that incorporate their personal preferences regarding redistribution.

Consider, for instance, the problem of annuitization. Many older persons worry about outliving their wealth and would like to have at least some of it converted to an annuity. Similarly, most elderly want insurance to pay for health care. Indeed, the demand for insurance is so strong that many elderly buy "first dollar" supplemental insurance policies with their own after-tax dollars. Free markets for annuities and health insurance, however, suffer from the problem of adverse selection. The ability of individuals to predict both their longevity and their health care utilization is significantly greater than could be expected from chance, and this is true even after controlling for other predictors such as socioeconomic status and disease conditions (Hurd and McGarry, 1997). Thus, if the sellers of health insurance or annuities set prices based on the experience of the entire population, they are likely to find that the health insurance buyers have above-average utilization and the annuity buyers have above-average life expectancy. This potential adverse selection is an important reason why free markets for annuities or for health insurance are not likely to function as efficiently as they do for other commodities that do not share this characteristic.

Asymmetrical information, however, is only one of the factors affecting efficiency. The costs

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[5]The situation is similar to that explored by Antonio Rangel (1999), who has shown that every plan to improve Social Security by having the federal government or individual participants reduce holdings of U.S. bonds and increase holdings of equities is primarily a method of redistribution that can be achieved by a combination of taxes and subsidies. See also Kotlikoff (1993) and Geanakoplos, Mitchell and Zeldes (1998).

imposed by moral hazard also need to be considered. The connection between insurance and overutilization of medical care is well understood and well documented (Newhouse, 1992). The moral hazard associated with means-testing benefits and subsidies for the elderly is less widely appreciated, but both theory and experience suggest that high (implicit) marginal tax rates on income after age 65 affect incentives to work and save prior to that age. Moral hazard problems may also arise if individuals are allowed to control their own retirement investments with an implicit or explicit government guarantee for those with poor results. If the government offered such a guarantee, more individuals would likely pursue investments with high risk (and high potential return), much as the insured depositors in savings and loan institutions did in the 1970s and 1980s. Despite regulation, the S&L institutions in turn pursued ever riskier loans in order to offer depositors higher returns. The results were disastrous. Similarly, without compulsory annuitization, some elderly may lose their wealth in risky investments, or consume it prematurely, thus placing an additional burden on transfers from the young.

In addition to considering problems of adverse selection and moral hazard, economic analyses of efficiency need to estimate the administrative costs associated with alternative approaches to providing annuity, health insurance, and investment opportunities for the elderly.

Sources and Uses of "Full Income"

My estimates of the sources and uses of the elderly's "full income" in 1997 are summarized in Table 1. The details of the estimation procedures are in Appendix A. Table 1 shows that transfers from the young to the elderly play a much larger relative role for health care than for other goods and

services. This fact, combined with the tendency for health care expenditures to grow more rapidly than other expenditures, will pose major problems for policy makers and for the elderly within two decades. For instance, suppose that the elderly's health care expenditures grow 3 percent per annum more rapidly than the balance of their "full income" (roughly the experience of recent decades). By 2020, health care's share of "full income" would jump from 35 to 52 percent. If the generations under age 65 continue to bear the same share of health care and "other" as in 1997, their total share of "full income" must rise.[6] If on the other hand, their share of the total remains constant, the elderly must assume a larger share of both health care and other expenditures.

There are three possible responses to the crisis implicit in the projections for 2020. First, some policy analysts think that the solution is to slow the rate of growth of health care expenditures, but that may not be desirable or feasible. It may not be desirable because many medical advances help the elderly live longer, better quality lives, and some health economists assert that the benefits exceed the costs. It may not be feasible because the insured elderly want all the care that might do them some good and an army of drug companies, equipment and device manufacturers, hospitals, and physicians are eager to supply that care.

Second, the problem could be solved by higher taxes on the young. But such tax hikes seem highly unlikely. They will have to come on top of new taxes required to support a projected increase of 25 percent in the ratio of elderly to the under-65 population. Thus, there will be little prospect of levying still additional taxes to pay for technology-induced increases in age-specific health care expenditures.

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[6]Laurence Kotlikoff (1992) explored how growth in Medicare expenditures will differentially affect each generation already alive and generations not yet born.

The third possible response is for the elderly to provide more of their own income by increases in work and saving. If they do not, future elderly will be under great financial pressure. Many already are. Consider the situation of the one-third of the elderly in 1997 with the lowest incomes. Estimates of their sources and uses of "full income," shown in Table 2, reveal that they are dependent on transfers from the young for over 90 percent of their "full income" and that more than half is spent on health care.[7]

Thus, while eligible for MRIs, angiograms, by-pass surgery, and other high-tech diagnostic and surgical interventions, many low-income elderly must make hard choices between uncovered health care (such as drugs) and an adequate diet. Two out of three elderly have two or more chronic health problems such as arthritis, diabetes, heart disease, and dementia. Many individuals do not have the resources to purchase a comfortable mattress, a warmer house in winter, a taxi ride to the doctor, or other goods and services that would make life more bearable. To prevent more and more elderly becoming "health care poor," they must have additional personal income. This will require more work both before and after age 65 *and* more income from savings (i.e., pensions and investments). But an increase in dependence on employment and savings income is likely to result in greater inequality among the elderly, especially if saving is purely voluntary. To avoid real hardship for millions of elderly, some of the increase in saving would probably have to be compulsory because so many do little or no voluntary saving now.

Why do millions of Americans reach age 65 so heavily dependent on transfers from succeeding generations? One possibility is that their income over the life cycle was so low that they could barely

[7]Sources and methods are the same as for Table 1, with the additional assumption that non-government expenditures for health care are proportional to personal income.

meet everyday expenses, let alone save for retirement. This explanation is undoubtedly correct for some low income elderly, but analyses of longitudinal data by S. F. Venti and D. A. Wise (1998) show that inequality in savings for retirement varies greatly even among those with the same earnings prior to retirement. This conclusion holds after adjustment for special factors that affect the ability to save and for differences in investment returns. I reached a similar conclusion by observing that inequality in income from pensions and investments at ages 65-69 in 1995 was many times larger than the inequality in employment income of the same cohort in 1985 (ages 55-59) and 1975 (ages 45-49) (Fuchs, 1999). Judging by the behavior of their peers, it seems that most low income elderly could have saved more prior to age 65.

Additional support for this view comes from my analysis of the relation between social security income and savings income (pensions, interest, dividends, and rent). I first sorted the elderly into deciles based on their social security income, an ordering which is probably similar to one based on life-time earnings. Within each decile I sorted by savings income and identified the 25th, 50th, and 75th percentiles. The results, shown in Figure 1, reveal that while savings income tends to be positively correlated with social security income, there is great variation in savings income within each decile. There are large numbers of elderly in the lower deciles with substantial savings income (e.g., in the second decile 25 percent have more than $3,000 of savings income), while in the higher deciles many elderly have very little savings income (e.g., in the ninth decile 25 percent have less than $1250).[8]

When the procedure is reversed—that is, when the elderly are sorted into deciles by savings

[8]I did not adjust the CPS data for under reporting in this case because only a single estimate of under reporting is available for each source of income. Such an adjustment would widen absolute differences within and across deciles but leave relative differences unchanged.

income and within each decile by social security income—the picture is entirely different, *but the conclusion is the same.* Figure 2 shows that individuals in the higher savings income deciles do not have social security income markedly different from those in the lower deciles. Indeed, even in the lowest savings income decile, at least half of the elderly had social security income which is higher than the lowest 25 percent in all the savings income deciles.

Policy makers concerned about the financial well-being of the elderly should consider the implications of these results. It is clearly possible for most elderly to save a modest percentage of their earnings during their lifetime, but many do not. This suggests that a compulsory savings program could reduce the extreme dependence of millions of elderly on succeeding generations and put them in a better position to pay for their own health care and other consumption.

Conclusion

The rapid growth of per capita health care expenditures is the driving force behind the financial problems of the elderly and *a fortiori* behind the "Medicare problem." Most of the expenditure growth results from medical innovations, many of which help the elderly lead longer, better quality lives. If the pace of medical innovation does not slow, the elderly will become increasingly dependent on transfers from the young unless there are major legislative and behavioral changes.

If the generations under age 65 are unwilling or unable to provide for an ever- greater proportion of the elderly's financial needs, the elderly will have to provide more for themselves by working more both before and after age 65 *and* by saving a larger fraction of their pre-retirement income. To increase work, public policies that currently discourage employment of older workers

would have to be changed. To increase pre-retirement saving, some compulsion would be necessary, especially to prevent mounting income inequality after age 65.

Financing health care (including Medicare) is an inextricable part of the overall financial problem of the elderly. To achieve an efficient, equitable solution, I suggest a two-pronged approach that encompasses income and medical care. Income would be derived from three layers: First, every older person would receive the same basic pension, financed by general revenue. This pension would be approximately equal to the social security benefit currently available to a low-wage worker. The second layer would be annuity income coming from an individual savings-investment account created by compulsory contribution of a percentage of earnings. For the average worker, a contribution of as little as two or three percent of earnings over a period of 35 or more years would result in a significant addition to the basic pension at retirement. Voluntary, unsubsidized, individually controlled savings and investment would provide the third layer of income.

Medical care finance would be based on two layers: First, every individual would be covered by an egalitarian basic plan financed by a broad-based earmarked tax. This plan would not be a "safety net" for the poor, but one that would provide most people with most of their care, most of the time. Second, there would be multiple options for those willing and able to buy more care with their own after-tax dollars (Fuchs, 1994). This approach would assure a minimum standard of living and basic medical care to every older person while maintaining the incentives to work and save that are essential for the economy to grow and prosper.

References

1. CPS Utilities. 1999. March CPS Utilities, 1962-1998, Version 3.3.2. (Current Population Surveys, March 1962-1998 [machine-readable data files]/conducted by the Bureau of the Census for the Bureau of Labor Statistics. Washington: Bureau of the Census [producer and distributor]). Or: Unicon Research Corporation, 1640 Fifth Street, Santa Monica, CA 90401; 1-310/393-4636 for distribution of CPS Utilities.
2. Edlin, Aaron S. 1993. "Is College Financial Aid Equitable and Efficient?" *Journal of Economic Perspectives*, 12:1 (Spring), pp. 143-158.
3. Engen, Eric, Gale, William, and Vecello, Cori E. 1999. "The Adequacy of Household Saving," presented at the Brookings Panel on Economic Activity, September 2-3, 1999.
4. Feldstein, Martin. 1995. "College Scholarship Rules and Private Saving," *American Economic Review*, 85(3), 552-566.
5. Fuchs, Victor R. Forthcoming. "Provide, Provide: The Economics of Aging," in Thomas R. Saving and Andrew Rattenmaier (eds.), *Medicare Reform: Issues and Answers* (Chicago: University of Chicago Press). Available as NBER Working Paper No. 6642.
6. Fuchs, Victor R. 1999. "Health Care for the Elderly: How Much? Who Will Pay for It?" *Health Affairs*, 18:1, pp. 11-21.
7. Fuchs, Victor R. 1996. "Economics, Values, and Health Care Reform," *The American Economic Review*, 86:1, pp. 11-24.
8. Fuchs, Victor R. 1994. "Health System Reform: A Different Approach," *Journal of the American Medical Association* 272:7, pp. 560-63.
9. Geanakoplos, John, Mitchell, Olivia S., and Zeldes, Stephen P. 1998. "Social Security

Money's Worth." National Bureau of Economic Research, Working Paper 6722.

10. Hurd, Michael D., and McCarry, Kathleen. 1997. "The Predictive Validity of Subjective Probabilities of Survival." Mimeo.

11. Kim, Taejong. 1995. "Implicit Taxes in College Financial Aid and Family Saving." M.I.T. mimeo.

12. Kotlikoff, Laurence J. 1993. "From Deficit Delusion to the Fiscal Balance Rule: Looking for a Sensible Way to Measure Fiscal Policy," *Journal of Economics* (suppl.) 7, pp. 17-41.

13. Kotlikoff, Laurence J. 1992. *Generational Accounting*. New York: The Free Press (paperback edition 1993, pp. 206-14).

14. Newhouse, Joseph P., and the Insurance Experiment Group. 1993. *Free for All? Lessons from the RAND Health Insurance Experiment*. Cambridge: Harvard University Press.

15. Olin, Gary L. 1999 (unpublished). *Health & Health Care of the Medicare Population: Data from the 1996 Medicare Current Beneficiary Survey*. Rockville, MD: Westat.

16. Rangel, Antonio. 1999. "Transfers and Equity Investments by Governments: A Fundamental Equivalence Result." Mimeo. Stanford University.

17. Roemer, Marc I. 1999. "Reconciling March CPS Money Income with The National Income and Product Accounts: An Evaluation of CPS Quality." Bureau of the Census, paper presented at the American Statistical Association's Joint Statistical Meetings, Baltimore, Maryland, August 10, 1999.

18. Venti, S. F., and Wise, David A. 1998. "The Cause of Wealth Dispersion at Retirement: Choice or Chance?" *American Economic Review*, May, pp. 185-91.

Table 1

Americans 65 and Over in 1997, Sources and Uses of Their "Full Income"*

(percent distribution)

	Sources		
Uses	Under age 65	Age 65 and over	Total
Health care	27	8	35
Other	29	36	65
Total	56	44	100**

*"Full Income" is the sum of money income plus the dollar value of health care expenditures (excluding the portion paid for by the elderly). For details of estimation, see Appendix A.

**"Full income" is approximately $28,800 per person.

Table 2

One-third of Americans 65 and Over with the Lowest Personal Income in 1997, Sources and Uses of Their "Full Income"*

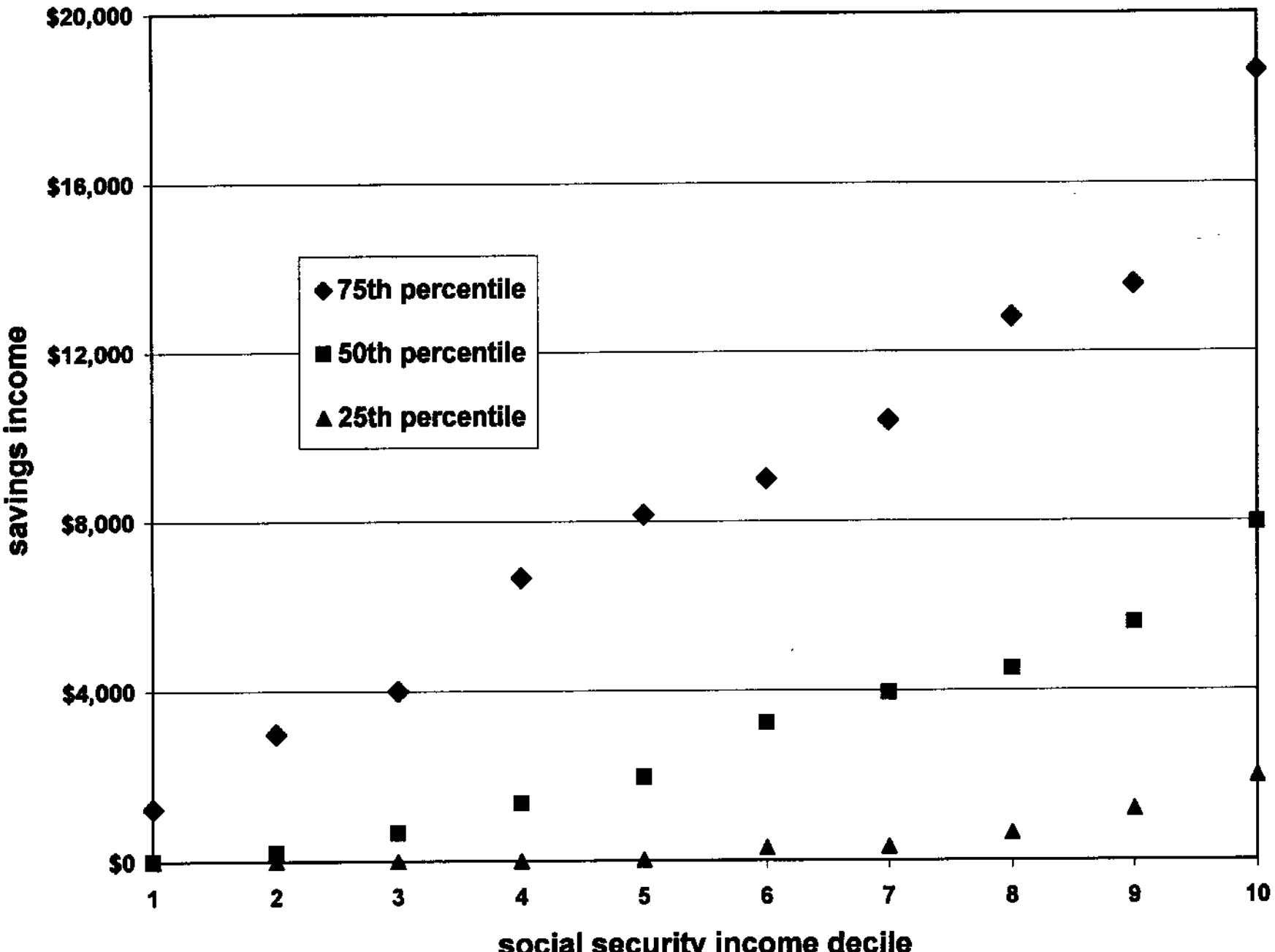
(percent distribution)

	Sources		
Uses	Under age 65	Age 65 and over	Total
Health care	51	3	54
Other	41	5	46
Total	92	8	100**

*"Full Income" is the sum of money income plus the dollar value of health care expenditures (excluding the portion paid for by the elderly). For details of estimation, see Appendix A.

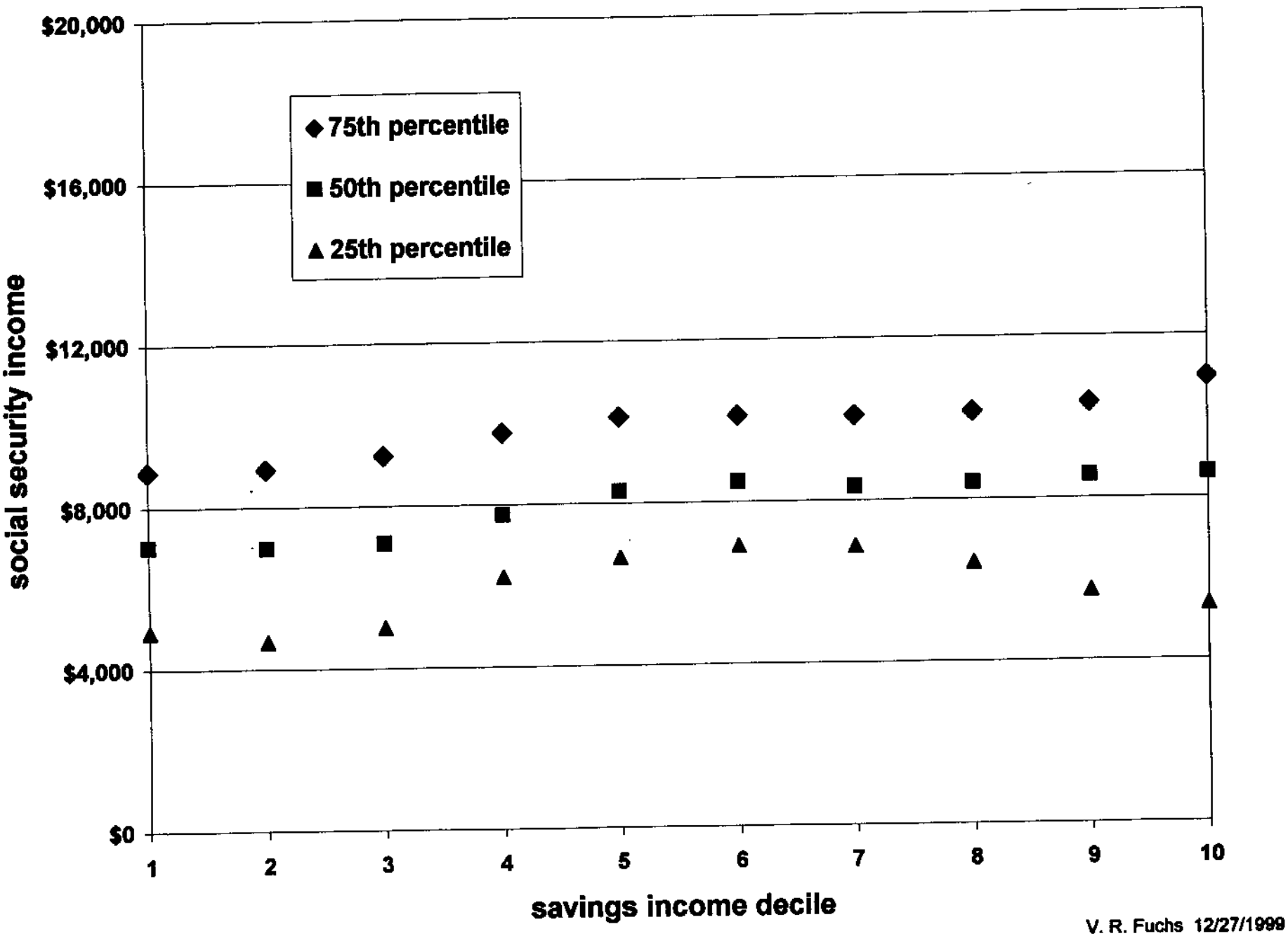
**"Full income" is approximately $14,250 per person.

FIGURE 1. SAVINGS INCOME BY SOCIAL SECURITY INCOME DECILE
AMERICANS AGES 65 AND OVER, 1997



V/ R. Fuchs 12/27/1999

FIGURE 2. SOCIAL SECURITY INCOME BY SAVINGS INCOME DECILE
AMERICANS AGES 65 AND OVER, 1997



Appendix A.

Estimation of sources and uses of "full income"

"Full income" is defined as the sum of personal income and health care expenditures not paid for out of personal income. Per capita personal income of the population 65 and over is estimated from the Current Population Survey, March 1998, covering the calendar year 1997 (CPS Utilities, 1999). Income estimates are based on persons 65 and over living alone or in households with no one under age 65. (Inclusion of such households would not significantly change average per capita income, but would complicate the problem of identifying the sources of income by age.) Within each household, total personal income is divided equally among all members of the household. Because the CPS income understates personal income and the understatement is disproportionate by source of income, I adjust each source of income using the latest (1996) unpublished Census Bureau estimates (for all ages) of the percent under-reported by source (Roemer, 1999). Average income for those 65 and over is increased by 21 percent as a result of the under-reporting adjustments. The distribution of income by source also changes because the adjustment for under-reporting increases the incomes from pensions and investments by 31 and 38 percent, respectively, while incomes from Social Security retirement and employment increase by 9 and 4 percent, respectively.

Personal health care expenditures of the elderly are estimated from unpublished data of the Medicare Current Beneficiary Survey (MCBS) for 1996 (Olin, 1999); I updated to 1997 based on extrapolation of trends in Medicare reimbursement. Estimates of the source of payment for the elderly's medical care also come from the MCBS for 1996. I increase the MCBS data by 5 percent to adjust for

under-reporting by households of health care expenditures not paid for by Medicare, Medicaid, or other government programs. I treat government health care expenditures as if they were an insurance policy provided to each individual over 65 with a value equal to average expenditures.

Income from employment, pensions, and investments is assumed to be provided by the elderly themselves. Other income, such as Social Security retirement and other cash transfers, is assumed to be provided by those under age 65, as are government health care expenditures.

The estimates of sources and uses of full income for the one-third of the over-65 population with the lowest personal income follow the same methods as for all over-65, with the additional assumption that spending for health care out of personal income is proportional to personal income. Health care expenditures covered by employer-provided insurance are reduced by 55 percent under the assumption that the low-income elderly are much less likely to have such coverage.

The key variables for the population $65 are:

P = personal income = T + S

T = cash transfers from those < 65

S = income from employment, pensions, and investments

H = health care expenditures = G + F + E

G = government health care expenditures

F = health care expenditures from personal income

E = health care expenditures from employer-provided insurance

C = "full income" = P + (H - F)

O = "other expenditures" = C - H = P - F

Y = total transfers from < 65 = G + T

A = portion of full income from $ 65 = C - Y

B = # 65 as source of health care expenditures from personal income (assumed to be) F(T/P)

D = $ 65 as source of health care expenditures from personal income (assumed to be) F(S/P)

K = < 65 as source of other expenditures = T - B

L = $ 65 as source of other expenditures = S - D

Estimated dollar values of the key variables for 1997 are:

Variable	All	Lowest third of personal income
P	21,985	7,738
T	9,789	6,866
S	12,195	872
H	9,941	7,615
G	6,268	6,268
F	3,118	1,097
E	555	250
C	28,808	14,256
O	18,867	6,641
Y	16,057	13,134
A	12,751	1,122
B	1,388	973
D	1,730	124
K	8,401	5,893
L	10,466	748