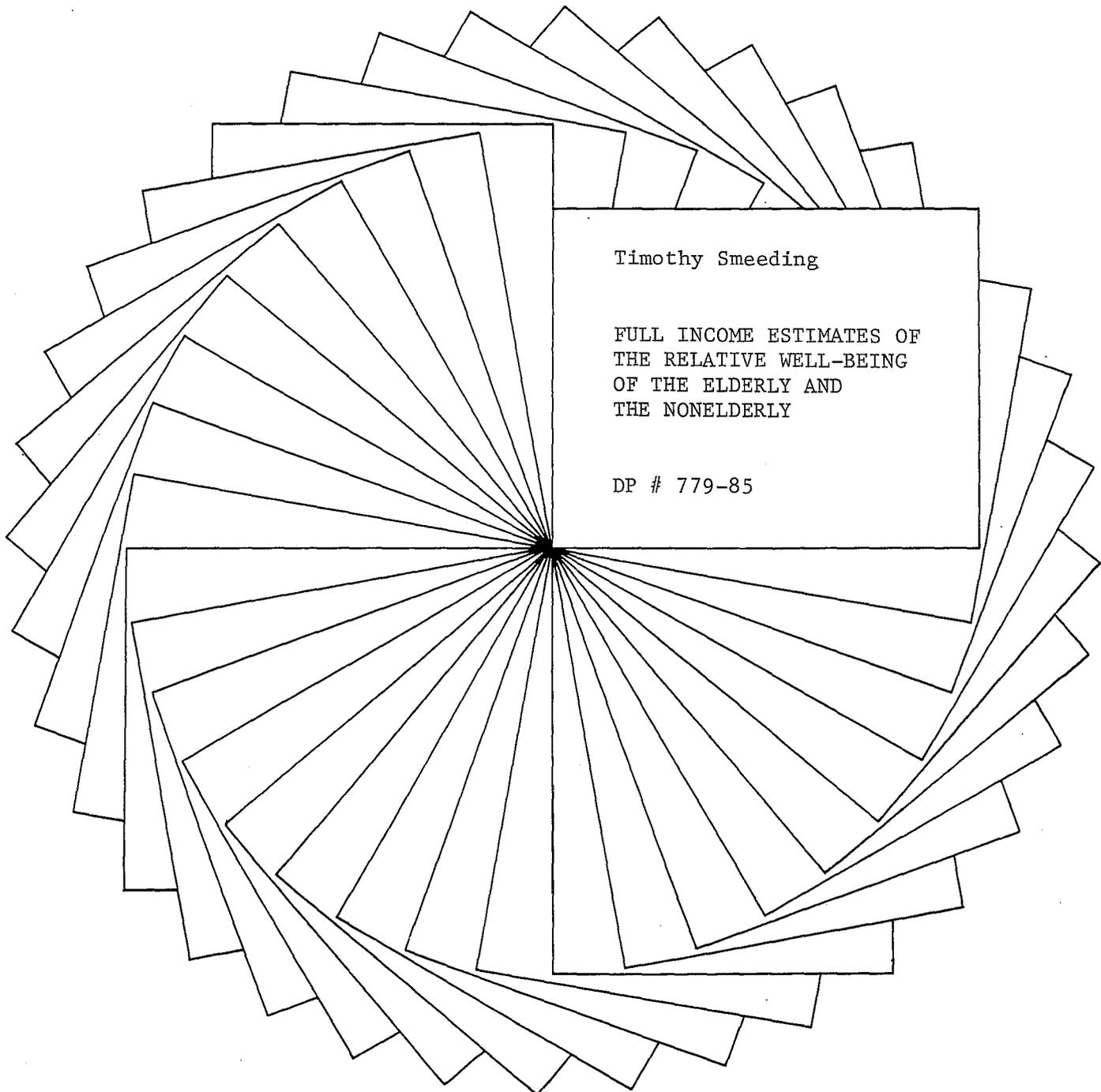

IRP Discussion Papers



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FULL INCOME ESTIMATES OF
THE RELATIVE WELL-BEING
OF THE ELDERLY AND
THE NONELDERLY

DP # 779-85

Institute for Research on Poverty
Discussion Paper No. 779-85

Full Income Estimates of the Relative Well-Being
of the Elderly and the Nonelderly

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September 1985

This research was supported in part by a contract to the Institute for Research on Poverty from the U.S. Department of Health and Human Services, and in part by the Division of Social Science Research (DSSR) at the University of Utah. Work on the database underlying this article was begun while the author was an American Statistical Association (ASA) Research Fellow at the U.S. Bureau of the Census. The views expressed in this paper are those of the author and do not necessarily reflect the views of DHHS, DSSR, ASA, the University of Utah, the U.S. Bureau of the Census, or the Institute for Research on Poverty. The author would like to especially thank John Coder and Michael Hansen, and also Rosalie Webb, Jolaine Randall, and David Huth for their assistance, and Daniel Weinberg, Dan Radner, Susan Grad, Sheldon Danziger, and a National Academy of Sciences Workshop for comments. Any remaining errors of theory, fact, or fancy are those of the author.

Abstract

The purpose of this paper is to account for the effect of all major forms of nonmoney income on the after-tax, cash income position of the elderly relative to the nonelderly in 1979. Values are derived for in-kind health benefits, food and housing transfers, employment-related benefits, and implicit rent for owner-occupants. Adjustments are also made to account for income underreporting, recipient valuation of in-kind income, and differences in relative need as measured by household adult equivalence scales.

The results of these manipulations and adjustments indicate that on average the elderly were better off in real income terms than were the nonelderly in 1979. And, while income inequality among the elderly is larger than among the nonelderly, the net effect of direct taxes and noncash income is to reduce inequality within both groups. The policy implications of these findings are briefly mentioned in closing.

I. Introduction

Comparisons of the relative incomes of the elderly and non-elderly have become quite popular, and are numerous. By some measures the elderly are quite well off compared to the rest of us; see, for example, Danziger et al. (1984), Hurd and Shoven (1982, 1985). Others are either less sure of the outcome (Quinn, 1984) or argue that in fact the elderly are not quite so well off (e.g. see Grad, 1983; Radner, 1984). This paper sheds additional light on this topic by presenting several full income measures of economic well-being and its distribution for the population as a whole and for both groups in 1979. In addition to money income and direct taxes, our measures of full income include virtually all major types of cash and noncash income, including housing, food, and insurance (health, life, accident) income in kind, whether mediated by governments as in-kind transfers or by employers or unions as employment-related fringe benefits. Direct taxes and legally required contributions by both employers and employees are also counted. While much speculation about the net effect of both in-kind transfers and employment-related benefits on the income distribution has been made, this paper is the first to actually make such a comparison using income microdata.

Section II reviews these income components and their importance. While full income measures of well-being are advantageous for comparing the elderly to the nonelderly, they present several

problems to the researcher, such as valuation of income in kind, life-cycle influences related to health and asset accumulation, and income underreporting. Moreover, the standard problems of accounting for differences in relative household size and income needs of the elderly vs. the nonelderly need to be taken into account. Section III of the paper presents several measures of adjusted income for both groups while suggesting the pros and cons of each type of adjustment.

In addition to the resulting relative levels of income for the elderly and nonelderly, which are reported in Section IV, the issue of how that income is distributed among each group of the population is of some importance. Comparisons of relative income inequality between these groups are made in Section V. Section VI of the paper summarizes our results, and concludes report with a brief discussion of the policy implications of our findings.

II. The Sources and Importance of Nonmoney Income to the Elderly and Nonelderly

The existing studies of the impact of nonmoney income on the elderly and nonelderly are either based on ten-year-old (Danziger et al., 1984) or twenty-year-old (Moon, 1977) data sources, or do not sufficiently capture the complex distributive nature of nonmoney income among these groups (Hurd and Shoven, 1982, 1985). None of the existing studies capture all of the major¹ sources of nonmoney income or their distributive importance. Between 1970 and 1979 alone, constant (1982) dollar in-kind transfers from Medicare,

Medicaid, veteran's health care, food stamps, school lunch, and public housing more than doubled. By 1983 these benefits reached \$106.0 billion (U.S. Bureau of the Census, 1984), almost three times their 1970 level of \$38.9 billion. While these transfer benefits, particularly health care and housing, disproportionately favor the elderly, their nonelderly counterparts--employment-related fringe benefits--need also to be valued. Discretionary employee benefits in the form of pensions and insurance alone grew from 5.2 percent of wages and salaries in 1966 to 10.5 percent in 1979 (Smeeding, 1983). Legally required employer contributions in the form of payments for federal employee retirement, social security (OASDHI), unemployment insurance, and workers' compensation grew from 5.7 to 9.1 percent of wages and salaries over this same period. Counting all of these forms of supplements to wages and salaries, total compensation rose from 110.9 to 119.6 percent of earnings between 1966 and 1979 (Smeeding, 1983). While several analysts have argued that both forms of noncash income need to be taken into account in comparing relative well-being of the elderly and the nonelderly, and in assessing the net impact of income in kind on the income distribution, this paper is the first actually to do so in a comprehensive manner.

Over and above public income transfer benefits in kind and employee benefits, households receive other important types of noncash income in the form of private sector housing benefits. Both elderly

and nonelderly homeowners who purchased their residences before (or during) the rapid increase in housing prices of the 1970s, particularly middle-aged and older families, receive substantial implicit rent (the amount they save by owning rather than paying market rent) on their owned homes. In 1979, an average annual net implicit rent of \$980 was received by over 29.3 million owner-occupiers, almost 55 percent of all homeowners. Finally, about 5 percent of nonelderly renters and about 10 percent of all elderly renters, over 1.4 million households in total, live in a housing unit for which they pay no cash rent, thus being liable only for utility bills at most. We also take account of this form of nonmoney income.

Table 1 indicates the aggregate market values² of nonmoney income in the form of in-kind transfers, employment-related benefits, and housing income in kind for both elderly³ and nonelderly households in 1979, as compared to their money income and direct taxes. Census money income is the normal measure of income used to analyze the economic status of households (e.g. see Quinn, 1984; Grad, 1983). But it overstates their well-being by the \$317.3 billion that they pay in federal and state income taxes and employee payroll taxes.⁴ The census money income measure also omits \$296.1 billion in total noncash income, 19.4 percent of money income, including legally required benefits.

Table 1

Aggregate Value (Billions) of Cash and Noncash Income and Taxes Paid,
Elderly and Nonelderly Households in 1979

<u>Income Type</u>	<u>Elderly</u> ¹⁰	<u>Nonelderly</u>	<u>Total</u>
A. <u>In-Kind Transfers</u>	\$23.0	\$23.1	\$46.1
Medical Benefits ¹	21.7	14.7	36.4
Food Benefits ²	.4	6.9	7.3
Housing Benefits ³	.9	1.5	2.4
B. <u>Employment-Related Benefits</u>	\$7.9	\$211.3	\$219.2
Discretionary Contributions	4.0	117.5	121.5
(Pensions ⁴)	(2.1)	(61.5)	(63.6)
(Health Insurance ⁵)	(1.5)	(45.5)	(47.0)
(Other Insurance ⁶)	(.4)	(10.5)	(10.9)
Legally Required Contributions ⁷	3.9	93.8	97.7
C. <u>Private Housing Income In Kind</u> ⁸	\$11.6	\$19.2	\$30.8
Rent-Free Housing	.5	1.2	1.7
Implicit Rent	11.1	18.0	29.1
D. <u>Total Noncash Income (A+B+C)</u>	\$42.5	\$253.6	\$296.1
(Per Household)	(\$2529)	(\$4009)	(\$3729)
As a Percent of Money Income	23.7%	18.8%	19.4%
E. <u>Direct Taxes</u> ⁹	\$17.4	\$299.9	\$317.3
(Per Household)	(1086)	(4741)	(3997)
As a Percent of Money Income	9.7%	22.2%	20.7%
F. <u>Total Census Money Income</u>	\$179.1	\$1350.8	1529.9
(Per Household)	(11,074)	(21,360)	(19,268)

Source: Author's tabulations from augmented March 1980 Current Population Survey. See U.S. Bureau of the Census (1982), Smeeding (1983a, 1984b) and text for details.

¹Medical benefits include the market value of Medicare, Medicaid, and Veterans' health benefits excluding institutional care.

²Food benefits include the market value of food stamps and free or reduced-price school lunch.

³Housing benefits include publicly owned or subsidized rental housing.

⁴Pensions include employer contributions for private and public sector employee pension and retirement plans, and for savings and thrift plans.

(Table 1 Continued)

⁵Health insurance includes employer or union contributions for private and public sector employee group health plans.

⁶Other insurance includes employer or union contributions for private and public employee life, sickness or accident, and private disability insurance plans.

⁷Legally required contributions include nondiscretionary employer or union contributions for social security, railroad retirement, unemployment insurance, workers' compensation, and other minor mandatory contributions.

⁸Housing income in kind includes those living rent-free in unowned private housing units and the net implicit rental value of owner-occupied homes.

⁹Direct taxes include employee payroll taxes and federal and state income taxes.

¹⁰Elderly households are those with a householder age 65 or older.

The majority of this income takes the form of employment-related benefits (\$219.2 billion), followed by in-kind transfers (\$46.1 billion), and finally by private housing income in kind (\$30.8 billion). Omitting legally required payroll taxes and contributions for OASDHI, discretionary employment-related benefits alone are \$121.5 billion. The derivation and imputation procedures by which we arrive at these estimates and distribute their value across households are summarized in the Appendix.

The only major forms of economic income not counted in this analysis are realized and unrealized capital gains on stock, business inventories, farm and nonfarm real estate, and some employee perks. Based on estimates for 1980 by Pechman (1985) and by the U.S. Senate Committee on the Budget (1982), total capital gains were about 13.0 percent of income in 1979, with about 10.0 percent unrealized and 3.0 percent realized of this total amount.⁵ Based on realized interest, dividends, and other property income reported on the Current Population Survey (CPS), and based on Senate Budget Committee estimates of the value of realized capital gains on own homes for persons aged 55 and over which were excluded from tax, the omission of this income is likely to bias the results by understating the income of the elderly and the rich by more than that of the nonelderly and the nonrich. Radner (1983) indicates that the property incomes of the elderly were 31 percent of their census money incomes in 1972, once adjustments for underreporting were made, as

compared to 7 percent of incomes for the nonelderly. While accrued but unrealized gains on pension fund investments are likely to favor the nonelderly, the net effect of this omission is to exert a downward bias on the ratio of the incomes of the elderly to the nonelderly. Because property incomes accrue mainly to those in the upper tail of the income distribution, our measures of income inequality for both the elderly and the nonelderly will be understated. Income in kind from employment-related perks which are not estimated here, such as the private use of company cars and the consumption portion of travel and entertainment, benefit the nonelderly rich and are discussed in the next section of the paper.

III. Measuring Income and Well-Being

For quite some time census money income has been the standard reference point by which the elderly and the nonelderly have been compared (e.g. Grad, 1983; Quinn, 1984; Radner, 1984). While this measure has now been available for over 25 years, thus providing a substantial time series, it is a less than adequate measure of well-being for our purposes. In particular, direct taxes, income in kind, and differences in size and composition of household units are not usually taken into account when making comparisons between elderly and nonelderly households. Additional issues that need to be discussed involve the underreporting of money and nonmoney income

on the CPS, the recipient valuation of noncash income, life-cycle or age influences on income measures, and period effects. We will deal with each of these in turn. But first, further definitional items need to be taken care of.

As with all such studies, a (comparative or distributional) analysis of well-being involves choosing a time period, the 1979 calendar year; a unit of analysis, the household;⁶ a population across which income is measured, the noninstitutionalized "elderly" and "nonelderly"; in addition to some definitions of well-being. Although it may at first seem obvious, upon considerable reflection the appropriate population for measuring the level and distribution of income among the "elderly" as compared to the "nonelderly" is not intuitively apparent. Force of habit, or perhaps more appropriately "comparability with other similar studies," such as those of the U.S. Bureau of the Census (1981), Danziger et al. and Hurd and Shoven, lead us to concentrate on households headed by a person aged 65 or older as "elderly" household units. The nonelderly are thus defined as the remainder. These definitions produce a group of 16.15 million elderly households containing 27.86 million persons, and a group of 63.25 million "nonelderly" units comprising 190.11 million persons for 1979. Altogether our universe consists of 79.40 million households and 217.97 million persons.

Measures of Income. We focus upon six income definitions:

1. Traditional "census (money) income," including private and public cash transfers in addition to earnings, property income, and all forms of employer pensions received by ex-employees or their survivors.
2. After-tax money income, or "disposable (cash) income," which subtracts federal and state income and payroll taxes from census income using a tax simulation model developed by the U.S. Bureau of the Census (1983b).
3. "Public income," including disposable income plus the market value of public in-kind transfers: Medicare, Medicaid, and veterans' health benefits; food stamps and school lunch; and public housing subsidies.
4. "Public and insurance income" adds discretionary employment-related benefits--pension contributions and insurance income, valued at their cost to the employer--to public income.
5. "Total income 1" adds private housing income ~~in kind--~~the market value of implicit rent and rent free housing--to public and insurance income.
6. "Total Income 2" adds legally required employer contributions for social insurance and mandatory employee contributions (payroll taxes) to total income 1.

Several comments need to be made about these choices.

Disposable income represents the private market purchasing power of money income after federal and state income and payroll taxes are subtracted. While property taxes for homeowners were not subtracted from income owing to doubts about the incidence of such taxes and owing to lack of data on "circuit breakers" (property tax relief) for elderly and low-income owners, they are treated as a cost of owning in determining implicit rental value. Thus, while not subtracted as direct taxes, property taxes do have some effect on the total value of the total income measures of well-being.

Employee contributions to social security and to the federal employee retirement income fund are treated as taxes in income definitions 2-5. But, in total income 2, the last income measure, they are added in, along with employer contributions to retirement and other social insurance plans, as having some positive value to the contributor (or to the person on whose behalf the employer makes such a contribution). This treatment of social insurance contributions is discussed below.

Noncash income in the form of direct medical care, food, and housing transfers--valued at their cost to the government--are added to disposable income to arrive at public income. Only institutional health care benefits for Medicaid and Veterans Administration health care coverees are not counted. A large portion of these benefits constitute food and housing--i.e., hotel services--not medical care

benefits per se. Moreover, to qualify for Medicaid institutional care one must forfeit virtually all other forms of cash and noncash income, thus implicitly taxing other forms of income already counted in public income. To add them directly would be to double count. Medicare institutional benefits, roughly two percent of total Medicare benefits, are counted here because they generally act as short-term substitutes for hospitalization and because they do not require penury as a condition of receipt. The issue of counting these benefits at something other than their market value (or government cost) is treated below.

The elderly receive just about half of the aggregate market value of in-kind transfers, boosting their income far more than the incomes of the nonelderly. In order to fairly evaluate subsidies for medical care and for other forms of insurance, several analysts have argued for inclusion of employer subsidies for discretionary health and health-related insurance benefits as well (Quinn, 1984; U.S. Bureau of the Census, 1982). Public and insurance income adds these employment-related subsidies and the cost of discretionary employment-related pension contributions to public income. The tax advantages to these benefits are not directly counted as subsidies, only the direct dollar cost to the provider (the employer or union) over and above any related employee contribution (which is already counted in pretax census income). The income tax advantages of these benefits are implicitly accounted for in calculating the difference between census income and disposable income.

While treating employment-related insurance subsidies as income is perfectly consistent with counting insurance-related in-kind transfers, employer-provided food (e.g. expense account living) or housing subsidies are not counted. Nor are employer subsidies for nonbusiness (personal) travel and entertainment. While employer-subsidized meals truly add to well-being by reducing own food outlays, the housing component of employer-related travel does not typically reduce own private housing costs. Thus this housing portion of subsidized travel outlays probably does not make one substantially better off. On the other hand, employer-provided housing of a permanent variety (e.g. the private sector equivalent of military barracks or Stanford University faculty housing) does add to well-being by reducing own housing costs below market value and should thus be counted as income.

The inclusion of employer contributions to discretionary employee pension funds is more problematic. Not all such contributions can be assumed to add to the employee's future income, owing to vesting requirements and inequitable pension plan terminations. While government agencies (e.g. the Pension Benefit Guarantee Corporation) do add some limited security to these contributions, and while income tax avoidance and/or deferral also make them attractive, they are probably worth less to the average individual than their cost to the employer (at least until they are vested). However, because such contributions typically make

employees better off in the period in which they are made, by reducing the need to save other income for retirement, they add to household well-being and are thus counted in public and insurance income. Because few private pensions are funded on a noncontributory "pay as you go" basis, we see no problem in counting both employer pension benefits when received (mainly for the elderly) and implicit and explicit employer contributions to pension funds, when these contributions are made (mainly for the nonelderly) simultaneously. They are separate amounts and both contribute something to economic well-being in a given year for different groups of beneficiaries.

Total income 1 is derived by adding non-public-transfer and non-employment-related income in kind to public and insurance income. This income in kind is in the form of housing cost reductions, owing either to owner-occupiers' implicit rent or to living rent free in an unowned private housing unit. Both types of in-kind income are counted at market value, i.e., the difference between the market rent that the unit could command and the tenant's net after-tax cost of owning. Although our procedure for estimating implicit rent indicated that about 30 percent of units had negative implicit rents--a net cost of owning in excess of market rent--this excess resulted primarily from our very conservative procedures for estimating the full cost of owning, including liberal depreciation

and maintenance allowances. In these cases implicit rent was set at zero, implying that homeowners are rational consumers who do not purchase homes with net costs of owning in excess of market rents.

Total income 2 is a radical departure from most conventional analyses of income and well-being. Here employment-related contributions to social insurance plans--social security (including retirement, survivors, disability, and medical care components), unemployment insurance, workers' compensation, and de jure contributions to strictly noncontributory pension funds (e.g. federal and state employee retirement funds)--are counted as providing noncash social insurance benefits to current workers on whose behalf the contributions are made. Of course, at the same time these same funds are counted as income to those who are actually retired, unemployed, or injured and who thus benefit directly from these contributions in the form of cash income received. While we agree that there are some elements of double counting involved in this process, to totally ignore these benefits would in our opinion be akin to arguing that social insurance eligibility (via contributions made by employers, unions, and the employee her/himself) has no value to the household whatsoever unless these benefits are actually received. Because many employees and/or their employers purchase similar types of nonmandatory insurance coverage to deepen or widen publicly-provided coverage, we

argue that such contributions have some positive insurance value to all covered household members. Again we count these "benefits" at their cost to the contributor.

Family Size and Composition. Estimates of household economic well-being involve both a measure of resources, such as any of our six suggested income measures, and a measure of the needs to which these resources need to be put. One important element in measuring needs is household or family size. This is particularly true in comparing elderly and nonelderly families. Overall average household size in the March 1980 CPS was 2.75 persons. But average elderly household size was 1.71 persons, while nonelderly units averaged 3.01 persons per household. It follows that elderly "needs" are probably less than those of the nonelderly owing to smaller average family size. The simplistic solution to this problem is to compare the elderly and nonelderly in per capita terms. But to do so biases the measure of well-being by overstating the status of the elderly because per capita adjustments ignore economies of scale in providing household goods and services (household capital, food, etc.). Thus to use incomes unadjusted for family size (or other needs) understates the relative well-being of the elderly, but per capita adjustments overstate it. The in-between alternative is, of course, to employ equivalent adult units to adjust income for differences in needs that take account of

economies of scale and of living together. These equivalence scales can vary by household size, by type of persons within households (e.g. by age or sex), and perhaps by such other factors as location.

In this paper we employ three different sets of equivalence scales in addition to unadjusted and per capita household incomes. Table 2 presents these family size adjustments normalized to a three person nonelderly unit. Equivalences for non-three-person, nonelderly households are not included in Table 2 for the sake of simplicity. To calculate equivalent income, each elderly family's income is divided by the factor shown in Table 2 in order to normalize it to the income of the standard three-person nonelderly unit. Unadjusted incomes are divided by 1.00; the per capita adjustment is realized by dividing by the reciprocal of household size. The three sets of equivalence scales in the middle of the table are each based on somewhat different methodologies. The simplest is the "halfway" equivalence scale, which is just the midpoint between the unadjusted and per capita figures. That is, for a single elderly person (either male or female) the per capita adjustment consists of dividing by .33 (or multiplying by 3), and the unadjusted figure is arrived at by dividing (or multiplying) by 1. The halfway adjustment is therefore to divide by .50 (or to multiply by 2). There is nothing magical or theoretically intuitive about this measure; it is simply the midpoint between the two extremes.

Table 2

Alternative Adjustments for Household Size and Composition
for Elderly¹ and Nonelderly Households in 1979

Type of Unit	Unadjusted Household Income ³	Equivalent Poverty Line ⁴	Half-Way ⁵	Income Adjustments van der Gaag/Smolensky ⁶	Household Income per Capita ⁷
Elderly Male Alone	1.00	.68	.50	.51	.33
Elderly Female Alone	1.00	.68	.50	.40	.33
Elderly Couple	1.00	.86	.75	.70	.67
Average Nonelderly (Three-Person) Unit ²	1.00	1.00	1.00	1.00	1.00

¹Elderly households with a householder age 65 or over.

²Nonelderly, non-three-person units are adjusted for an entire range of family sizes. For simplicity we have normalized only to the average nonelderly unit in this table.

³Household income with no adjustments for family size or composition. See text for further information.

⁴Adjusted according to equivalence scales derived from official U.S. poverty thresholds. See text for further explanation.

⁵Based on equivalence scales halfway between no adjustment and per capita adjustment. See text for further explanation.

⁶Based on equivalence scales estimated by van der Gaag and Smolensky (1982). See text for further explanation.

⁷Based on household income per household member. See text for further explanation.

The other two scales are more sophisticated. The "poverty-line" equivalence scales are based on expert judgments of the minimum amount of food required by families of different sizes and ages. It is implicitly assumed that these same relative adjustments apply to other components of household needs as well as food. The official U.S. poverty lines for families of different sizes and ages contain these same adjustments (see U.S. Bureau of the Census, 1984) and were used as the basis for this set of equivalences.

The van der Gaag and Smolensky (1982) equivalence scales vary by age and sex in addition to household size. Hence these scales distinguish between single women living alone (mostly aged widows) and aged single men living alone. The estimates are based on actual consumer expenditures adjusted for consumption of durable goods and other factors. Because of the relatively low equivalence for single aged women (.40), these scales are closest to per capita figures. The poverty-line scales are closest to unadjusted income and the halfway scales are in the middle. The wide range of adjustments realized by these particular equivalence factors should provide a good test of the sensitivity of measures of well-being to the employment of a particular equivalence scale.

Underreporting. A particular problem with census money income, and with census reciprocity counts for those receiving in-kind transfers, is underreporting. On net, CPS income and in-kind benefit reciprocity and CPS income amounts reported by respondents

tend to be below independently determined benchmarks derived from administrative data (e.g. administrative agency records for transfer programs and National Income and Product Account estimates for market money income amounts). Some types of incomes and/or benefit recipiency are relatively well reported (e.g. wage and salary income and Medicare coverage) while some are not (e.g. property income and food stamp coverage). While coverage for employment-related benefits is also probably underreported to some degree, small-scale experiments have shown that this is likely to be only a minor problem (Duncan and Hill, 1984).

While the underreporting problem may not be as important for other types of relative comparisons, there is a large discrepancy between income underreporting by elderly as compared to nonelderly households. In 1973 the Social Security Administration undertook a long-term project to "exactly" match CPS income records to administrative data records of income receipt. This painstaking study took nearly eight years to complete. Radner (1983) recently pointed out that the March 1973 CPS on which the match file was based indicates that after matching was completed, households headed by an elderly individual experienced an average 37 percent increase in census money income (largely because of massive underreporting of property income by upper-income elderly households), while the average increase for nonelderly households was only 7 percent. The

average change for all units was 11 percent. Moreover, Radner updated this procedure for the March 1980 CPS (the same data file on which this report is based) using average increases for specific socioeconomic groups and specific income types to adjust 1979 data (instead of exact amounts for each household). The same basic patterns of change emerged. Thus in the next section we adjust average census money income (and direct taxes) for underreporting.

In-kind transfer receipt was also underreported on the March 1980 CPS. Drawing on the work of Smeeding (U.S. Bureau of the Census, 1982) we find that food transfers were 78 percent reported, according to administrative estimates, while reported medical transfer coverees were 91 percent of administrative estimates. These adjustments were also made to average incomes. Public housing is well reported, as is homeownership, thus obviating the need for reporting adjustments in these cases. No adjustment for employment-related benefits or legally required benefits was made, because the former are also alleged to be well reported (Duncan and Hill, 1984) and the latter are based on reported wage and salary incomes, which amount to 98 percent of administrative estimates.

Valuation. The large majority of adjustments made in moving from disposable income to total income² involved adding various types of noncash income at market value. While it is clear that in-kind transfers, employment-related benefits, and legally required

contributions add something to economic well-being, the question of how much they add to money income is highly debatable (U.S. Bureau of the Census, 1982; Smeeding, 1984a). In economic theory the appropriate value for income in kind is the recipient or cash-equivalent value, i.e., the amount of money income that would make the family just as well off as the in-kind income amount. Because in-kind transfers usually restrict household consumption, they are generally worth less than their market value to recipients. Cash-equivalent values for food, housing, and medical transfers have been developed by Smeeding (U.S. Bureau of the Census, 1982) and were used to deflate both elderly and nonelderly values for each type of in-kind benefit. While food transfers were generally as good as cash, with a ratio of cash-equivalent value to market value (or benefit weights) of .97 for the elderly and .94 for younger units, medical transfers had an average benefit weight of .48 for the elderly and .59 for the nonelderly. Public housing benefit weights were about .80 for both groups.

Benefit weights have not yet been developed for other types of income in kind. However, the benefit weight for medical transfers (Medicare and Medicaid) at higher income levels were used to adjust employment-related health and health-related insurance amounts to recipient values.⁷ These weights averaged .64 for both the elderly and nonelderly. Because owner occupiers, unlike in-kind transfer recipients, can generally sell their homes and rent

equivalent units, thus capturing the full market value of implicit rent in cash, the cash-equivalent and market values are assumed equal and no adjustment is required.

Employment-related pension and legally required contributions are more problematic. We have no good proxy for determining their cash-equivalent value. Though income tax advantages often increase the value of employment-related pensions, while higher income pension coverees often make full use of IRAs and other devices to add to retirement contributions and while public opinion surveys indicate some degree of confidence in social insurance contributions, particularly among older householders, there is currently no solid evidence on which we can base these values. Instead we took the average benefit weight for all in-kind transfers at the average income level of all beneficiaries as an overall proxy for the benefit weights which we desire. On this basis employment-related pension contributions and legally required contributions were given an average benefit weight of .74.

Age Biases and Period Effects. Often the relative incomes and needs of the elderly and nonelderly reflect both age and period effects which distort comparisons of well-being. For instance, because the human body generally depreciates with age, elderly persons spend three times as much on health care as do nonelderly persons. Although household equivalence scales do not usually reflect this bias, in-kind medical transfers most certainly do.⁸

Medical transfers to the elderly are roughly three and one-half times greater than those to the nonelderly. While employment-related medical benefits somewhat offset this bias, total medical benefits for the elderly are still more than 50 percent larger than those of younger units. A large portion of this differential is probably due to greater needs and lower health status among the elderly.

On the other hand, older households are more likely to be owner occupiers with largely paid up mortgages, biasing implicit rental value income toward the elderly. However, older homeowners also tend to have purchased older, smaller, and lower-value homes than the nonelderly, thus reducing this advantage to some extent.⁹ Other biases reflect the relative popularity of employer pensions among the nonelderly, making their employment-related pension contributions, averaged over all nonelderly households, somewhat greater than the value of employment-related pension receipts, averaged overall. Also, cash property income receipts reflect the life-cycle asset accumulation process, increasing this income for the elderly relative to the nonelderly (though differentially heavier underreporting among the elderly offsets this influence in the census CPS income statistics). By and large we regard the sum total of these biases to be offsetting, not particularly favoring one group over another.

Finally, there are period effects to consider. The elderly at the end of the 1970s (and on into the 1980s) benefited greatly both from being homeowners during the substantial housing price inflation of the 1970s, and from the rapid increases in social security benefits (relative to contributions) during the late 1960s and 1970s. If the adulthood of the baby boom generation drove up housing prices, and if the aging of this baby boom cohort will similarly depress both relative housing prices and future social security benefits, the current cohort of elderly households, and the 1979 elderly whom we study here, may have benefited from historical and demographic factors that will not benefit tomorrow's elderly. Already there are indications that social security benefits will not continue even to maintain their real (price-adjusted) value through the late 1980s. If so, we must be careful not to generalize too far forward--to elderly groups in the 21st century, for instance--from the results of this analysis.

IV. Results

The six measures of the relative mean household incomes of the elderly and nonelderly, and the components of each measure, are calculated in Table 3. The income measures are based on unadjusted (reported) CPS income, and all income in kind is counted at market value. The initial ratio of census incomes of the elderly and nonelderly is .518. The subtraction of direct taxes increases this

Table 3

Various Measures of the Relative Household Incomes of
the Elderly and Nonelderly in 1979

<u>Income Measures and Components¹</u>	<u>Elderly²</u>	<u>Non-elderly</u>	<u>Elderly-Nonelderly Ratio</u>
<u>Census Income</u>	<u>\$11,074</u>	<u>\$21,360</u>	.518
Minus: Personal Taxes	1,086	4,741	
Equals: <u>Disposable Income</u>	<u>9,988</u>	<u>16,619</u>	.601
Plus: In-Kind Transfers	1,430	366	
(Medical Transfers)	(1,344)	(233)	
(Food Transfers)	(28)	(109)	
(Housing Transfers)	(58)	(24)	
Equals: <u>Public Income</u>	<u>11,418</u>	<u>16,985</u>	.672
Plus: Discretionary Employment-related Benefits	247	1,857	
(Pensions)	(131)	(973)	
(Health Insurance)	(91)	(719)	
(Other Insurance)	(25)	(166)	
Equals: <u>Public and Insurance Income</u>	<u>11,665</u>	<u>18,842</u>	.619
Plus: Other Income In-Kind	719	303	
(Rent Free Housing)	(31)	(18)	
(Implicit Rent)	(888)	(285)	
Equals: <u>Total Income 1</u>	<u>12,384</u>	<u>19,145</u>	.647
Plus: Legally Required Benefits	288	2,495	
Equals: <u>Total Income 2</u>	<u>\$12,672</u>	<u>\$21,640</u>	.586

Source: See Table 1.

¹Income measures and components are defined in text and in Table 1.

²Elderly are households with a householder age 65 or over.

ratio to .601 because the burden of direct taxes on the nonelderly is over four times that of the elderly. While the growth of taxable private pension incomes and the taxation of half of social security benefits at higher income levels introduced during the 1980s will in the future make a small dent in this differential, even the top 10 percent of elderly households received more in cash and in-kind transfers during 1979 than they paid in direct taxes (Smeeding, 1984a). Certain special tax benefits for the elderly, including the special double exemption and the own-home capital gains tax exclusion, are most certainly inequitable and should in our opinion be abolished.

The next two income components, in-kind transfers and discretionary employment-related benefits, virtually cancel each other out. The far above average income gain of the elderly from in-kind transfers (\$1430) as compared to the nonelderly (\$366) is almost completely offset by the differential in employment-related benefits in favor of the nonelderly (\$1857) as compared to the elderly (\$247). As a result the public income ratio rises to .672, but then falls back to .619 once employment-related benefits are added in to form public and insurance income.

Adding in the value of private housing, income in kind differentially benefits the elderly (\$719) as compared to the nonelderly (\$303), owing largely to the life-cycle effects of homeownership. Thus the total income ratio rises to .647. For those willing to consider the insurance value of legally required

employment-related social insurance contributions and employee contributions (payroll taxes) as adding a value equal to their dollar cost to income, the total income 2 ratio falls back to .586.

These results can be compared to those of Danziger et al. (1984) and Hurd and Shoven (1982). The latter found a ratio of the money income of the elderly to that of the entire population of .58 in 1978, virtually identical to the .574 ratio that we find in 1979 (not shown above). However, more appropriate comparisons are offered by Danziger et al., who compare elderly-nonelderly mean income ratios. Their money income ratio for 1973, based on the Consumer Expenditure Survey (CEX), was .486 as compared to our ratio of .518. Owing mainly to the growth in social security benefits, private pension receipt, annual cash returns on household wealth (property income), and ignoring differential reporting between the CEX and the CPS, the elderly gained about 3.2 percent (.032 point) on the nonelderly between 1973 and 1979. Danziger et al. adjust for durables by adding implicit rental value of homes and of other durables, while we add only implicit rent on homes. Their ratio moves from .486 to .522 according to this comparison. The closest we can come is to add implicit rent to census income, creating a ratio of .543 -- with the elderly still .021 ahead of the nonelderly on this basis. Next Danziger et al. subtract direct taxes, boosting their income ratio to .562. If we were to subtract taxes from census income plus implicit rent, our Table 2 would show a ratio of

.632. On this basis alone, our ratio shows a gain of 7 percent (.07) over that of Danziger. Apparently the tax burden on the nonelderly has increased relative to that on the elderly since 1973. Danziger et al. make no further adjustments. However, once we add in-kind transfers, discretionary employment-related benefits, and rent-free housing, our total income 1 ratio rises to .647 -- .015 points higher than our ratio that is most comparable to that of Danziger et al. In summary, adjusting for almost all relevant forms of income in kind has made the elderly better off, relative to the nonelderly, than they were in the most comparable study.

Adjusting for Underreporting and Recipient (Cash-Equivalent) Value. Next we turn to adjustments for income underreporting and for recipient value of income in kind, as specified in Section III. Table 4 presents these results. The adjustments for money income underreporting in Panel A of Table 4 boosts the ratio of census money income from .518 (in Table 3) to .663 -- a jump of almost 15 percent (.145). Accounting for taxes, income in kind, and employment-related benefits pushes the public and insurance income ratio to .774 as compared to .619 in Table 3, an increase of .155, while the total income 1 ratio increases to .797. Thus, without adjustment for family size, differential underreporting of money income and in-kind transfers raises the total income (income 1) of the elderly to almost 80 percent that of the nonelderly! Even

Table 4

Effects of Income Underreporting and Alternative Valuation of
Nonmoney Income on Various Relative Household Incomes of
the Elderly and the Nonelderly in 1979

Income Measure ¹	Elderly ²	Nonelderly	Elderly- Nonelderly Ratio
A. <u>Income Underreporting</u>³			
Census Income	\$15,171	\$22,858	.663
Disposable Income	14,005	18,032	.777
Public Income	15,577	18,596	.837
Public and Insurance Income	15,824	20,453	.774
Total Income 1	16,543	20,756	.797
Total Income 2	16,831	22,239	.754
B. <u>Recipient (Cash-Equivalent) Value</u>⁴			
Census Income	\$11,074	\$21,360	.518
Disposable Income	9,988	16,619	.601
Public Income	10,812	16,836	.642
Public and Insurance Income	10,969	18,054	.608
Total Income 1	11,688	18,357	.637
Total Income 2	11,876	19,929	.594
C. <u>Both Underreporting and Recipient Value</u>			
Census Income	\$15,171	\$22,858	.663
Disposable Income	14,005	18,032	.777
Public	14,829	18,249	.813
Public and Insurance Income	14,986	19,467	.770
Total Income 1	15,705	19,770	.794
Total Income 2	15,898	21,392	.743

Source: See Table 1.

¹Income Measures and Components are defined in text and in Table 1.

²Elderly are households with a householder age 65 or over.

³Average Census Money Income and tax liabilities are adjusted for nonreporting of income as reported by Radner (1983). See text for further discussion of adjustments.

⁴Recipient or cash-equivalent value is the value which beneficiaries place on nonmoney income. Conceptually it represents the amount of cash income which recipients would exchange their noncash incomes for with no loss in economic well-being. See text for further discussion.

adding in legally required contributions at market value, to reach total income 2, leaves the ratio of elderly to nonelderly incomes at .754.

The adjustment for recipient or cash-equivalent value of in-kind benefits in Panel B of Table 4 moves the ratios to a small extent in the other direction. The market-value-based public income ratio in Table 3 falls from .672 to .642, whereas the recipient-value public and insurance income ratio in Table 4 is .608 vs. .619 when in-kind benefits are counted at market value in Table 3. Apparently the adjustments that we would make to recipient value have only a small effect on relative incomes. By and large this effect works to reduce the ratio of elderly to nonelderly incomes by only about 1 percent, based on the total income 1 concept. The effect on total income 2, including legally required benefits, is equally modest but in the opposite direction. Here, the lower recipient value for legally required contributions raises the ratio to .594 as compared to .586 in Table 3. On net then, recipient valuation makes only a small difference in average relative income ratios.

Combining these effects in panel C of Table 4, we arrive at relative income ratios which are close to those shown in Panel A of that table. The effect of income underreporting on relative incomes far outweighs the recipient-valuation effect. Our total income 1 measure indicates that average household income for the elderly, unadjusted for differences in household size and

composition, is 79.4 percent as large as that of the nonelderly. Even counting required contributions as income leaves the elderly with 74.3 percent as large an unadjusted (for family size) income as the nonelderly.

Adjusting for Household Size and Composition. Table 5 adjusts the income estimates in Table 3 for household size and composition, using the four adjustment techniques discussed in Section III. The first column (unadjusted figures) is identical with the ratios in Table 3. If we look first at the per capita adjustment in the final column, the incomes of the elderly are from 3.6 to 18.9 percent larger than those of the nonelderly once taxes, the various forms of income in kind, and legally required contributions are taken into account. While all three sets of equivalence scales increase the incomes of the elderly relative to those of the nonelderly as compared with the first column, they do not go so far as the per capita adjustments in the final column. Moreover, the effects differ according to the equivalence scale employed. For instance, on the basis of the total income 1 measure, poverty-line equivalence scales leave the elderly with 80.4 percent as much income as the nonelderly; the halfway adjustment raises this ratio to 95.1 percent, and the van der Gaag-Smolensky adjustment, to 104.3 percent. Thus, even on the basis of the halfway set of equivalences, the elderly are virtually as well off as the nonelderly before adjusting for income underreporting and recipient valuation.

Table 5

The Effects of Alternative Adjustments for Household Size and Composition on the Ratio of Incomes of the Elderly¹ to the Nonelderly in 1979

Income Measure ²	Unadjusted Household Income ³	Equivalent Poverty Line ⁴	Half-Way ⁵	Income Adjustments van der Gaag/Smolensky ⁶	Household Income per Capita ⁷
Census Income	.518	.640	.762	.836	.903
Disposable Income	.601	.742	.884	.969	1.036
Public Income	.672	.830	1.002	1.084	1.189
Public and Insurance Income	.619	.775	.920	.999	1.107
Total Income 1	.647	.804	.951	1.043	1.142
Total Income 2	.586	.746	.893	.978	1.045

Source: See Table 1.

¹Elderly are households with a householder age 65 or over.

²Income Measures and Components are defined in text and in Table 1.

³Taken directly from Table 2.

⁴Adjusted according to equivalence scales derived from official U.S. poverty thresholds. See text for further explanation.

⁵Based on equivalence scales halfway between no adjustment and per capita adjustment. See text for further explanation.

⁶Based on equivalence scales estimated by van der Gaag and Smolensky (1982). See text for further explanation.

⁷Based on household income per household member. See text for further explanation.

Although we do not have the microdata necessary to make all of these interactive adjustments simultaneously, a total income-1-based measure, adjusted for reporting and valuation differences, would certainly raise the ratio of elderly to nonelderly incomes in excess of 1, using either the halfway or van der Gaag-Smolensky equivalence scales. Once Danziger et al. made adjustments for durables, taxes, and equivalences, their ratio stood at .853 in 1973. Our further adjustments for all types of income in kind at recipient value and for underreporting of income (but not for legally required contributions), using the same van der Gaag-Smolensky equivalence scales that they employ, would leave the elderly at least 20 percentage points above their estimate, i.e., with a total income 1 ratio of about 115 percent. We conclude that for 1979, applying a very broad measure of income, and using a set of reasonable adjustments for differential family size, in-kind income valuation, and income underreporting, elderly households are clearly better off than nonelderly units.

V. Relative Income Inequality Among the Elderly and Nonelderly:
The Effect of Income In Kind.

The final issue addressed by this paper is the effect of taxes and income in kind on the distribution of income (and well-being) among elderly and nonelderly households. Tables 6 and 7 present estimates of the size distribution of incomes among all households and then among elderly and nonelderly households taken alone. The

Table 6
 Various Measures of Income Inequality Among Elderly and
 Nonelderly Households based on Household Quintiles
 in 1979

Income Measure ¹	Income Share of		Gini Ratio
	Lowest Quintile ³	Highest Quintile ³	
<u>A. All Households</u>			
Census Income	4.19%	43.09%	.386
Disposable Income	5.09	39.23	.342
Public Income	6.03	38.31	.324
Public & Insurance Income	5.55	39.12	.335
Total Income 1	5.67	38.90	.332
Total Income 2	5.41	39.21	.339
<u>B. Elderly Households¹</u>			
Census Income	5.10%	49.47%	.430
Disposable Income	5.64	45.61	.392
Public Income	6.90	42.48	.349
Public & Insurance Income	6.75	43.29	.358
Total Income 1	6.91	42.76	.351
Total Income 2	6.67	43.76	.363
<u>C. Nonelderly Households</u>			
Census Income	4.92%	40.58%	.352
Disposable Income	5.80	37.43	.315
Public Income	6.38	37.03	.305
Public & Insurance Income	5.95	37.29	.312
Total Income 1	6.02	37.19	.310
Total Income 2	5.88	37.49	.312

Source: See Table 1.

¹Income Measures and Components are defined in text and in Table 1.

²Elderly are households with a householder age 65 or over.

³Quintiles based on separate rankings with 20 percent of households in each quintile.

Table 7
 Various Measures of Income Inequality Among Elderly and
 Nonelderly Households Based on Person Quintiles
 in 1979

Income Measure 1	Income Share of		Gini Ratio
	Lowest Quintile ³	Highest Quintile ³	
<u>A. All Households</u>			
Census Income	4.92%	40.53%	.354
Disposable Income	5.88	38.76	.314
Public Income	6.79	37.96	.297
Public & Insurance Income	6.30	37.21	.306
Total Income 1	6.39	37.16	.304
Total Income 2	6.19	37.01	.307
<u>B. Elderly Households¹</u>			
Census Income	4.96%	48.26%	.419
Disposable Income	6.52	42.31	.380
Public Income	6.74	41.51	.341
Public & Insurance Income	6.57	42.32	.349
Total Income 1	6.79	42.14	.345
Total Income 2	6.46	42.80	.355
<u>C. Nonelderly Households</u>			
Census Income	5.49%	39.08%	.333
Disposable Income	6.42	36.51	.296
Public Income	7.14	36.00	.284
Public & Insurance Income	6.70	36.21	.291
Total Income 1	6.72	35.97	.289
Total Income 2	6.61	35.66	.290

Source: See Table 1.

¹Income Measures and Components are defined in text and in Table 1.

²Elderly are households with a householder age 65 or over.

³Quintiles based on separate rankings with 20 percent of households in each quintile.

income shares of the lowest and highest quintiles and the associated Gini coefficient of dispersion (which measures the degree of inequality) is shown for each income measure and group. Each of the three panels in Table 6 contains estimates that are based on separate rankings of households by quintile. Table 7 differs slightly. As Danziger and Taussig (1979) and Sen (1979) have argued, the person is a more appropriate income-receiving unit than the household, since each person's welfare is thereby ranked equally. Following Danziger and Taussig, we have ranked units in Table 7 so that 20 percent of the total number of persons, rather than 20 percent of the total number of households, is in each quintile under each income measure.

To measure economic well-being rather than income alone, we need to adjust income for the relative needs of each household. Tables 8 and 9 accomplish this adjustment by transforming four of our reported income measures into equivalent-income measures. These measures of well-being are those which are most preferred for distributional analyses (e.g. see Altimir, 1983; Van Ginneken, 1982), and they are derived by dividing the various measures of household income by the number of standardized adults in each household. All such adjustments are based only on the poverty-line equivalence scales shown previously, in Table 2. Different equivalence scales might yield slightly different results. Table 8

divides the standardized population so that 20 percent of households are in each quintile, while Table 9 separates each of the population groups so that 20 percent of persons are in each quintile.

Several dimensions of comparability are apparent under these income measures. First, among all households in Tables 6 and 7, moving from census to disposable to public income increases income equality. Because direct taxes are by and large progressive in nature, and because the market value of in-kind transfers decidedly favor the poor in its distributional impact, the income shares of the bottom fifth of households in Table 6 (or persons in households in Table 7) increase while the shares of the top quintile decrease as they move from the measures of census to public income. The corresponding Gini coefficients decrease markedly (lower inequality), as one would expect. Adding employment-related benefits and housing income in kind reverses this effect, most of the change coming from adding employment-related benefits (to reach public and insurance income). Because these forms of income largely accrue to middle- and upper-income units, the Gini rises since quintile shares fall at the bottom and rise at the top as measured on a household quintile basis (Table 6).¹⁰ Housing income in kind (the difference between total income 1 and public and insurance income) has only a small effect on overall inequality. In summary, the effect of all income in kind -- the difference between total income 1 and disposable income -- still adds to overall income equality, though not as much as if we consider only transfers in

kind (compare public income to total income 1 estimates). Adding legally required contributions back into income (total income 2) only slightly increases inequality, because virtually all workers receive some benefit from mandated social insurance contributions as we have measured them. Because household size generally increases with income, the estimates in Table 7 bring more (less) households into the bottom (top) quintile of persons than in Table 6, thus increasing income equality for every income measure shown. However, the same relative movements in inequality among the various measures of income are apparent in both tables.

Elderly and nonelderly household incomes display the same general pattern of change under the various income measures as does the entire population. Taxes are equalizing, as are in-kind transfers. The equalizing impact of medical benefits is particularly evident for elderly households, where the public income share of the bottom quintile increases considerably as compared to disposable income. On the other hand, because few low-income elderly work, they receive relatively little in the form of employment-related benefits. Hence the bottom quintile's share of public and insurance income falls, and that of the top quintile rises. Because of the pervasiveness of home ownership among the elderly -- even for those in the bottom quintile -- the total income 1 share of the bottom quintile rises back to its public income level. Among the nonelderly, taxes have the largest equalizing effect. Income in kind has only a modest equalizing effect on

measured inequality, as the equalizing effect of in-kind transfers outweighs the disqualizing effects of employment-related benefits and housing income. Again, person-based quintile estimates indicate a higher degree of equality than do household-based estimates.

In general, as charted by the Gini coefficient, the incomes of elderly households are more unequally distributed than are the incomes of nonelderly units. Quintile share levels are a bit harder to classify. Among the household incomes shown in Table 6, almost all of both the top and bottom quintiles among the elderly have a larger share of income than the top and bottom quintiles of the nonelderly. In Table 7, income of persons shows a much larger top quintile share for the elderly than the nonelderly, indicating that on a per person basis, the household per capita incomes in the top quintile of elderly (largely elderly couples) are somewhat higher than those of the single elderly (largely aged widows) in the bottom quintile. The household versus person comparisons of Tables 6 and 7 for the nonelderly reveal much less difference in quintile shares. However, the large difference in the income shares of the elderly and nonelderly at the top of the distribution results in much higher Gini coefficients (greater inequality) for the elderly.

If we look for a moment at total income Y , it appears that on a household basis, inequality among the nonelderly is generally less than among the elderly, except for the income share of the bottom 20 percent of households, where the elderly show a great degree of equality. In general, the effect of subtracting taxes and adding

income in kind is to produce a more equal income distribution for elderly and nonelderly households, and taxes show a greater equalizing effect than income in kind. It appears that counting legally required employment-related contributions as income has no substantial impact on measured inequality.

However, before we leave these estimates, their shortcomings must be mentioned. We have not adjusted for income underreporting or for recipient valuation of income in kind. Both adjustments would increase measured inequality. In particular, underreporting adjustments would substantially increase (decrease) the income share of the top (bottom) quintile of the elderly. Radner (1983) shows that after adjusting for reporting errors, the income share of the top 5 percent of elderly households increases from 24.3 to 28.5 percent, while the share of the bottom quintile decreases from 4.2 to 3.3 percent. Radner's Gini coefficient also rose by 4.1 points (.041) owing to this adjustment. Similarly, the ratio of recipient value to market value of noncash income increases as income rises, thus decreasing the income share of the lowest quintile owing to the lower recipient value given to income in kind. The net effect of both adjustments would be to increase measured inequality were we able to make all of these changes simultaneously.

Turning to the equivalent-income estimates in Tables 8 and 9, we find, for all groups and income measures, a more equal distribution of well-being as compared to the distribution of incomes in Tables 6 and 7. The figures shown in these tables do not allow the reader to

Table 8

Various Measures of the Inequality in Economic Well-Being
Among Elderly and Nonelderly Households Based on
Household Quintiles in 1979

Income Measure 1	Income Share of		Gini Ratio
	Lowest Quintile ³	Highest Quintile ³	
A. <u>All Households</u>			
Equivalent ² Census Income	5.27%	40.98%	.353
Equivalent Public and Insurance Income	6.96	36.61	.294
Equivalent Total Income 1	7.06	36.40	.291
Equivalent Total Income 2	6.83	36.90	.298
B. <u>Elderly Households</u>¹			
Equivalent ² Census Income	6.14%	46.31%	.390
Equivalent Public and Insurance Income	8.12	39.88	.310
Equivalent Total Income 1	8.26	39.15	.303
Equivalent Total Income 2	8.14	39.64	.308
C. <u>Nonelderly Households</u>			
Equivalent ² Census Income	5.49%	39.06%	.333
Equivalent Public and Insurance Income	6.79	35.72	.286
Equivalent Total Income 1	6.85	35.63	.284
Equivalent Total Income 2	6.71	35.77	.287

Source: See Table 1.

¹Income Measures and Components are defined in text and in Table 1.

²Equivalent Income is derived by adjusting each income concept using the equivalence scales contained in the U.S. poverty-line matrix.

³Quintiles based on separate rankings with 20 percent of households in each quintile.

Table 9

Various Measures of the Inequality in Economic Well-Being
Among Elderly and Nonelderly Households Based on
Person Quintiles in 1979

Income Measure 1	Income Share of		Gini Ratio
	Lowest Quintile 3	Highest Quintile 3	
<u>A. All Households</u>			
Equivalent ² Census Income	5.62%	39.63%	.335
Equivalent Public and Insurance Income	7.20	35.29	.282
Equivalent Total Income 1	7.26	35.53	.280
Equivalent Total Income 2	7.09	30.81	.311
<u>B. Elderly Households¹</u>			
Equivalent ² Census Income	6.07%	45.44%	.381
Equivalent Public and Insurance Income	8.02	39.47	.306
Equivalent Total Income 1	8.17	38.88	.298
Equivalent Total Income 2	7.91	39.81	.311
<u>C. Nonelderly Households</u>			
Equivalent ² Census Income	5.75%	38.61%	.325
Equivalent Public and Insurance Income	7.12	35.18	.278
Equivalent Total Income 1	7.16	35.08	.276
Equivalent Total Income 2	7.04	35.39	.278

Source: See Table 1.

¹Income Measures and Components are defined in text and in Table 1.

²Equivalent Income is derived by adjusting each income concept using the equivalence scales contained in the U.S. poverty-line matrix.

³Quintiles based on separate rankings with 20 percent of households in each quintile.

separate the effects of taxes from the effects of income in kind, but the combined effect of both adjustments is greatly to increase income equality. In all cases the public and insurance income measures indicate a greater degree of equality than the census income figures. In general, addition of employment-related fringe benefits (to reach total income 1) and even legally required contributions (total income 2) has little effect on measured inequality. Even with larger relative differences in household size among the elderly as compared to the nonelderly, equivalent--income inequality is greater among the elderly than among the nonelderly. Because equivalent income standardizes household incomes for differences in size and composition, there are much smaller differences in person vs. household rankings in Tables 8 and 9 than in the previous two tables.

Comparisons with Danziger et al. Our income concepts match those of the earlier study by Danziger et al. (1984) well enough to warrant the comparisons shown in Table 10. The Danziger study is for income year 1973 and is based on the 1973 Consumer Expenditure Survey adjusted to reflect the flow value of all consumer durables, including housing (implicit rent) and also nonhousing durables: automobiles, refrigerators, and the like. Our 1979 data are based on the CPS adjusted to include all major forms of income in kind, but excluding the flow value of nonhousing durables. The only form

Table 10

Inequality Comparisons with Study by Danziger et al.,
Based on Household Quintiles

A. All Households	Danziger et al. (Data Year: 1973) ¹			This Study (Data Year: 1979)		
	Lowest Quintile	Highest Quintile	Gini Ratio	Lowest Quintile	Highest Quintile	Gini Ratio
Census Income ²	4.59	43.04	.391	4.19	43.09	.386
Disposable Income ³	4.75	42.56	.382	5.09	39.23	.342
Adjusted Income ⁴	4.96	42.21	.377	5.67	38.90	.332
Equivalent Adjusted Income ⁵	5.99	41.59	.353	7.06	36.40	.291
B. <u>Elderly Households</u>						
Census Income ²	4.93	49.80	.444	5.10	49.47	.430
Disposable Income ³	5.14	49.22	.436	5.64	45.61	.392
Adjusted Income ⁴	5.20	47.54	.421	6.91	42.76	.351
Equivalent Adjusted Income ⁵	5.85	45.68	.395	8.26	29.15	.303
C. <u>Nonelderly Households</u>						
Census Income ²	5.50	40.73	.356	4.92	40.58	.352
Disposable Income ³	5.81	40.48	.348	5.80	37.43	.315
Adjusted Income ⁴	5.78	40.37	.348	6.02	37.19	.310
Equivalent Adjusted Income ⁵	6.34	40.57	.340	6.85	35.63	.284

¹Danziger et al. (1984) data are based on the 1973 Bureau of Labor Statistics Consumer Expenditure Survey.

²Census Income is as defined in the text and is identical for both this study and that of Danziger, except that the latter include a small amount of food stamp income for 1973 -- less than \$3.0 billion -- while official CPS-census income does not include the value of food stamps. *plural*

³Disposable Income is as defined in Section III of the text and is identical for both this study and that of Danziger except that the latter include a small amount of food stamp income for 1973 -- less than \$3.0 billion.

⁴Adjusted Income is total income 1 in this study, and includes all major forms of in-kind transfer, discretionary employment related benefits, and housing income in-kind. In the Danziger study, only housing income in kind in the form of implicit rent and the flow value of consumer durables are included. See text for further discussion.

⁵Equivalent Adjusted Income is derived by modifying each Adjusted Income concept using the equivalence scales implicit in the U.S. poverty-line matrix.

of in-kind transfer included in the Danziger study is a very small amount for food stamps -- less than \$3.0 billion in 1973. Both studies are based on the household income concept.

Other than differences in survey income reporting and sampling techniques (and the minor amount of food stamps included in the census income concept employed by Danziger et al.) our measures of census and disposable income are identical. The adjusted income definitions differ as explained above, while both equivalent-income measures adjust for differences in family size and composition by using the U.S. government poverty-line equivalence scales. Quintile shares and Gini coefficients for both studies were computed using the same computer software program.

Table 10 indicates only a small difference in the size distribution of census income in 1979 (this study) and in 1973 (Danziger). Thus they both begin from roughly the same point. All income measures do show greater equality in 1979 than in 1973, however. Moreover, the movement toward greater equality increases as we add in first taxes, then nonmoney income, and finally equivalence adjustments. These changes are more pronounced for the elderly than for the nonelderly. The first sizable difference comes in comparing disposable to census income in both studies. Direct taxes have a much larger equalizing impact on overall inequality and among both elderly and nonelderly households in 1979 than in 1973. In particular, the income shares in the highest quintile and the

Gini rates change considerably more in 1979 than in 1973. The income tax burden had become more progressive over this period, and while regressive payroll taxes grew substantially, fewer earners were found in the bottom quintile. Also, the increasingly higher incomes of the upper-income elderly increased their income tax burden in 1979 as compared to 1973.¹¹

If we shift from disposable to adjusted income, both studies indicate a movement toward greater equality among all households: income shares rise at the bottom and fall at the top, and the Gini is reduced. Our results seem to indicate a slightly greater move toward equality among the elderly than do those of Danziger et al.; our study also shows only small equality gains for the nonelderly, while Danziger's shows little if any. Apparently the effects of in-kind transfers and fringe benefits, coupled with relatively higher OASDI and housing income in kind for the elderly in 1979 (vs. 1973) are factors contributing to this change. The equivalence-scale effect serves to reduce inequality in both studies.

Comparing census to equivalent adjusted income, the net effect of all changes and adjustments on income equality was greater in 1979 than in 1973 for both groups and for all units. These differences are accounted for primarily by changes in the distribution of direct taxes, and also by taking into consideration large amounts of income in kind in 1979.

VI. Summary and Conclusions

The high average absolute (as well as relative to the younger population) level of economic well-being among the elderly in the United States has been reasonably well-established (Danziger et al., 1984; Smeeding, 1984b). Relatively few of the elderly fall below the official U.S. poverty line as measured either by money income alone (U.S. Bureau of the Census, 1983a) or including in-kind transfer income as well (U.S. Bureau of the Census, 1982, 1984; Smeeding, 1977). Further, the elderly are neither more nor less vulnerable to inflation than are any other groups in the population -- i.e., they do not by and large live on "fixed incomes" (Hurd and Shoven, 1982, 1984; Clark et al., 1982). There is also evidence that the elderly do not decumulate their assets as they age (Menchik and David, 1983) and that, of all population age groups, they experienced the largest increase in real income between 1979 and 1983 (Palmer and Sawhill, 1984).

The analyses performed in this paper strengthen these conclusions. While the addition of in-kind transfers mainly benefits the elderly, adding employment-related benefits to the incomes of the nonelderly brings their income closer to that of the elderly. Adjustments for relative amounts of income underreporting and differences in household size and composition push elderly incomes much higher than nonelderly incomes. Adjusting for

recipient rather than market values of benefits reduces absolute levels of income for both elderly and nonelderly, but neither value markedly affects ratio measures of relative well-being of these two groups. In sum, when we take into account: household size and composition differences, underreporting, direct taxes, and the several types of income in kind--transfers, employment-related benefits, and housing--the economic status of the elderly in 1979 is 10 to 15 percent higher than that of the nonelderly, depending on which equivalence scale is used to adjust incomes.

The effect of direct taxes on inequality is to reduce it substantially. While in-kind transfers further reduce measured income inequality, other forms of non-cash income work in the opposite direction, though to a lesser extent. Adding all forms of in-kind income to after direct tax cash income -- noncash transfers, employment-related discretionary and legally required benefits, and housing income -- inequality is reduced among both the elderly and the nonelderly.

Our measures of the relative incomes of the elderly and nonelderly and of inequality for 1979 were compared to those of Danziger et al. for 1973. Primarily because of reductions in the relative tax burden of the elderly compared to the nonelderly, between 1973 and 1979 the ratio of their incomes rose. Part of the explanation for the rise was the growth in social security benefits and housing income in kind over the 1973-1979 period. The larger

effect of in-kind transfers on the incomes of the elderly as compared to the impact of discretionary employment-related benefits on the incomes of the nonelderly also raised the elderly-nonelderly total income ratio in this study as compared to that of Danziger et al., who did not make such adjustments. Comparisons of inequality in these two studies indicate a move toward greater equality between 1973 and 1979 as measured in various ways for both households and persons. Moving from census to equivalent total (or adjusted) income also indicates a larger move toward income equality, especially among the elderly, in this study as compared to that of Danziger et al.

The policy implications of this study follow directly:

1. The relative incomes of the elderly as compared to the nonelderly increased substantially between 1973 and 1979 owing to both a relative decrease in taxes and the rapid rise of income in kind--particularly housing and medical care transfers. From these findings it seems clear that the well-to-do elderly in particular (whose property incomes are substantially underreported) can afford to pay larger amounts in taxes and for their health care than they currently pay. However, earlier research (Smeeding, 1984b) indicates that one must be wary of inequality among the elderly: increased taxes and/or health insurance charges on

higher-income elderly units is preferable to unilateral across-the-board increases in Medicare copayments or OASI benefit reductions.

2. Clearly, comparisons of the well-being of the elderly vs. the nonelderly and measures of income inequality need to take into consideration both employment-related benefits and in-kind transfers. The latter have a large impact on the incomes of the elderly and the poor (U.S. Bureau of the Census, 1982) while the former substantially affect the nonelderly. To count one and not the other is to consider only a part of the American system of social welfare policy. The interactions between these systems of public in-kind transfers and private sector, employment-related transfers need to be more fully explored. Greater effort is also needed to estimate the recipient value of employment-related and legally required benefits. A study of both of these phenomena by the author of this study is now underway.
3. In drawing policy implications from this paper, one must take account of the effect of changes in economic performance and in public policy since 1979. Recent analyses (e.g., Palmer and Sawhill, 1984; Council of

Economic Advisers, 1985), indicate that the elderly as a group are probably even better off now than in 1979. But owing to higher unemployment, reduced progressivity of taxes, and substantially slower growth (and even absolute decline) in income transfer benefits, poverty and inequality have increased since 1979. While these changes are likely to strengthen the case for increased taxes and/or reduced benefits for the high-income elderly, the policy implications are less clear for other groups of the elderly population.

Appendix

This appendix outlines the technical details which explain how various forms of nonmoney income were assigned to CPS households for 1979. For additional detail the reader should consult Smeeding (1983, 1984b) and the U.S. Bureau of the Census (1982, 1983a, 1984).

In-Kind Transfer Benefits. Income in kind in the form of food (food stamp coupons and free or reduced-price school lunch subsidies) received the previous year is reported on the March Current Population Survey. In 1979 these benefits totaled \$7.3 billion. No information on private interhousehold food (or housing or medical) transfers to or from other households was available on the survey, although regular private interhousehold cash transfer benefits are included in the data set.¹²

Income in kind in the form of subsidized medical insurance is derived from two major government programs, Medicare and Medicaid.¹³ Less highly publicized but not unimportant are the potential health care benefits generally available to veterans of the armed services with and without service-connected disabilities.¹⁴ Needy younger veterans and all men aged 65 or over who were veterans of the armed forces are eligible for veterans' health care benefits regardless of service-connected medical problems (U.S. Veterans' Administration, 1980). Eligibility rules for veterans' health care allow any veteran under age 65 who

will sign a form testifying to lack of ability to pay, and any veteran age 65 or over, regardless of ability to pay, to use VA medical centers for treatment of non-service-connected illness, either as an inpatient or as an outpatient. Thus, low-income nonaged and aged veterans have alternative coverage of medical needs,¹⁵ depending on proximity to and availability of VA health centers.

Medicare and Medicaid beneficiaries were assigned the insurance value of each program's benefits according to their state and the type of recipient (elderly, disabled, child, or other adult). This value is derived by taking total benefits paid (net of institutional care expenses in the case of Medicaid) and dividing them by the total population eligible for each program.¹⁶ The total value of these benefits was \$32.0 billion in 1979, with an average value of Medicare and Medicaid per elderly coveree of \$929 and \$420, respectively. Average Medicaid benefits for the nonelderly were \$629 per eligible adult and \$329 per child (U.S. Bureau of the Census, 1982).

Veterans' health care benefits were treated as a substitute for Medicaid or other Medicare supplemental health coverage for the elderly, and as a substitute for Medicaid for the disabled and nondisabled nonelderly. In the case of the elderly, to add the overall insurance value of VA health care to Medicare and/or Medicaid would be redundant. The large majority of elderly veterans

face two health care choices: either to make use of non-VA health care, partly paid for by Medicare and perhaps partly subsidized by other supplemental sources (e.g., Medicaid or private insurance), or to seek free care at a VA health center. This choice will be conditioned on the perceived quality of care in each instance and the cost of that care. As Medicare coinsurance and deductibles have risen and are forecast to continue to rise (Moon, 1983), the incentive for those veterans without supplemental coverage to seek VA health care increases. Thus, only elderly veterans with no other subsidized health insurance, or veterans with Medicare whose additional health insurance coverage does not include Medicaid or employer-subsidized private insurance, were assigned veterans' health care benefits. Because of technical problems involved with estimating the insurance value of VA health benefits,¹⁷ and because of the similarity of VA health benefits with combined Medicare and Medicaid coverage in most states, the difference between the combined national average insurance value of Medicaid and Medicare and other subsidized health care benefits (usually Medicare only) was assigned to the 2.25 million noninstitutionalized veterans over age 65 on the CPS tape who met the conditions outlined above. Overall, these benefits averaged \$561 per elderly veteran in 1979. The aggregate value of VA health benefits assigned to elderly veterans was \$1.4 billion, about 32 percent of the total \$4.4 billion in noninstitutional VA health care outlays in 1979 (U.S. Veterans Administration, 1980).

Among the noninstitutionalized nonelderly, veterans of any income level who listed a disability which reduced their ability to work were assigned a VA medical care insurance value equivalent to that of a similar Medicaid disability beneficiary. This accounted for \$1.0 billion of total outlays,¹⁸ leaving \$1.9 billion to distribute among a potentially eligible population of over 22 million nonelderly nondisabled veterans. Among these, we looked for nondisabled veterans with no other source of subsidized health insurance (i.e. no Medicare, Medicaid, or employer insurance) who had incomes below 150 percent of the official poverty line. These 3.0 million veterans were assigned an average insurance value of \$629 per person, the average benefit available to nondisabled adult Medicaid beneficiaries, to add up to \$1.9 billion in total benefits.

Finally, the value of the government subsidy for publicly owned housing or subsidized rentals was estimated using the 1979 Annual Housing Survey (AHS). Subsidized units were hedonically matched to unsubsidized units according to the location and physical characteristics of the subsidized unit in order to estimate the private market rental value of the subsidized unit. The difference between this assigned private market value and the rent paid by the public housing tenant is the market value of the housing subsidy. In 1979 aggregate value was \$2.4 billion and the average value was \$980 for each beneficiary household. AHS public housing tenants were

statistically matched to similar CPS units using a cold-deck procedure (see U.S. Bureau of the Census, 1982, for additional detail).

Employment-Related Benefits. The March 1980 CPS contains wage and salary income data for a large group of U.S. workers. For the first time, the March CPS also asked workers about employer or union pension plan coverage and health insurance coverage. Respondents indicated whether the employer had a pension or health insurance plan, whether or not they were covered by their employer's plan, whether the employer subsidized the health insurance plan if they were covered, and whether they had individual or family coverage. No other information concerning nonwage compensation was obtained. Two 1977 private nonfarm surveys collected establishment data on employer outlays for various types of fringe benefits according to industry and occupation in 1977 and 1979. The 1977 data tapes for the Employer Expenditures for Employee Compensation Survey (EEEC) conducted by the Bureau of Labor Statistics, were combined into fifty-three industry groups, and aggregate outlays were tabulated for various types of benefits as a percentage of wage and salaries. These tabulations provide the basic value-of-benefit data assigned to CPS workers. Data from the 1977 Employment Cost Index Survey (ECI) were used in two ways: first, to update fringe benefit values to 1979, and second, after the EEEEC-based imputation, as a check against the occupation-specific consistency of the imputed CPS

benefit value data. In assigning benefit values to each worker, several different microsimulation techniques were employed. The procedures used are only outlined here; readers seeking a more complete explanation should consult Smeeding (1983, 1984a).

Private nonfarm employer contributions to pension and retirement plans and to savings and thrift plans totaled \$47.3 billion in 1979. Over 96 percent of these contributions were for pension and retirement plans. Equal percentage amounts of pension contributions were assigned to workers reporting pension coverage on the March 1980 CPS. Dollar aggregates for determining these pensions were taken from the 53 industry-specific EEEEC groupings for 1977, scaled up to 1979 by the change noted in the ECI. No acceptable alternative to this admittedly crude pension benefit assignment technique is currently available on a nationwide basis. Pension contributions for federal, state, and local government employees totaling \$16.3 billion were assigned by matching government employees who indicated pension coverage by two-digit CPS major occupation code to private nonfarm workers receiving a similar benefit. Since most government employee fringe benefits are allegedly determined by some type of comparison to private sector "equivalent" workers, this procedure was deemed acceptable. However, because government employee pension plans are in fact usually more generous than private sector plans (Quinn, 1983), our procedure resulted in a very conservative estimate of the pension contributions for government employees.

In the case of health insurance benefits, average weekly premiums were assigned to private nonfarm workers reporting employer-subsidized HI on the March 1980 CPS, according to family or individual coverage status. Premium amounts were obtained from the 1978 Battelle Employment Related Health Benefit Survey (ERHB). These benefit amounts varied by industry and occupation grouping, by family/individual coverage, by employer percentage of premium paid, and by total premium cost of the policy. From these data, average premiums per employee for each type of plan (family or individual) were obtained along with the variance in employer-employee contributions and benefit levels within industry groups. These premium values were updated to 1979 using data from the Health Insurance Association of America and were distributed to preserve the intraindustry and intraoccupation benefit-level differences noted in the ERHB. Next, numbers of workers whose employer paid all or part of the health insurance premium were estimated by occupation and industry. The employer percentage of premium paid was then either 100 percent or something less -- depending on the type of coverage and industry as determined by the ERHB and the March 1980 CPS. Workers were then assigned a net employer contribution based on coverage status and number of weeks worked. Dollar amounts were aggregated and scaled on an equal dollar per worker basis and prorated for weeks worked, to meet EEEEC industry-specific total dollar amounts, adjusted to 1979 using the ECI. Health insurance benefits of \$36.7 billion were assigned in this way.

Health insurance benefits for government employees were assigned by matching government workers to private sector workers according to type of employer health insurance coverage indicated on the CPS (single or family coverage), type of worker (full or part time, full or part year), and major occupation code. Using this procedure, \$10.3 billion in benefits were assigned to government employees and their family members.

The Battelle ERHB Survey also contained information on the percentage of private nonfarm employees in various industries who benefited from other insurance: life, sickness/accident, and private disability insurance, or none of these, divided into establishments with and without group health insurance plans. Benefits were calculated by assigning coverage according to industry group-specific probabilities estimated for those workers with and without health insurance according to the ERHB Survey. Once a worker was selected, life insurance was estimated by giving each covered worker the same percentage of salary in insurance protection, determined by the ECI-adjusted EEEEC total value of contribution divided by covered workers' total wages within an industry. Sickness/accident and private disability insurance was estimated by assigning ERHB-based probabilities to determine coverage. Government workers were assigned equivalent benefits by matching them, according to type of worker and occupation, with private-sector employees and by assigning government workers the

same probability of receipt of employer subsidies for life, sickness/accident, or disability insurance as private workers.

Legally required contributions in the private nonfarm economy consist of social security and railroad retirement contributions and other required contributions for workers' compensation, unemployment insurance, and other minor legally required payments. Social security was calculated simply as .0613 percent of wages up to a maximum of \$1405 at \$22,900 (the OASDHI earnings tax ceiling). Other payments were calculated by dividing EEEEC industry-specific total amounts (adjusted to 1979) by total wages and salaries of all workers up to \$10,000 per year per worker (the most common unemployment insurance payroll tax base) within that group. This same percentage was applied to wages (up to \$10,000) and assigned for all workers within an industry. In total, legally required contributions amounting to \$79.3 billion were estimated for the private nonfarm economy in 1979. Nonfederal government workers were assigned a probability of enrollment in the social security system, and on this basis employers' social security payroll taxes and other legally required contributions were assigned. Federal workers were assessed Federal Employee Retirement Contributions according to law. Government employee legally required contributions totaled \$18.4 billion.

Altogether, employment-related benefits totaled \$219.2 billion--\$121.5 billion (55.5 percent) in discretionary benefits and

\$97.7 billion (45.5 percent)--in legally required contributions to various social insurance and public employee retirement plans. The large majority of these contributions, \$211.3 billion (96.4 percent), were for nonelderly households.

Housing Income In Kind. Private income in kind from housing comes from either implicit rent (for owner-occupiers) or free rent ("no cash rent paid") for those renters who so indicate on the CPS. Government-subsidized privately or publicly owned housing also reduced housing costs for over 2.5 million units in 1979. Almost three-quarters of households headed by a person aged 65 or over and 65 percent of nonelderly households are owner-occupiers. While a large majority of the elderly households have fully amortized mortgages, few of the nonelderly are so situated. Implicit rent accrues to a household when its after-tax net cost of owning (including mortgage interest, taxes, depreciation, and maintenance) falls below the market rent for their home. Over 80 percent of elderly homeowners, almost 10.0 million, receive some implicit rent. Among the nonelderly, only about 46 percent of homeowners, 19.4 million units, are in this situation.

About 25 percent, or 4.2 million, elderly households live in rented units. Of these, .43 million or 10.1 percent are occupied by persons who paid no cash rent in 1979. Another .86 million elderly households, 20.4 percent of all renters, live in government-subsidized private or public (government-owned) housing units. Thus

over 30 percent of all elderly renters receive some type of housing income in kind. When owner-occupiers, those paying cash rent, and publicly subsidized renters are combined, more than 70 percent of all elderly households receive some form of housing income in kind.¹⁹

Among the nonelderly, over one-third of all households (21.42 million) live in non-owner-occupied units. Of these, 1.64 million live in publicly subsidized housing, while 1.00 million live rent free. Thus, only 12.3 percent of nonelderly renters receive a housing subsidy. Counting those receiving implicit rent as well, about 35 percent of the nonelderly received housing income in kind in 1979.

Using a procedure which hedonically matched owner-occupied homes to similar rented units on the 1979 Annual Housing Survey (AHS), a gross rental value for owner-occupied homes was estimated. From this gross rental value the after-tax costs of owning homes--mortgage interest, property taxes, insurance, depreciation, and maintenance--were subtracted, leaving an average net implicit rental value of \$1115 for elderly beneficiary units and \$931 for nonelderly units. These AHS owner-occupiers were then statistically matched to similar 1979 CPS owner-occupiers using a cold-deck imputation procedure developed by the U.S. Bureau of the Census for these purposes.

These average values compare well with other estimates of net implicit rental value for the elderly and nonelderly. For instance, in 1978 average implicit rent for elderly units only, compiled by Hurd and Shoven (1982) was \$919. Estimates made by Pearl and Frankel (1982) for 1979 averaged \$1170 for the elderly and \$1030 for the nonelderly. Hurd and Shoven calculated their estimate as a constant 3 percent of home value, while Pearl and Frankel used 3 percent of home equity. Danziger et al. (1984) calculated a net rental value of \$948 for the elderly and \$730 for the nonelderly in 1973, using the 1972-73 Consumer Expenditure Survey (CEX), from which they net out costs of owning from the gross rental value estimates included on the CEX tape. Using the residential rental component of the Consumer Price Index to translate values into comparable dollar terms, the Danziger estimate would be \$1402 for the elderly and \$1078 for the nonelderly in 1979. Thus we feel that our estimates of net implicit rental value are quite reasonable and consistent, and perhaps even conservative, as compared with similar estimates.

We were not able directly to ascertain the market value of rental housing for which the occupant paid no cash rent, nor were we able to determine the quality or physical characteristics of such rental units. Although it is not clear whether such benefits are payments in kind for services rendered (e.g., for apartment managers) or whether they are pure in-kind transfers (e.g., persons living rent-free in a housing unit owned by a relative), the

beneficiary clearly receives some amount of income in kind. In order to obtain a very rough lower bound on the value of such benefits, a value of \$1200 per year (or \$100 per month) was assigned to these occupants. This amount was adjusted to reflect location-specific relative rental housing cost indices for the elderly as determined by the U.S. Bureau of Labor Statistics (1978). When the imputed values were distributed, weighted, and summed, the actual average value was \$1165 for the elderly and \$1214 for the nonelderly.

When these two forms of private housing income in kind are combined, they total \$30.8 billion in 1979. Because larger numbers of elderly units were owner/occupiers during the 1970s, their private housing income in kind of \$11.6 billion (Table 1) was 6.5 percent of money income, as compared to \$19.2 billion or 1.4 percent of money income for the nonelderly.

Notes

1. A "major" source of nonmoney income is here defined as one which had a market value of \$500 million or more in 1982 dollars.
2. The "market value" of benefits here is measured at their cost to the government if a transfer, or their dollar cost if market determined. While government cost and market value may sometimes differ (see Smeeding, 1984a) they are treated as interchangeable terms in this paper.
3. Defined here as households headed by a person age 65 or older.
4. Of this total, \$66.7 billion in employee payroll taxes are later treated as employee contributions to social insurance plans and are added back into income.
5. Some substantial fraction of unrealized gains accrue to financial intermediaries such as fiduciaries, blind trusts, and pension plans, making them difficult to allocate to households in any case.
6. The household was chosen over the Census Bureau family vs. unrelated individual differentiation in order to take account of both income pooling and economies of scale in usage of household durables among unrelated elderly individuals living together.
7. Estimates of the cash-equivalent value of employer health and pension contributions are confounded by lack of an adequate group for which we can measure employee willingness to pay for health insurance at the same group-rated, after-tax price faced by employers.
8. Expert equivalence scales for health care have not been developed. Consumer-expenditure-based equivalence scales that seek to estimate the budget share devoted to health care for different families are confounded by the effects of different quality and quantity health insurance on these outlays. Thus because they only adjust for differential out-of-pocket expenses, equivalence scales rarely adjust for differing medical needs in an adequate fashion.
9. Pearl and Frankel (1982) show that average home equity among middle-aged homeowners (head aged 35-65) exceeded average home equity among the elderly in 1979.

10. In Table 7 the shares of the upper quintile do not change very much; in fact, the upper quintile share decreases slightly. This results from the fact that because household size rises with income, there are fewer upper-income households in the upper-income person quintile. Thus the effect of employment-related benefits and housing income in kind is smaller when measured on this basis.
11. Since 1979, the Reagan administration tax changes have lowered the tax burden at the top end of the income distribution while increasing it at the lower end. See Palmer and Sawhill (1984).
12. Cox and Raines (1985) report that in August 1979, 7.7 percent of all families received private food transfers averaging \$163 per month, while .9 percent received both food stamps and private food transfers in that month. In addition they report monthly transfers for mortgage payments, utilities and/or insurance averaging \$267, \$62, and \$420 respectively to another 2.5 percent of the population surveyed. Their data did not indicate whether or not these transfers were inter- or intrahousehold, the age of the recipient, or the regularity of the transfer. Their data nevertheless support the findings of Moon (1977) that elderly families are more likely to transfer larger amounts of income to younger families than they are likely to receive such transfers.
13. Several additional lesser government programs such as Maternal and Child Health Care, CHAMPUS and CHAMPVA (for the military) also provide aid, but they are not treated here.
14. VA health care should not be confused with CHAMPUS or CHAMPVA coverage. The former covers active-duty members or retired members of the uniformed services and their families or survivors. The latter program covers medical care for spouses or children of veterans with permanent or total service-connected disabilities or survivors of such veterans.
15. Although there is some question of the future availability of VA Medical Services for aged veterans owing to the massive numbers of World War II and Korean War Veterans who will reach age 65 within the next decade, current policies permit these persons to receive free care at VA health centers (Smeding, 1984a).
16. Institutional care benefits were excluded because in order to receive Medicaid institutional benefits one must forfeit virtually all cash income. Thus their value to the elderly may be virtually nil. Medicare institutional benefits are, however,

included because they apply only to acute conditions where they serve as temporary, lower-cost substitutes for hospital care. For more on this general issue see U.S. Bureau of the Census (1982).

17. The group at risk for VA health care benefits includes those with service-connected disabilities, indigent veterans of all ages, and veterans aged 65 or older. Veterans Administration data for 1979 did not contain an "ever-received care" count of indigent veterans. Similarly, only those with service-connected disabilities who used VA health centers in 1979 were counted. Other eligible veterans with such conditions were not counted. Finally, the VA does not separately tabulate a count of those veterans who ever received care; to count total admissions to VA hospitals or total medical care recipients would count regular recipients several times. For these reasons the alternate strategy described in the Appendix was followed.
18. This benefit averaged \$1311 in 1979 (U.S. Bureau of the Census, 1982).
19. This does not include those low-income elderly who might also have qualified for low-income energy assistance (fuel bill subsidies) during 1979.

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