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**THE EQUITY OF SOCIAL SERVICES
PROVIDED TO CHILDREN AND SENIOR CITIZENS**

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Abstract

This paper marshals a variety of evidence in considering the degree of equity in the U.S. government's treatment of children vis-à-vis adults, particularly the elderly. We begin by showing that poverty rates among American children have increased dramatically over the past two decades, while those of the elderly have fallen. Next, we show that during the same period, consumption and income levels among the elderly have risen relative to those of other Americans, including children.

The paper then turns to the role of government policy in influencing these trends. First, we document the high level of transfer payments going to the elderly relative to children, even if educational expenditures on children are included. We then argue that such point-in-time comparisons are invalid because they fail to consider that at any given time, children and the elderly are at different stages of their life cycles. Controlling for this fact requires an examination of the government's fiscal treatment of different generations over their entire lifetimes. Thus, we present/project lifetime net tax rates for generations born since 1900 as well as for future generations. The results indicate that, given current policy, today's and tomorrow's children could wind up paying as much as 70 percent of their lifetime income to the government, while the current elderly will pay only about 25 percent on average. Although the paper cautions that generational equity is in the eye of the beholder, the disparity reported here does considerable violence to the norms of generational fairness.

I. Introduction

This paper examines the U.S. government's current and prospective fiscal treatment of American children from the perspective of transfer payments now being received and government services now being purchased on their behalf. It also considers the benefits and services today's children will receive as well as the taxes they will pay in their adult years.

In examining the transfer payments and services that the current generation of children will receive and the taxes they will pay over their lifetimes, we seek to answer the question, "Are today's children being treated equitably compared with other generations, particularly the current elderly?" Our answer relies in part on a new method of comparing the lifetime net tax burdens (taxes paid less transfers received) of different generations. This method, called generational accounting, overcomes the difficulty encountered with point-in-time comparisons between any two generations, namely, that each is at a different stage of the life cycle.¹

To understand this problem, consider a country with a long-standing policy of financing transfer payments to children through taxes on the elderly. While a point-in-time, say time- t , comparison of the treatment of children versus their elders would suggest that children are being treated relatively favorably, it ignores the fact that the time- t elderly received the same amount of transfers when they were children, and that the time- t children will pay the same amount of taxes as the time- t elderly when they are old. Thus, from a lifetime perspective, the time- t children in this example are being treated neither better nor worse than the time- t elderly. In contrast to current-flow accounting, generational accounting, when applied in this hypothetical setting, documents the equal lifetime treatment of the time- t children and elderly. It thus provides a useful tool for comparing the fiscal treatment of different generations despite their being at various stages of the life cycle.

¹See Kotlikoff (1992) and Auerbach, Gokhale, and Kotlikoff (1991).

Section II begins by pointing out that poverty rates among American children have increased steadily over the past two decades, while those of the elderly have fallen. The paper then documents the concomitant rise in the income and consumption levels of older generations relative to younger generations, including children. Finally, we look at the government's role in altering the living standards of children vis-à-vis the elderly. Our results show that much of the current plight of America's youngest citizens is traceable not to a lack of government financial support, but to the breakup of the family unit, which has left almost one-quarter of the nation's children dependent on just one parent.

While section II's discussion of demographics provides some perspective on the limits of government policy in determining the living standards of children, the question remains as to whether the government has offset or exacerbated the relative economic situation of *today's* children. The rest of the paper considers this question from both a point-in-time and a lifetime perspective. Section III examines the current flows of transfer payments and services being provided to children and compares them with those going to senior citizens. Section IV presents the generational accounting approach to examining the lifetime net tax treatment of different generations. In particular, we compare the lifetime net tax rates of each generation of males and females who were born or who will be born in this century. A generation's lifetime net tax rate is defined as the ratio of its lifetime net tax payment to its lifetime labor earnings. Lifetime tax rates for different generations are calculated based on a continuation of current fiscal policy as well as under alternative policies. Section V summarizes the main findings of the paper and presents our conclusions.

II. The Relative Economic Condition of America's Children

A. Poverty Rates among Children and the Elderly

Nearly 13 million American children are currently living in poverty.² About 35 percent of these children are black and at least 20 percent are Hispanic. This translates into a child poverty rate of nearly one in five overall, two in five for black households, and more than one in three for Hispanic households.

The 20 percent aggregate child-poverty rate, however, tells us only about the fraction of children who are poor at a particular point in time. It does not indicate the percentage of those who were poor in the past or who will be poor in the future. Since there is considerable mobility of children into and out of states of poverty, one can surmise that more than 20 percent of American children will experience one or more such spells before reaching their eighteenth birthday. Indeed, calculations by Ellwood (1988), based on panel data, indicate that more than one-third of the children born around 1970 experienced some years of poverty before reaching age 10.

As figure 1 shows, childhood poverty has been increasing steadily over the last two decades. In 1970, only 15 percent of American children were classified as impoverished. By 1990, that figure had risen to 20 percent. Over the same period, poverty rates declined among the elderly. In 1970, almost one-quarter of all Americans age 65 and older were officially poor. By 1990, that figure had fallen to 12 percent.

²Poverty-rate figures are taken from U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 168 and earlier reports.

B. Demographics and Child Poverty

The difference in poverty trends between the young and old raises the question of equity in the government's treatment of children vis-à-vis the elderly. However, other factors clearly seem to be at play, at least as regards higher child poverty rates. One of the most important of these is the increase in the fraction of American children living with only one parent. In 1989, 73.1 percent of all U.S. children, including 67.0 percent of Hispanic children and 38.0 percent of black children, lived with both parents. The respective figures for 1970 were considerably higher at 85.2 percent, 77.7 percent, and 58.5 percent.³ Not surprisingly, child poverty rates are much greater among single-parent households than in two-parent households. Currently, almost 50 percent of children living with one parent are poor, compared to only 10 percent of those living in intact homes. All told, about two in every three poor children come from single-parent families.

The increase in the fraction of children living with only one parent can be traced to two factors: the rising divorce rate and the increasing share of children born out of wedlock. Today, close to 13 percent of Americans age 35 to 44 are divorced, up from 2.9 percent in 1960.⁴ As a consequence, two children in five now grow up in broken homes.⁵ Concern about children living in single-parent homes would be mitigated if the absent partner were a frequent visitor, but quite often this turns out not to be the case. According to a recent survey, almost one-quarter of divorced fathers had no contact with their children in the previous five years and another 20 percent had not seen their children during the preceding year.⁶

³ *Statistical Abstract of the United States*, 1991, table 70, p. 53.

⁴ *Business Week*, May 20, 1991, p. 76.

⁵ See Jane E. Brody, "Children of Divorce: Steps to Help Can Hurt," *The New York Times*, July 23, 1991. The 1989 *Statistical Abstract of the United States* (table 132, p. 87) indicates that in 1985, 1.73 percent of all children age 18 or younger had parents who divorced that year. The comparable percentage for 1970 was 1.25 percent.

⁶ The survey, by Dr. Frank F. Furstenberg, Jr., and his colleagues at the University of Pennsylvania, is cited in Brody (1991). See footnote 5.

The increase in the fraction of children born to unmarried women since 1970 is even more dramatic than the increase in the divorce rate. In 1970, just over 10 percent of children were born to unwed mothers. By 1990, that figure had topped 25 percent -- an explosion that transcends race. In the case of whites, the 1970 share of births to unwed mothers was 6 percent. By 1988, that figure had tripled to 18 percent. For blacks, the respective figures were 38 and 64 percent.

C. Recent Changes in the Relative Consumption Levels of Different Age Groups

The increase in childhood poverty relative to that of adults is suggestive of a general deterioration in the living standards of children vis-à-vis their elders. However, the evidence is inconclusive for the simple reason that impoverished children are only a segment of the entire population of children. One way to assess the overall change in the living standards of children relative to adults is to look at changes over time. To do that, we look at age-consumption profiles, or the ratio of one age/sex group's average consumption to that of a reference group. The reference group used here is 40-year-old males.

The data sources employed in our analysis are the 1972-73 and 1987-90 Survey of Consumer Expenditures, issued by the Bureau of Labor Statistics. The procedures used to form average consumption by age and sex for each of the survey periods are described in detail in Kotlikoff and Sabelhaus (1993). Briefly, expenditures reported in the surveys were first benchmarked against the National Income and Product Accounts (NIPA) totals to adjust for under- or overreporting. Next, each household's adjusted expenditures were distributed to individual household members, producing a data set consisting of individuals with particular consumption expenditures and particular characteristics. The third step involved averaging these consumption expenditures across all individuals of a particular age and sex to obtain the average consumption values for each age/sex category. The last step entailed adding to these values the age- and sex-specific average amounts of

consumption expenditures included in the NIPAs but excluded from the consumer expenditure surveys. An example is health care expenditures by third-party insurers, including the government.

Figures 2 and 3 present the calculated age-consumption profiles for 1972-73 and 1987-90 for males and females, respectively. Note that both figures show that in the late 1980s, consumption by the elderly grew relative to that of other age groups, including children. Young adults -- those between the ages of 20 and 40 -- experienced a particularly marked decline in their relative levels of consumption.

To obtain a quantitative sense of the amount by which children's consumption has fallen since the early 1970s relative to that of the elderly, consider the average consumption among all 10-year-olds versus that of all 70-year-olds. In 1972-73, consumption among 10-year-olds averaged 37 percent of the average for 70-year-olds. By 1987-90, the corresponding level was only 31 percent, a 16 percent drop.

D. Recent Changes in the Relative Incomes of Different Age Groups

What explains the recent increase in the elderly's relative consumption? The answer is that over the past 20 years or so, this group's income has grown much more rapidly than that of any other age group. Figure 4, reproduced from Boskin, Kotlikoff, and Knetter (1985), shows the age-income profiles for different age groups over the 1968-84 period. Specifically, it plots the ratio of the average income of households whose heads are in particular age groups divided by the average income of households whose heads are age 35-44.

Note the sustained increase in the relative income of households age 65 and older over the period charted. In 1968, income per elderly household averaged 43 percent of income per household age 35-44. In 1984, this figure was 52 percent, a 21 percent rise over 16 years. This increase represents an even larger percentage -- 45 percent -- relative

to households age 25-34, since, as figure 4 shows, the latter experienced a drop in their income relative to the 35-44 age group.

If anything, figure 4 is likely to *understate* the recent growth in the relative income of the elderly. The reason is that income as defined in the Boskin study includes only labor earnings, property income, private pension income, welfare benefits, annuities, unemployment benefits, and Social Security. It does not include the imputed value of government-provided health care benefits, such as Medicare and Medicaid.

Figure 5, also from the Boskin study, examines the source of older Americans' relative income growth. First, it plots the shares of particular types of income received by the elderly between 1968 and 1984. Second, it plots the ratio of particular types of income that elderly households received, on average, to the corresponding average for households age 35-44. Note the rapid growth in the relative Social Security and property income of the elderly as well as the decline in their relative labor earnings. The latter can be traced to the elderly's shrinking labor force participation over this period.

III. The Government's Treatment of Children Relative to Other Age Groups -- A Point-in-Time Perspective

A. Flows of Transfers and Taxes by Age and Sex

The last section documented the decline over the last 20 years in the economic well-being of children relative to the elderly. This section asks whether the government (federal, state, and local) has offset or worsened that trend. One way to approach this question is to consider the taxes paid and the direct transfers received by different age groups.

To that end, tables 1 and 2 present these values for various age-sex groups for the years 1970 and 1990. The tables are constructed using cross-section profiles of relative transfer receipts and tax payments by age and sex in order to distribute aggregate transfers and taxes according to those two demographic characteristics. As described in Auerbach,

Gokhale, and Kotlikoff (1991), the cross-section profiles are obtained from various microdata sets, the most important of which is the Census Bureau's Survey of Income and Plan Participation. Values for both aggregate transfer receipts and tax payments are obtained from the NIPAs and include all federal, state, and local government taxes and transfers. Hence, tables 1 and 2 provide a comprehensive picture of the gross payment flows that the government made to, and took from, different age-sex groups in 1970 and 1990.

Each of the tables reports, for selected age-sex groups, the group's average net payment, defined as its average tax payment minus its average transfer receipt. The tables also decompose average tax payments into average labor income tax payments, average capital income tax payments, average payroll tax payments, and average excise/sales tax payments. Average transfer receipts are decomposed into average non-Medicare Social Security benefits (OASDI), average government-provided health care benefits (primarily Medicare and Medicaid), and average welfare benefits (primarily Aid to Families with Dependent Children, food stamps, unemployment insurance, and general relief). All figures are reported in 1991 dollars.⁷

If one focuses solely on the transfer payments recorded in tables 1 and 2, one sees that older Americans have benefited much more than have children. For example, in 1970 the average transfer payment made to 70-year-old women was \$5,120, while the average payment to 10-year-old girls was \$350. In 1990, the comparable figures were \$10,467 and \$410. In 1970, the ratio of the average transfer payment to 70-year-old women to that of 10-year-old girls was 14.6. By 1990, that figure had grown to 25.5.

The elderly do, however, pay out much more in taxes than do children, even if one imputes sales and excise tax payments to children. For instance, in 1990 the average tax

⁷One aspect of the tables that may seem anomalous is the excise tax payments imputed to children. These taxes represent the payment of sales and excise taxes on goods and services purchased for children by their parents. Admittedly, a case could be made for imputing these payments to the parents.

payment was \$7,412 for 70-year-old women, but only \$799 for 10-year-old girls. If one subtracts these transfers from the taxes paid, the resulting net payment figures still show an enormous difference in the flow of income from the government to the elderly versus children.

B. Flows of Age-Related Government Services

The flows of transfers and taxes just considered do not provide a complete picture of the annual flow of economic resources between the government and the private sector. The main omission is the flow of services provided directly by the government as a consequence of its purchases of goods and services. These services are wide-ranging and include items such as the protection afforded by national defense spending, reduction of travel time and transportation costs arising from federal, state, and local road systems, provision of public education, and the general knowledge that has filtered down from the space program. Unfortunately, with the exception of educational expenditures (which in the main benefit children), government purchases consist of public goods, whose advantages cannot be ascribed to particular generations or groups within generations.

Be that as it may, educational expenditures are still worth considering because they are so large. In 1990, combined education purchases for elementary education by federal, state, and local governments totaled \$220 billion in 1991 dollars -- nearly equaling the amount spent on that year's total Social Security retirement and survivor benefits. If we divide that \$220 billion by the 72.3 million children alive in 1990, we arrive at a per child educational expenditure level of \$3,042, which swamps the average level of transfer payments children received that year. The comparable calculation for 1970 leads to an average educational expenditure of \$1,785 per child (again measured in 1991 dollars).

These figures indicate several things. First, they show that educational expenditures far outweigh direct transfer payments as a means of providing assistance to children. Second, they reveal that since 1970, there has been a dramatic increase (70

percent) in real spending per elementary school-age child. Third, they indicate that even if one adds to current per-child transfer payments today's historically high real spending per child on education, the government's total payment flow to children is still considerably smaller than the per capita transfers received by the elderly. This is true whether the calculations are net or gross of tax payments by the elderly.

In sum, if one ignores the fact that children and the elderly are at different stages of their life cycles -- and thus can be expected to receive different treatment by the government -- one can make a strong case that children are getting the short end of the stick.

IV. The Government's Treatment of Children Relative to Other Age Groups -- A Lifetime Perspective

A. Lifetime Generational Accounts

While the flow figures are striking, ignoring the fact that children and the elderly are at different stages of their life cycles seems clearly inappropriate. Does it make sense, for example, to claim that the current elderly are being treated better than current children because they generally receive large Social Security benefits? Such an assertion ignores, among other things, the fact that the current elderly did not receive much in the way of Social Security benefits when they were children, and that today's children will receive larger Social Security benefits when they are old.

By controlling for the life cycle, generational accounts can help us to assess the true degree of generational equity underlying government policy. Generational accounts indicate, in present value, the average net taxes that members of a generation can expect to pay over their remaining lives. The generational account at birth of a given cohort is particularly interesting, as it indicates the average present value of the net taxes the generation's members will pay to the government over their entire life spans. Such lifetime accounts can be used to compare the government's treatment of different generations,

since all taxes and transfers taken from or paid to a generation over each stage of its life cycle are included.

In discounting taxes and transfers back to the year a generation is born, lifetime generational accounts place a smaller weight on taxes paid and transfers received at later stages of the life cycle. This makes sense because a dollar of taxes paid in the future is less painful (in economic terms) than a dollar paid in the present, and a dollar of transfers received in the future is less valuable than a dollar received in the present. In discounting each generation's life cycle of tax payments and transfer receipts back to age zero, lifetime generational accounts in effect produce a single lifetime net tax bill that each generation faces upon birth.

B. What Constitutes Generationally Equitable Fiscal Policy?

In considering which cross-generation pattern of lifetime generational accounts constitutes equitable lifetime treatment of different generations, it may help to start by taking the simple case of an economy in which all members of a given generation are identical, productivity and population growth rates are zero, and the government purchases no goods or services. In such a world, taxes and transfers would be used only to redistribute wealth across generations. What would an equitable lifetime treatment of different generations entail in such an economy? If we interpret equity to mean treating each generation identically, then an equitable policy would require setting the lifetime generational accounts of each generation to zero.

To understand this requirement, suppose, to the contrary, that the government decides to make the lifetime generational account of a particular generation negative, i.e., it wants to provide net transfers to a particular generation. Since this largess would have to be paid for by some other generations, the government's decision would necessitate making their lifetime generational accounts positive. Consequently, only zero lifetime

generational accounts are consistent with equal treatment of all generations given the circumstances we have assumed.

This notion of equity -- that each cohort's lifetime generational account should equal zero -- carries over to the case in which both government purchases and productivity growth are zero, but there is positive population growth. In this scenario, future generations are obviously more numerous, but setting each one's lifetime account to zero ensures that members of each generation will bear the same fiscal burden -- namely, zero.

Now let's add government purchases to our hypothetical economy, but assume that these are of no value to any generation. In this case, equitable treatment would mandate setting each generation's lifetime account to the same positive value, where this amount is determined such that the present value of all lifetime generational accounts of all current and future generations pays for the present value of government purchases.

Next take the case where government purchases do provide services of positive value to some earlier generations, but where all such purchases occurred in the past. Further, suppose that the generations who received these benefits were not required to pay for them. This means that existing and future generations would have to pick up the tab.⁸ Equity in this context again mandates setting each current and future generation's lifetime account equal to the same positive value -- once again the amount needed to pay off, in present value, the bill these generations inherit collectively. The same situation would arise if the bill bequeathed to current and future generations were not for past government services enjoyed by older generations, but rather for past net transfers made to them.⁹

⁸This bill might, for example, be presented to current and future generations in the form of official government debt.

⁹The initiation of an unfunded "pay-as-you-go" Social Security system is one example of a situation in which current and future generations are forced to pay for transfers to a previous generation, namely, the one that is old when the system is initiated. This start-up generation receives Social Security benefits without ever having paid Social Security taxes. As a consequence, later generations are forced, when young, to make contributions to a system that provides them with less old-age income than they would have earned had they been free to invest that money privately. The lower-than-market rate of return that

Finally, suppose government purchases do provide services of value to current as well as future generations. Here, equitable government policy would involve 1) providing each generation with the same level of services, and 2) making each generation pay the same amount for these services (i.e., setting the lifetime accounts of all generations at the same positive amount needed to cover, in present value, the government's spending).

Thus far, we have argued that generationally equitable fiscal policy entails equal lifetime accounts for all generations. But this prescription becomes less clear once we alter our assumptions to include positive productivity growth. In this case, generations born in the future will have higher lifetime incomes than those currently alive. If government policy is intended to equalize the welfare of all generations, it must find a means to redistribute, on an ongoing basis, from as-yet unborn generations toward those currently alive. As suggested above, the available mechanism is to set the lifetime accounts of earlier generations at lower values (not necessarily positive values) than those of later generations. As can easily be shown, such a policy requires the government to set successive generations' lifetime accounts equal to a larger and larger fraction of their lifetime incomes. In other words, the lifetime tax rate, or the ratio of a generation's lifetime account to the present value of the income it earns over its entire life span, must approach 100 percent asymptotically.¹⁰

While positive productivity growth coupled with the goal of equalizing each generation's after-tax lifetime income means that today's children should face higher lifetime tax rates than today's adults, including the current elderly, the goal of perfect equality of welfare across generations is not sacrosanct. Society may view different intergenerational distributions of after-tax income as equitable, even though these do not

Social Security pays on contributions is the means by which current and future generations are forced to pay for the free benefits received by the start-up generation of elderly.

¹⁰Suppose that each generation's income grows at rate g . Then the tax rate required to equalize the after-tax lifetime incomes of each generation is $1 - [r/(r-g)] / (1+g)^t$, where r is the rate of interest and t indexes the year the generation is born. This formula assumes that a generation's income is independent of the tax rate it faces.

entail perfect equality of after-tax lifetime income. For example, society may consider the higher levels of productivity that future generations will enjoy as their natural inheritance. Under this view, equitable fiscal treatment of different generations requires each to pay the same *share* of its lifetime income to finance expenditures on public goods and services as well as past transfers to now-deceased generations. Such equal proportional sacrifice means, of course, that each generation should face the same lifetime tax rate.

C. Lifetime Tax Rates of Americans Born since 1900

Ultimately, the cross-generational distribution of lifetime accounts that constitutes an equitable distribution is a value judgment that cannot be resolved by economists or any other social scientists. What economists can do is to help society think through its decision and to show what generational lifetime net tax policy is actually in place. Hopefully, the above discussion has contributed to accomplishing the first task. The second task -- understanding actual U.S. generational policy -- is addressed in table 3, which shows the lifetime net tax rates of generations of American males and females born since 1900.

Lifetime net tax rates are defined here as a generation's lifetime generational account (the age-zero present value of the average net taxes its members pay in each year of their remaining life) divided by the present value of the generation's lifetime labor income. As described in appendix I, section F of *Budget Baselines, Historical Data, and Alternatives for the Future* (Office and Management and Budget [January 1993]), lifetime net tax rates are based on estimates of actual taxes paid and transfers received between 1900 and 1991 as well as on projections of future taxes and transfers.¹¹ Lifetime income is defined as the present value of pre-tax lifetime labor income. Ideally, one would include

¹¹This part of the current paper draws heavily on that work, which was written by Alan J. Auerbach, Jagadeesh Gokhale, Laurence J. Kotlikoff, and several OMB staff members. The principal OMB author was Robert Kilpatrick.

the present value of anticipated inheritances in forming lifetime income, but unfortunately, that information is not available.

The lifetime net tax rate for males begins at 17.8 percent for those born in 1900 and rises to 33.9 percent for those born in 1991. The corresponding figures for females exhibit a quite different pattern. For them, the rate starts at 35.3 percent, declines on average for about 50 years, then rises slightly, leaving a 1991 value of 32.8 percent. The high initial rate for females can be traced to two factors. First, the present value of labor earnings for women born in the early part of the century is low. Second, in allocating taxes between the sexes, we attribute certain types equally to husbands and wives (excise taxes, for example). Hence, women born in the early 1900s have low lifetime incomes, but are imputed with relatively high tax payments. For females born in the postwar period, the absolute size of their lifetime net tax bills is higher, but due to the increase in female labor force participation, so too is their lifetime labor income. This explains why lifetime tax rates for females born in the postwar period are below those of women born around the turn of the century.

Since the allocation of taxes between husbands and wives within marriages is, admittedly, somewhat arbitrary, table 3 also reports lifetime net tax rates for males and females together, calculated as a weighted average of the net tax rate for each sex. Note that in this case the average net tax rate rises significantly over time, from 21.5 percent for the generation born in 1900 to 33.5 percent for the generation born in 1991.

Table 3 also reports gross tax and transfer rates. To calculate these, the present value of a generation's lifetime taxes (or transfers) is divided by the present value of its labor income. This breakdown reveals the growth of government transfer payments during this century. The lifetime transfer rate for males and females taken together nearly quadrupled between 1900 and 1991, rising from 3.3 percent to 12.2 percent. The increase was more rapid, in both relative and absolute terms, for those generations born before World War II than for those born afterward.

Because of the need to pay for the higher gross transfers as well as government purchases, the gross tax rate has also risen markedly in the past two decades. This is in contrast to the net tax rate, which has stayed fairly constant. The gross tax rate for males and females together is 24.8 percent for the generation born in 1900 versus 45.8 percent for the generation born in 1991.

D. The Lifetime Net Tax Rate of Future Generations Based on Current-Services Projections of Existing Generations' Net Tax Contributions

The only figures in table 3 that have not yet been discussed are the lifetime net tax rates to be paid by *future* generations. These rates are derived assuming a current-services projection of the future fiscal treatment of existing generations. Specifically, we add together the remaining (as opposed to lifetime) generational accounts of all existing generations to arrive at the collective net tax contribution they will have to make to pay off the government's existing net debt (gross debt minus gross assets) as well as the present value of its future purchases. By subtracting this contribution from the sum of the government's net debt and the present value of its purchases, we arrive at the present-value amount that future generations will have to pay collectively if current fiscal policies are maintained.

We transform the aggregate present-value fiscal burden to be imposed on future generations into a per capita amount by factoring in projections of future population growth and then assuming that each person born in the future pays the same amount after adjustment for economic growth. The growth adjustment assumes that, on average, members of each successive generation pay $1+g$ times the average amount paid by members of the previous generation, where g is the assumed rate of growth. The amount future generations will pay over their lifetimes divided by their projected future lifetime income provides our estimate of their lifetime net tax rate.

As indicated in table 3, unless either existing Americans are made to pay more on net over their remaining years or government purchases are reduced, future citizens will be faced with lifetime net tax rates of 71 percent -- more than twice the rate projected for those born in 1991 (again based on current services). Of course, the assumption that existing generations, including those born in 1991, will pay no more than the amount suggested by current-services projections is just that -- an assumption. It is made not because it mirrors reality, but rather to illustrate the extent of the imbalance in U.S. generational policy. As we discuss in the next subsection, other assumptions about the evolution of future U.S. fiscal policy, specifically those that place a larger burden on existing generations, lead to lower lifetime net tax rates for future generations, albeit at the price of higher rates for those currently living, particularly today's children.

E. Generational Accounting's Message about the Degree of Equity in U.S. Generational Policy

The figures in table 3 indicate that current American children will be burdened with much higher lifetime net tax rates than the current elderly. The generation born in 1991, for example, could face a 27 percent larger lifetime net tax rate than that facing Americans born in 1920. This projected discrepancy would be significantly exacerbated by any change in U.S. fiscal policy aimed at preventing future generations from paying more than 70 percent of their lifetime income to the government.

Table 4 illustrates two such changes. The first involves capping federal spending between 1993 and 2004 for all mandatory programs except Social Security and federal deposit insurance. Medicare and Medicaid are the two programs that would see the largest cuts relative to their baseline, current-services projections. The second policy is a surtax on the federal individual income tax that would extend over the same years as the cap and that would produce, on a year-by-year basis, the same federal deficit reduction.

Both of these plans would dramatically lower the lifetime net tax rates of future generations. Under the mandatory cap, future Americans would pay only 41 percent of their lifetime income to the government; under the surtax, they would pay 46 percent. However, while both of these means of bringing U.S. generational policy into closer balance would be applauded by future generations, current generations would be less enthusiastic. Take the surtax, for example. Children born in 1991 would be forced to pay 40 percent of their lifetime earnings to the government, rather than 34 percent, the current-services figure. The mandatory cap and surtax policies would also raise the lifetime net tax rate of today's elderly, although by much less, since the changes in net taxes during their remaining years are small when discounted back to the years these generations were born. In the case of the surtax, there is a 53 percent difference in the lifetime net tax rates of children born in 1991 versus the generation born in 1920.

Is it fair that today's children may have to hand over more than 40 percent of their lifetime income to the government, while their grandparents will end up paying just one-quarter of theirs? The answer depends on several factors. First, today's children will, it appears, receive more services in the form of educational expenditures and public goods over their lifetimes than did their elders. Second, certain types of contributions made by today's elderly, such as their participation in World War II or their suffering through the Great Depression, are not factored into our analysis. Consideration of these special contributions might suggest that a lower lifetime tax rate for the current elderly is in order. Third, the steep increase in lifetime tax rates may be justified to the extent that society's notion of generational equity entails equalizing the after-tax lifetime earnings of current and future generations.

If, however, society's idea of generational fairness means extracting an equal proportional sacrifice from every generation, then the numbers in tables 3 and 4 must be viewed (ignoring differences in public goods and special contributions) as highly discomfoting. They show a trajectory of U.S. generational policy that will force today's

children to bear a much larger burden than today's elderly ever had to (or ever will have to). And the picture for tomorrow's children is even bleaker.

Regardless of how one views the numbers in tables 3 and 4, it is worth pointing out that they probably *understate* the generational differences in economic well-being generated by U.S. fiscal policy. The reason is that they do not take into account what economists call *general equilibrium effects on factor prices*. In adopting the generational policy identified in table 3, the U.S. government has permitted earlier generations to consume more over their lifetimes than would otherwise have been the case. The argument for this policy was that every dollar the government allowed these generations to keep meant another dollar available to finance additional consumption. By consuming more, however, these generations have also lowered total U.S. saving (see Gokhale [1993]). While there are certainly other factors at play in explaining the recent drop-off in U.S. saving rates, generational policy is surely a prime contributor. The United States is now saving at record low rates. In 1991, for example, Americans put away only 1.7 percent of their earnings, dramatically lower than the almost 9 percent rate observed, on average, between 1950 and 1969.

Lower saving means lower investment, which in turn means that the U.S. capital stock will grow at a slower rate than the work force. Since labor productivity depends on the amount of capital available per worker, and since real U.S. wages reflect the nation's labor productivity, the decline in saving is responsible for lowering real wage growth. It is also responsible for raising the real return to capital, since it has made capital scarce relative to labor, the other factor of production. Those who have been most harmed by slower real wage growth are today's young and middle-aged workers, who have seen their real hourly pay pick up very slowly over the past two decades. If the low rate of U.S. saving continues, today's children will also experience minimal growth in their real wages once they enter the work force. Since the late 1970s, on the other hand, the real return to

capital has been quite high. This is an important point because the foremost beneficiaries have been today's elderly, the primary holders of U.S. capital over the last 20 years.

While simulation studies of stylized economies, such as Auerbach and Kotlikoff (1987), have shown that policy-induced general equilibrium changes in factor prices occur slowly over time, they have also demonstrated that such changes can be of first-order importance in redistributing across generations. Thus, if one were able to factor in these feedback effects reliably, the difference in the treatment of today's elderly versus today's children would likely be greatly accentuated.

V. Conclusion

This paper has examined a variety of evidence, all of which points to a deterioration in the standard of living of American children relative to adults, particularly the current elderly. Our findings indicate a rapid increase in the lifetime net tax rates of Americans born over the course of this century. Those born at the turn of the century can expect to pay just over a fifth of their lifetime income to the government; for those born at the beginning of the next century, that figure is likely to swell to well over one-half.

Does this considerable disparity in the lifetime net tax rates of different generations imply that U.S. fiscal policy is generationally unsound? The answer depends on society's notion of generational equity, on how the special contributions of particular generations are assessed, and on the level of benefits being provided to different generations as a result of the government's purchases of goods and services. If society believes that generational equity entails, other things being equal, the same proportional net tax sacrifice from each generation, then there is no question that the federal government's treatment of today's and tomorrow's children relative to the current elderly is highly inequitable.

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Table 1

Flow of Transfers and Taxes to Different Generations in 1970

Males

Age in 1970	Net Payment	Tax Payments				Transfer Receipts		
		Labor Income	Capital Income	Payroll Taxes	Excise Taxes	OASDI ^a	Health	Welfare
0	-48	0	0	0	303	5	47	298
5	55	0	0	0	407	48	22	280
10	160	0	0	0	513	110	21	220
15	213	0	0	0	672	225	44	188
20	3,395	1,204	95	915	1,502	103	44	175
30	10,417	3,996	1,562	3,038	2,327	34	146	325
40	13,658	4,382	4,170	3,331	2,299	79	146	299
50	15,627	4,016	6,645	3,053	2,523	175	147	288
60	14,686	3,100	7,621	2,357	2,411	398	147	258
70	3,570	581	6,547	442	1,771	4,369	1,177	223
80	-216	124	4,590	94	1,312	4,490	1,591	255
90	469	0	4,073	0	1,342	3,219	1,721	5

Females

Age in 1970	Net Payment	Tax Payments				Transfer Receipts		
		Labor Income	Capital Income	Payroll Taxes	Excise Taxes	OASDI ^a	Health	Welfare
0	-119	0	0	0	301	5	42	373
5	49	0	0	0	409	48	19	291
10	166	0	0	0	518	109	17	224
15	190	0	0	0	676	223	43	218
20	2,293	789	0	600	1,391	99	43	344
30	3,351	847	290	644	2,071	26	58	417
40	4,705	1,004	1,346	763	2,035	69	58	316
50	6,552	1,138	2,607	865	2,392	129	121	201
60	6,673	922	3,465	701	2,210	369	121	136
70	605	160	3,490	121	1,954	3,840	1,160	120
80	-649	32	2,669	25	1,616	3,269	1,594	128
90	-2,085	0	271	0	1,567	2,025	1,767	129

^aOld-age and survivors disability insurance.

Source: Authors' calculations.

Table 2

Flow of Transfers and Taxes to Different Generations in 1990

Males

<u>Age</u> <u>in 1990</u>	<u>Net</u> <u>Payment</u>	<u>Tax Payments</u>				<u>Transfer Receipts</u>		
		<u>Labor</u> <u>Income</u>	<u>Capital</u> <u>Income</u>	<u>Payroll</u> <u>Taxes</u>	<u>Excise</u> <u>Taxes</u>	<u>OASDI</u> ^a	<u>Health</u>	<u>Welfare</u>
0	10	0	0	0	460	5	160	283
5	164	0	0	0	565	57	77	265
10	330	0	0	0	750	139	71	209
15	410	0	0	0	1,044	289	151	193
20	3,987	1,204	133	1,317	1,712	12	151	217
30	12,082	4,080	2,176	4,463	2,353	75	495	420
40	18,656	5,386	5,808	5,890	2,648	181	495	400
50	22,194	5,357	9,256	5,858	2,932	330	496	382
60	19,237	3,558	10,616	3,891	2,838	795	496	374
70	961	515	9,119	564	2,563	7,725	3,681	393
80	-4,246	177	6,393	194	2,206	7,797	4,973	445
90	-4,373	0	5,673	0	1,659	6,297	5,387	21

Females

<u>Age</u> <u>in 1990</u>	<u>Net</u> <u>Payment</u>	<u>Tax Payments</u>				<u>Transfer Receipts</u>		
		<u>Labor</u> <u>Income</u>	<u>Capital</u> <u>Income</u>	<u>Payroll</u> <u>Taxes</u>	<u>Excise</u> <u>Taxes</u>	<u>OASDI</u> ^a	<u>Health</u>	<u>Welfare</u>
0	-59	0	0	0	444	5	143	354
5	195	0	0	0	595	57	66	276
10	388	0	0	0	799	139	58	213
15	437	0	0	0	1,050	288	146	207
20	2,697	870	0	952	1,561	11	146	528
30	6,099	2,178	405	2,382	2,075	50	197	694
40	8,651	2,464	1,875	2,695	2,451	116	197	521
50	9,745	2,028	3,632	2,218	2,760	166	408	319
60	8,758	1,259	4,826	1,377	2,579	658	408	217
70	-3,055	167	4,862	182	2,201	6,625	3,622	220
80	-6,209	52	3,717	57	1,685	6,502	4,985	233
90	-9,273	0	377	0	1,574	5,442	5,545	237

^aOld-age and survivors disability insurance.

Source: Authors' calculations.

Table 3

Lifetime Net Tax Rates for Generations Born since 1900

Year Generation Was Born	Males			Females			Males & Females Combined		
	Net Tax Rate	Gross Tax Rate	Gross Transfer Rate	Net Tax Rate	Gross Tax Rate	Gross Transfer Rate	Net Tax Rate	Gross Tax Rate	Gross Transfer Rate
1900	17.8	19.6	1.8	35.3	43.9	8.7	21.5	24.8	3.3
1910	21.8	24.6	2.8	35.7	49.6	13.9	24.7	29.8	5.2
1920	24.2	27.7	3.5	34.0	50.4	16.5	26.3	32.5	6.2
1930	26.4	30.5	4.1	34.4	52.8	18.5	28.1	35.3	7.2
1940	28.2	33.0	4.8	32.7	50.6	17.9	29.3	37.3	8.0
1950	30.6	36.8	6.2	30.6	46.9	16.3	30.6	39.9	9.3
1960	32.3	39.6	7.2	31.5	47.9	16.4	32.1	42.3	10.2
1970	33.6	41.7	8.1	32.5	50.3	17.8	33.2	44.5	11.3
1980	34.1	42.4	8.3	33.1	51.6	18.5	33.8	45.5	11.7
1990	33.9	42.7	8.7	32.9	52.0	19.1	33.6	45.7	12.2
1991	33.9	42.7	8.8	32.8	52.0	19.2	33.5	45.8	12.2
Future Generations	71.5	-----	-----	69.3	-----	-----	71.1	-----	-----

Source: Authors' calculations.

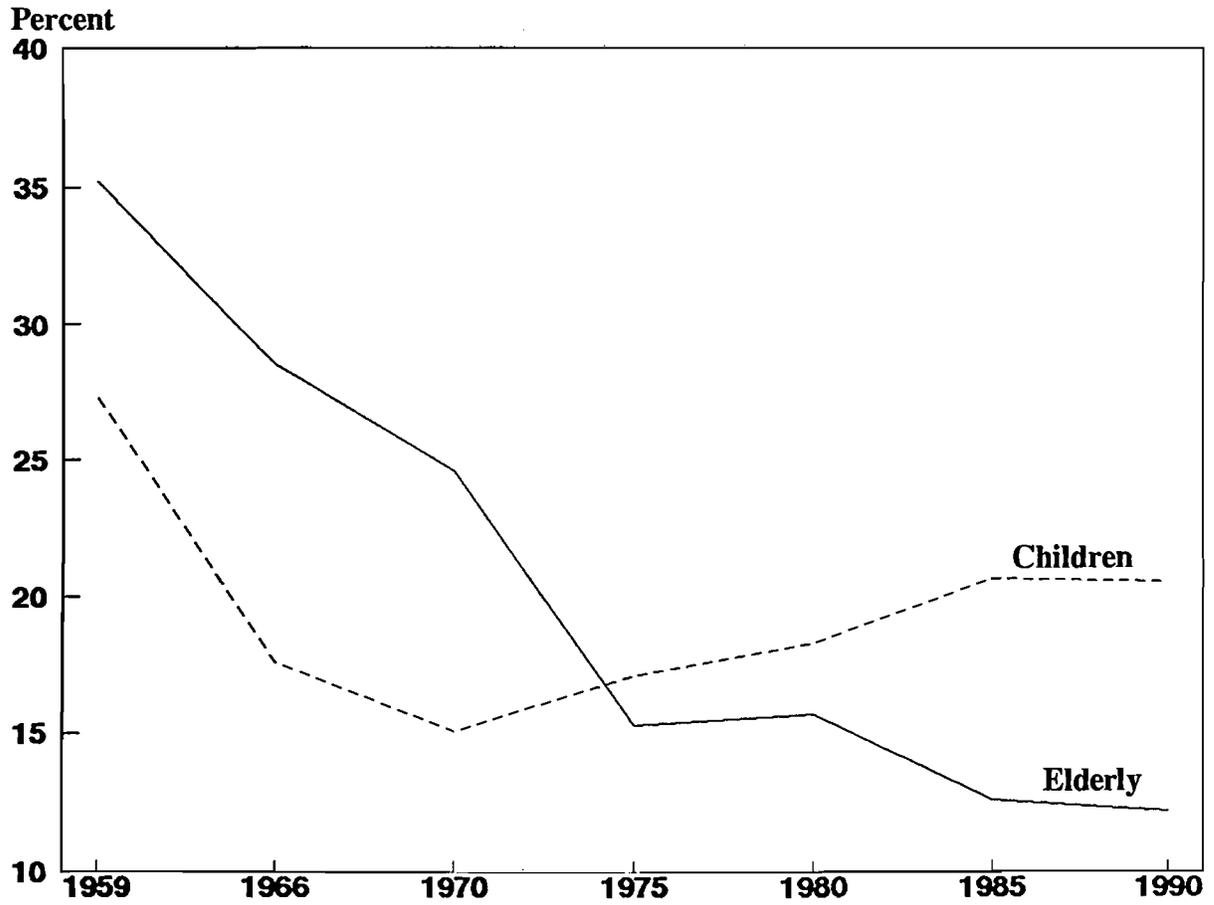
Table 4

Lifetime Net Tax Rates for Generations Born since 1900:
Baseline Case, Mandatory Caps on Entitlements, and Income Tax Surtax

Year Generation Was Born	Males			Females			Males & Females Combined		
	Base- line	Caps	Surtax	Base- line	Caps	Surtax	Base- line	Caps	Surtax
1900	17.8	17.8	17.8	35.3	35.3	35.3	21.5	21.5	21.5
1910	21.8	21.8	21.8	35.7	35.9	35.7	24.7	24.7	24.7
1920	24.2	24.4	24.3	34.0	34.8	34.0	26.3	26.6	26.3
1930	26.4	26.8	26.4	34.4	36.5	34.5	28.1	28.9	28.2
1940	28.2	28.9	28.5	32.7	35.2	33.2	29.3	30.4	29.7
1950	30.6	31.5	31.6	30.6	32.9	31.5	30.6	31.9	31.6
1960	32.3	33.6	34.6	31.5	34.2	33.5	32.1	33.8	34.2
1970	33.6	35.3	37.6	32.5	35.7	35.9	33.2	35.4	37.1
1980	34.1	36.5	39.9	33.1	37.0	38.2	33.8	36.6	39.3
1990	33.9	36.6	40.7	32.9	37.4	39.0	33.6	36.9	40.2
1991	33.9	36.6	40.8	32.8	37.3	39.1	33.5	36.9	40.2
Future Generations	71.5	40.9	47.0	69.3	41.7	45.0	71.1	41.3	46.5

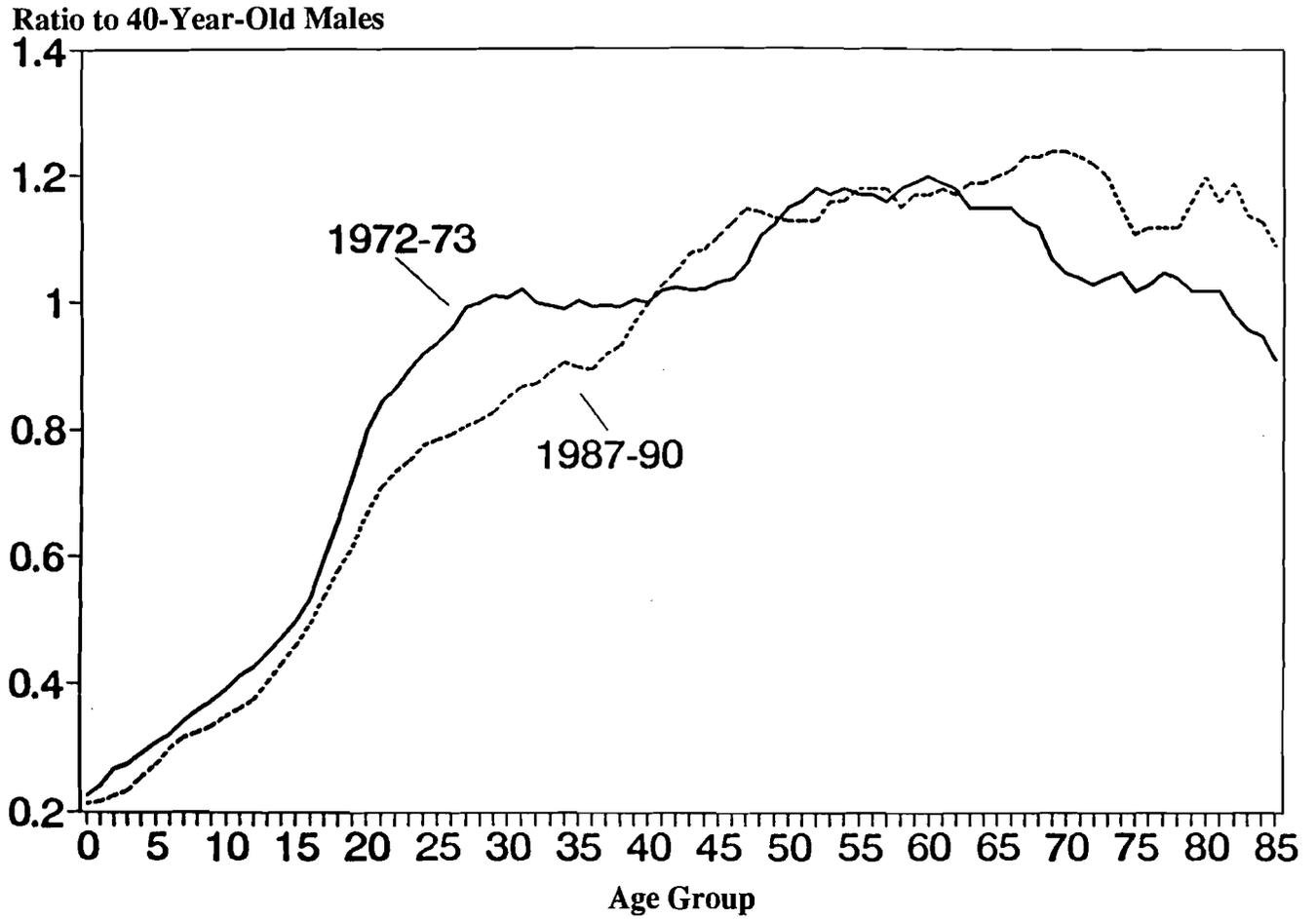
Source: Authors' calculations.

FIGURE 1: POVERTY RATES, 1959-90



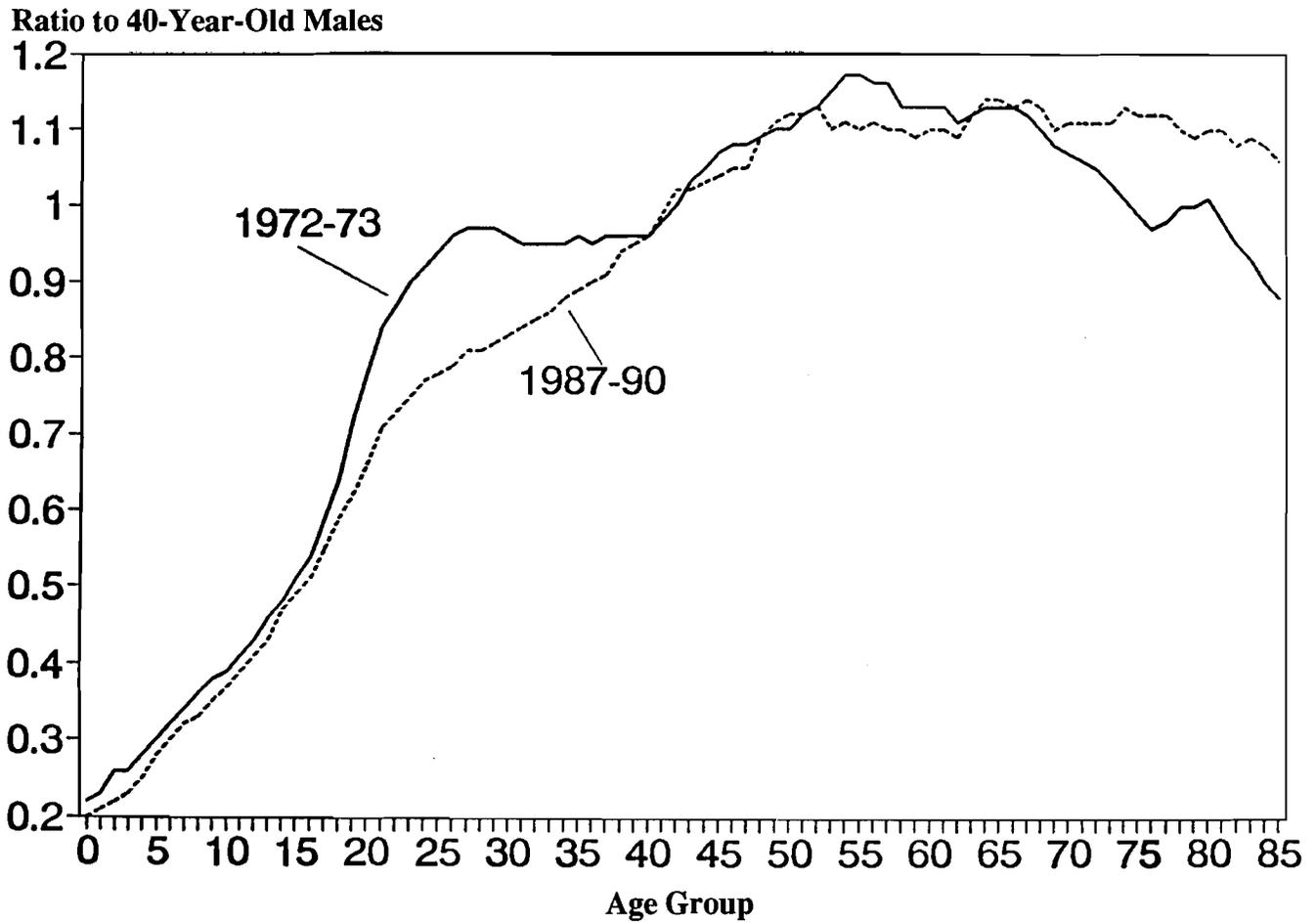
Source: U.S. Census Bureau, Current Population Reports.

FIGURE 2: RELATIVE CONSUMPTION PROFILES, MALES



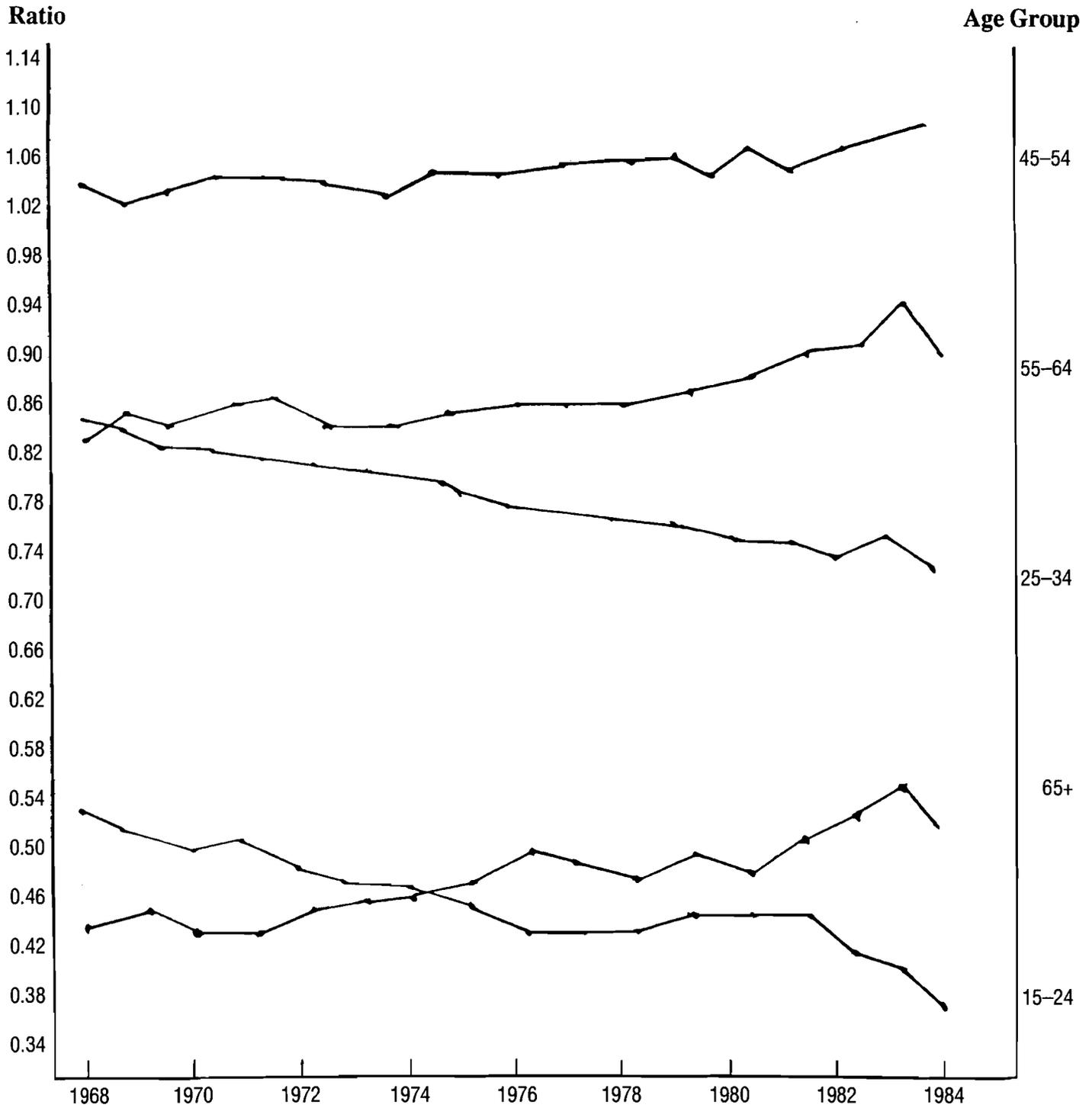
Sources: Consumer Expenditure Surveys, 1972-73 and 1984-89; and National Income and Product Accounts.

FIGURE 3: RELATIVE CONSUMPTION PROFILES, FEMALES



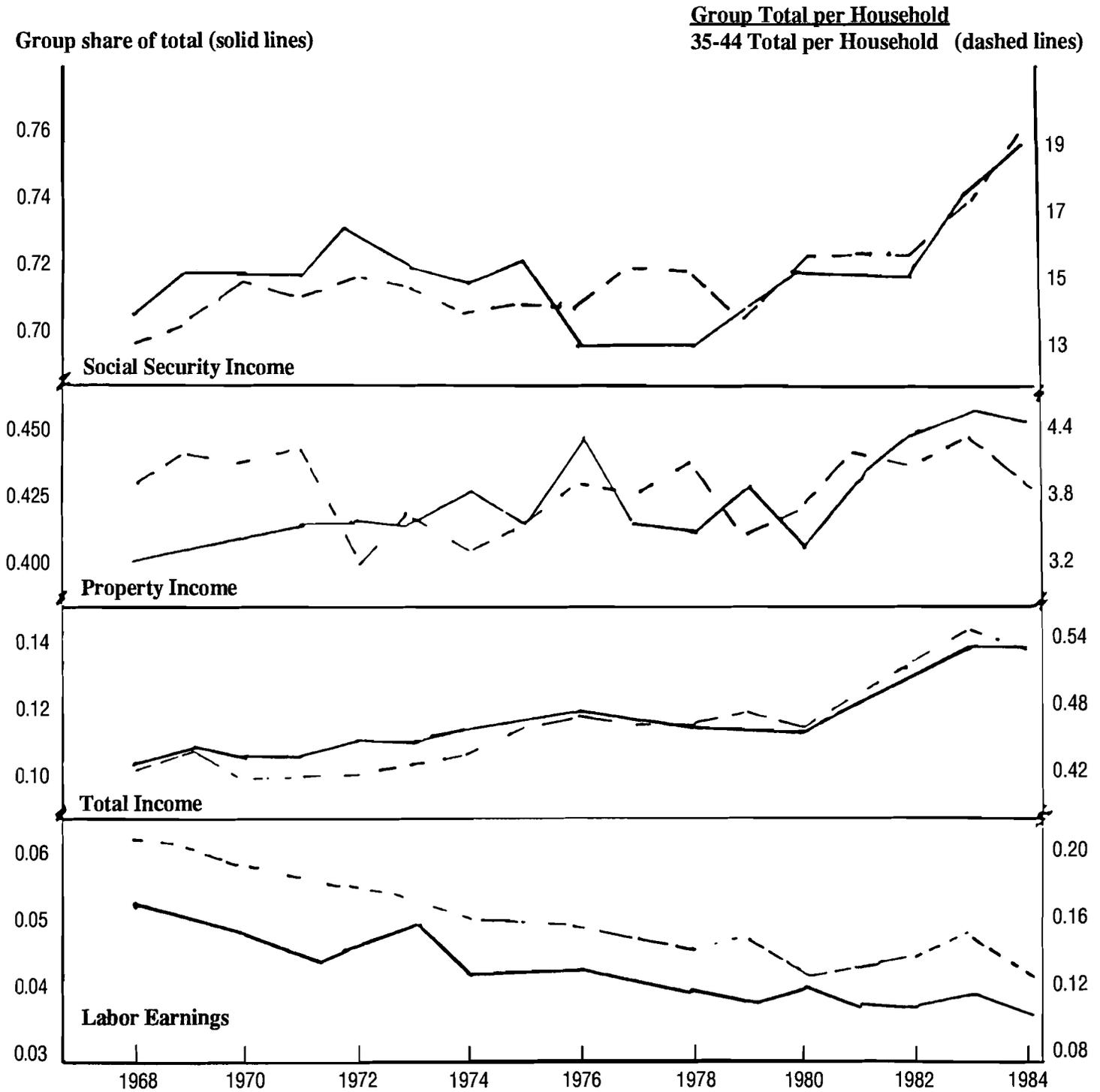
Sources: Consumer Expenditure Surveys, 1972-73 and 1984-89; and National Income and Product Accounts.

FIGURE 4: RATIO OF INCOME PER HOUSEHOLD TO INCOME PER HOUSEHOLD OF 35 TO 44 YEAR-OLD AGE GROUP



Source: Boskin, Kotlikoff, and Knetter (1985).

FIGURE 5: HOUSEHOLDS 65 AND OVER -- SHARE OF INCOME AND MAJOR COMPONENTS OF INCOME, AND RATIO OF PER HOUSEHOLD INCOME AND MAJOR COMPONENTS TO 35 TO 44 YEAR-OLD AGE GROUP



Source: Boskin, Kotlikoff, and Knetter (1985).