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SOCIAL SECURITY AND MEDICARE POLICY FROM THE PERSPECTIVE OF GENERATIONAL ACCOUNTING

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Abstract

Our previous study (Auerbach, Gokhale, and Kotlikoff [1991]) introduced the concept of generational accounting, a method of determining how the burden of fiscal policy falls on different generations. It found that U.S. fiscal policy is out of balance in terms of projected generational burdens. This means that either current generations will bear a larger share (than we project under current law) of the burden of the government's spending, or that future generations will have to pay, on average, at least 21 percent more on a growth-adjusted basis than will those generations who have just been born.

These conclusions were based on relatively optimistic assumptions about the path of Social Security and Medicare policies, namely that the accumulation of a Social Security trust fund would continue and that Medicare costs would not rise as a share of GNP. In this paper, we simulate the effects of realistic alternative paths for Social Security and Medicare. Our results suggest that such alternative policies could greatly increase the imbalance in generational policy, making not only future generations pay significantly more, but current young Americans as well. For example, continued expansion of Medicare in this decade alone could double the 21-percent imbalance figure if its bill is shifted primarily to future generations.

I. *Introduction*

Of late, economists and noneconomists alike have been questioning the appropriateness of using the fiscal deficit as an indicator of the stance of economic policy. The deficit is a single number that measures the government's current net cash flow. As such, it is ill-suited to reflect the longer-term effects of fiscal policy on saving, investment, and growth. Moreover, the deficit cannot reveal how different generations, both those living and those yet to come, are being treated under current economic policies. Doubts about the deficit have been accentuated by the aging of the U.S. population, with its attendant increase in the number of retirees dependent on workers for pay-as-you-go spending and transfer programs.

In 1983, in recognition of these concerns about the demographic transition, the U.S. federal government began to accumulate a large Social Security trust fund to help finance the baby boom generation's Social Security benefits. But this break with short-term, pay-as-you-go financing also raised new questions about using the unified federal deficit, which includes Social Security, as a measure of fiscal policy. If funds for the future need to be accumulated by the Social Security system, then shouldn't such accumulations be excluded from the overall deficit measure?

The federal government's response, as expressed in the 1990 budget agreement, has been to exclude Social Security from future calculations of the deficit. However, this has not prevented public discussion of the deficit inclusive of Social Security. Nor has it put to rest the concerns that government spending is now larger and will continue to grow, and that taxes are now smaller and will continue to be smaller than they would in the absence of the Social Security surpluses. That is, it has not put to rest the concern

that the federal government is using the large pay-as-you-go Social Security surpluses to offset large on-budget deficits.

This is but one example of the ambiguity of the deficit and the deficiency of any single deficit measure as a gauge of the fiscal burden faced by different generations. While one response to this deficiency has been to construct different deficits for different purposes, such constructs are clearly ad hoc in nature and require continual refinements to prevent perverse results. For example, if the Social Security system is excluded from the budget for deficit purposes, how does one deal with changes in income taxes that are induced by changes in Social Security taxes: Should such changes in off-budget taxes be permitted to alter the on-budget deficit?

The key economic question associated with fiscal deficits — which generation will pay for what the government spends — is not answered by any version of the government's budget deficit. As we discuss below, an increase in the deficit does not necessarily signal a shift in the fiscal burden to future generations. Moreover, policies that dramatically alter the inter-generational distribution of fiscal burdens may do so without inducing any change whatsoever in the measured deficit.

In an earlier paper (Auerbach, Gokhale, and Kotlikoff, hereafter AGK [1991]), we developed an alternative to the deficit — generational accounting — and showed how this new approach could be used to assess fiscal policy and its distributional impact with respect to different generations. Our previous analysis stressed that generational accounts are quite informative about the effects of changes in tax and transfer policies on the burdens of different generations.

We now use generational accounting to analyze potential changes in the federal government's most important transfer program, Old Age Survivors,

Disability, and Health Insurance (OASDHI), which includes the Social Security pension system and Medicare. This component of the federal budget has grown much more rapidly than other components in recent years. If current trends continue, OASDHI will continue to grow relative to the economy due to the rising share of the elderly in the population and the rapid increase in real medical costs.

Before turning to such policy analysis, we briefly review the generational accounting methodology, which is discussed more fully in AGK (1991, 1992).

II. *The Generational Accounting Approach*

The basic idea behind generational accounting is that generations currently alive and those yet to be born must pay for the government's current and future spending on goods and services less the external resources available to the government to cover these expenditures (its net wealth). This is the government's intertemporal budget constraint. The constraint reminds us of the zero-sum nature of paying for the government's expenditures; if generations currently alive pay less, those yet to come will be forced to pay more. It also reminds us that changes in fiscal policy today are likely to necessitate changes in the future. We express the government's intertemporal budget constraint in present value, with the initial value of government liabilities and the present value of future spending being equal to the sum of the present values of each generation's burden. Emphasizing the present-value burdens of different generations, regardless of the year in which such burdens are imposed, neutralizes the timing problems inherent in annual deficit measures and allows us to summarize in a compact form the likely effects of fiscal policy on individuals through time.

The analysis is forward-looking, in that it calculates only the future fiscal burdens that each generation faces. Because we are interested in the issue of generational imbalance in fiscal policy, we treat current and future generations separately when analyzing a particular fiscal policy path. For current generations, we calculate the burden under the particular fiscal scenario. For future generations, we calculate the total present value of payments required to balance the government's intertemporal budget constraint. One cannot say how this burden will be distributed among future generations. For purposes of illustrating the size of the burden likely to be imposed on future generations versus that on current generations, we assume that the burden on each successive future generation remains fixed as a fraction of the lifetime income of that generation; that is, the absolute fiscal burden of successive generations increases at the rate of growth of their lifetime incomes, which we take to be the growth rate of productivity.

To calculate the burden faced by a member of an existing generation, we first project the net payments to the government in each future year for a representative member of that generation (distinguishing males and females) and then take the present value of such payments. By net payments we mean all taxes paid to, less all transfers received from, government at the federal, state, and local levels. Payments include not only direct taxes such as income and property taxes, but also indirect business taxes, corporate taxes, and seigniorage. Transfers include Medicare, Medicaid, food stamps, Social Security benefits, and so on.

The present-value calculation for each representative individual discounts future payments not only for interest, but also for mortality: An individual's future burden is reduced by the probability that he or she will not be alive when that burden occurs. Given our assumption that members of

each generation (distinguished only by sex) face the same survival probabilities, multiplying individual payments in each year by the generation's projected surviving population for that year provides a measure of that generation's payment, the separate components of which are benchmarked to aggregates from the National Income and Product Accounts.

Once burdens for current generations have been calculated, those faced by future generations are estimated as a residual, based on the fiscal balance requirement and on the assumption that the remaining fiscal burden will be borne proportionally. Policy changes affect the projected net payments faced by current generations and, through the fiscal balance requirement, by future generations as well.

Because the accounts are forward-looking, they do not consider the net payments made in the past. The present value of future net payments, which is positive for young and middle-aged existing generations, is negative for older generations, who are largely retired and facing lower labor income taxes while at the same time receiving Social Security benefits and Medicare. Thus, the *level* of an existing generation's account does not indicate how well or poorly that generation has fared at the hands of the government. We therefore focus on the *changes* in each generation's account that are induced by alternative policies.

III. *Construction of Generational Accounts*

The construction of generational accounts is a two-step process. The first step entails projecting each currently living generation's average taxes less transfers in each future year during which at least some members of the generation will be alive. The second step converts these projected average net tax payments into a present value using an assumed discount rate and

taking into account the probability that the generation's members will be alive in each of the future years (that is, actuarially discounting for both mortality and interest).

In projecting each currently living generation's taxes and transfers, we consider first their taxes and transfers in the base year — in this case, 1989. The totals of the different taxes and transfers in the base year are those reported by the National Income and Product Accounts. As described in detail in AGK (1991), these totals of base-year taxes and transfers are distributed to the different generations according to their ages and sexes based on cross-section survey data from the Bureau of the Census' Survey of Income and Plan Participation and from the Bureau of Labor Statistics' Survey of Consumer Expenditures. The distribution of future taxes and transfers by age and sex is assumed to equal that in the current year with adjustments for growth and projected changes in policy.

Because the government already forecasts the totals of its various taxes and transfers for many years ahead, the additional work involved in generational accounting is primarily in allocating these projected totals by age and sex. Thus, although a few elements are added and the requisite projections extend further into the future, generational accounting uses mostly the same numbers the government uses, only in a different manner.

The calculations presented here assume a 6.00 percent real rate of discount and a productivity growth rate of 0.75 percent. The rate of productivity growth is based on recent U.S. experience. The discount rate is higher than the rate of return on government obligations, reflecting the fact that future government receipts and expenditures are risky.[1] The estimates also

[1]As we discussed in our 1991 paper, the appropriate discount rate to use depends on the risk characteristics of the flows being discounted. (A similar point has been made by Bohn [1991]). If government receipts and expenditures were roughly proportional to aggregate fluctuations in income, then the

incorporate the mortality probabilities embedded in the Social Security Administration's projections of U.S. population by age and sex. As discussed in AGK (1991), the absolute value of the generational accounts is sensitive to the choice of rates of discount and growth, as well as to rates of birth and death. But for many of the questions of interest, such as the fiscal burden being imposed on future generations relative to that being shouldered by current generations, the results are quite robust to reasonable departures from baseline assumptions.

As mentioned, inferring the fiscal burden on future generations requires knowing not only the sum total of generational accounts of current generations, but also the projected present value of the government's expenditures on goods and services as well as the government's initial net wealth position. As described in AGK (1991), the government's net wealth is estimated in a manner consistent with the government sector deficit reported in the National Income and Product Accounts. The present value of government expenditures is calculated by projecting current expenditures into the future, taking into account those elements that are sensitive to the demographic structure. For example, our projections consider the decrease in per capita spending on education that is likely to arise as the school-age population declines relative to the total population.

Our baseline generational accounts reflect policy as of 1989 (prior to the 1990 budget agreement). They show that a newborn male faces a net payment

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private sector discount rate, measured by the real before-tax rate of return, would seem the appropriate discount rate to use. We use a somewhat lower rate to reflect the existence of countercyclical government policy. In principle, one would also discount separate components of expenditures and net receipts using different rates.

to the government of $73,700, reflecting present values of $85,300 of tax payments and $11,600 of transfers received. For females, the comparable figures are $36,400 in net present value, comprising $54,700 in taxes and $18,300 in transfers. The lower taxes for females primarily reflect their lower rate of labor-force participation, and hence lower income and payroll taxes. The higher transfers reflect both greater female longevity and the concentration of female-headed households in circumstances of poverty. Together, Medicare and Social Security account for nearly half of all transfers received by males, and for more than a third of those received by females.

Based on our estimates of initial government wealth and the projections of the effects of this baseline fiscal policy on existing generations, we find that, as of 1989, generational policy was out of balance in the sense that the fiscal burden on future generations was 21 percent larger than that on 1989 male and female newborns, who are assumed to fall under the current policy regime. Because the net lifetime payments that newborns are projected to make represent almost 40 percent of their lifetime incomes, this imbalance in generational policy translates into an added burden of nearly one-tenth of the income of members of future generations.

An alternative way of measuring how far the current regime is out of generational balance is the change in any particular fiscal instrument that would be necessary to bring this 21 percent excess to zero — to make the "new" current policy sustainable without further adjustment. Our calculations suggest that an immediate and permanent increase in the average income tax rate of 5.3 percent (just under 1 percentage point) would suffice. If, instead, payroll taxes were used to equalize the burden, they would have to rise by 7.8 percent, or about 1 percentage point. Alternatively, an increase

in sales taxes of 10.2 percent (just over 1 percentage point) or a 14.3 percent hike (nearly 4 percentage points) in capital income taxes would be required. Although any of these fiscal instruments (or many others) could be used to provide intergenerational balance, each policy change would lead to a different burden on current and future generations. The most favorable to the young and future generations are sales taxes, more of which would be paid by older individuals. At the other extreme, not surprisingly, are payroll taxes. Hence, generational balance may be achieved with a range of impacts on particular generations.[2]

IV. *Generational Accounting and Deficits*

The usefulness of generational accounting is immediately clear when one compares the effects of specific fiscal polices on deficits and generational accounts. Policies that change the pattern of generational burdens need not affect the deficit, while other policies may change the deficit without affecting the pattern of generational burdens. This is illustrated by table 1 (reprinted from AGK [1992]), which presents simulations of the effects of four different, but not unusual, policies.

The first is a five-year, 20 percent reduction in the average federal income tax rate, with the tax rate increased above its initial value after five years to maintain a constant debt-to-GNP ratio. This policy would raise the deficit and shift the fiscal burden to young and future generations — not a surprising result. However, the second policy — an immediate and permanent 20 percent increase in Social Security retirement and disability benefits financed on a pay-as-you-go basis by increases in payroll taxes — would

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[2]See AGK (1992) for further discussion.

induce a quite similar shifting of fiscal burdens without any change in the time path of measured deficits (including or excluding the Social Security system). The third policy involves an equal revenue switch in tax structure — a permanent 30 percent cut in payroll taxes financed by increased sales taxes — which, again, shifts generational burdens without changing the deficit.

The final policy illustrated in table 1 involves the elimination of the discount that presently exists in the price of existing assets as a result of investment incentives. Removing this discount (as would be accomplished by extending the tax treatment of new assets to existing assets) is essentially a windfall to owners of existing capital. We assume in the simulation that this grant is paid for by a permanent increase in capital income tax rates, a policy shift that transfers resources from the young (who, on average, have not yet accumulated significant wealth) to the old (who, on average, have).

As the simulations in this section indicate, the generational effects of a variety of realistic policies cannot be determined by looking at deficits. We turn now to an examination of several Social Security and Medicare policies that may actually be adopted through time.

V. *The Generational Impacts of Social Policies*

A. Social Security's OASDI Program

We first consider policies to alter the structure of the OASDI (non-Medicare) portion of the Social Security system. As a result of the increases in payroll taxes mandated by the 1983 changes, this program has in recent years been running large cash flow surpluses of roughly $100 billion per year. While these accumulations were planned to help offset benefit payments in the decades to come, their existence, combined with historically high payroll tax

rates, has lent force to arguments for reducing payroll taxes. However, cutting payroll taxes is not, in itself, a full description of a fiscal policy — payroll tax cuts alone would cause a violation of the government's fiscal balance requirement. A complete policy specification also requires a compensating change in either net government receipts or spending (or both). This section presents simulations for four such policies and their effects on the fiscal burdens of different generations.

The first of the four policies considered is a proposal to cut the Social Security payroll tax rate over the next three decades and to increase the tax rate thereafter. The second policy involves the same reduction in payroll taxes (through the year 2020) as in the first simulation. However, rather than raising tax rates after 2020, this policy reduces Social Security benefits beginning in that year by the same amount that payroll taxes would otherwise have increased. The third policy entails the indirect dissipation of the Social Security trust fund though an increase in government spending over the next three decades equal, on an annual basis, to the Social Security surplus. Over these decades, funds to pay for the larger government spending are "borrowed" so that in 2020, the additional accumulated federal debt is equal in magnitude to the Social Security trust fund. The fourth policy is an immediate and permanent switch from payroll tax finance to income tax finance of Social Security.

The first column of table 2 indicates what reducing and then increasing payroll taxes will do to the burdens placed on different generations. The policy provides windfalls to Americans currently alive, with the exception of the very old and the very young. Those currently aged 30 to 40 receive the largest windfalls, roughly $3,000 for males and $1,500 for females. These gains come at the expense of children currently under age 10 as well as future

individuals. If all future Americans are treated uniformly, up to the growth adjustment, their lifetime net payments will rise by $6,100 in the case of males and $3,000 in the case of females.

Enactment of a policy that promises to raise future taxes to pay for current tax cuts does not ensure that such taxes will actually be raised. The government might use an alternative method to restore fiscal balance. For example, the necessary increase in net payments might take the form of a cut in Social Security benefits. Such a policy, depicted in the second column of table 2, reduces by about one-third for males and by about two-thirds for females the gains enjoyed under the initial policy. Females lose relatively more because their share of Social Security benefits is larger than their share of payroll tax payments.

The third column in table 2 shows what happens if the federal government indirectly dissipates the Social Security surplus by raising its spending beyond the amount projected in the baseline generational accounts. In the simulation, the government continues to accumulate its Social Security trust fund, but it also borrows to pay for additional spending with the annual amount of the borrowing equal in size to the annual Social Security surplus. We assume this process of deficit-financed increased spending continues through 2020, and that after 2020 the government raises income taxes to pay interest less an adjustment for growth on the additional accumulated official debt.

This policy has quite different effects from those in the previous simulations, because, unlike policies that do not change direct government spending, increases in government spending may expand the sum of all generational accounts. Here, this added burden is borne by all generations who will be alive to service the extra debt, with the greatest burden on those

currently young and those yet to be born. How this translates into the net impact on each generation depends on the size and distribution of the benefits of the added spending. Certainly, if the benefits are spread over only those currently alive, the unborn will lose.

The final simulation in table 2 shows the effects of a change in the method of financing Social Security benefits. Over the years, some have argued that the connection between payroll taxes and OASDI benefits is sufficiently weak that there is little reason to rely on the payroll tax as a source of finance. The policy change considered here would replace the payroll tax with the income tax as the method of finance, immediately and permanently. Such a change has been advocated for a variety of reasons, including a desire to use a more progressive source of revenue, but our simulation considers only the generational effects of the switch. We find that those under age 40 stand to win, and those over 40 stand to lose, because income taxes are levied on income from assets as well as from labor, and older individuals receive a bigger share of asset income than labor income.

The generational implications of using general revenue finance to pay for Social Security are spelled out in the last column of table 2. On average, 60-year-old males and females would be forced to pay $9,600 and $5,600 more, respectively. Forty-year-old males and females would suffer respective losses of $4,400 and $1,300. In contrast, males and females who are now age 10 would benefit by more than $3,000 each. The policy would also represent more than a $2,000 lifetime net payment break to future generations.

In summary, the results in this table show that one cannot simply analyze the effects of a cut in payroll taxes; it is necessary to specify what replaces these taxes. The simulations suggest four possible routes: increased payroll taxes in the future, reduced benefits in the future, reductions in

government spending, and replacement with income taxes. Each has its own effects on the generational fiscal burden.

B. Medicare Policy

Many observers have worried about the rising cost of providing health care in the United States, where a much larger fraction of GNP is spent on medical care than in any other OECD country. Canada has the second-highest per capita expenditure on health care, but spends almost 30 percent less per person. At present, about 12 cents of every dollar of U.S. output goes to health care, compared with 6 cents in 1960. By the turn of the century, this figure is projected to be 17 cents. If the growth of this sector continues unabated, the figure will reach 37 cents by the year 2030 (see Darman [1991]).

What explains the rapid growth in real per capita U.S. health care expenditures? Since 1960, slightly more than half of the increase simply reflects expanded use of health care services and facilities. Another third is due to the escalation in medical care prices relative to the prices of other goods and services, and the remaining 11 or so percent reflects the aging of the population. This trend will, of course, intensify in the years ahead.

The growth of health care expenditures has potentially enormous implications for government outlays and for the well-being of different generations. Consider just the federal government's expenditure on Medicare, which currently constitutes 7 percent of total federal outlays. According to the Office of Management and Budget, Medicare is projected to exceed 30 percent of the federal budget by 2025. To support this program at its current levels alone, either the federal budget would have to grow far beyond its present

level of about 20 percent of GNP, or the rest of the budget would have to decline by more than 20 percent in real terms.

If Medicare's growth is not curtailed, how will its additional costs be financed? Given its cash-flow accounting, Medicare, like OASDI, will be reporting cash-flow surpluses over most of this decade as the HI (Health Insurance) component of payroll taxes grows. But by the end of the decade, the higher payroll tax receipts will fall short of the increased Medicare spending, leading, in short order, to the exhaustion of the Medicare trust fund.

If and when the HI trust fund is dissipated, the government may raise payroll taxes, or may simply "borrow" from the OASI (Old Age Survivors Insurance) and DI (Disability Insurance) Social Security trust funds. Interfund Social Security borrowing has occurred in the past, and would delay the eventual need to raise payroll taxes, possibly until the burden of these higher taxes fell primarily on generations not yet born. According to Medicare's actuaries, the HI payroll tax may have to increase by anywhere from 6 to 16 percentage points. Since the combined employer-employee Social Security payroll tax is currently just over 15 percent, the uninhibited growth of Medicare expenditures could eventually require a doubling of Social Security taxes.

The generational accounts considered thus far are based on the assumption (perhaps naive) that medical expenditures will grow no faster than the rest of the economy. In light of the past growth of Medicare, table 3 considers two alternative growth rates for Medicare expenditures over the 1990s. Here, Medicare outlays in the current decade are assumed to rise at either a 2 or 4 percent higher rate than the rest of the economy. After the turn of the century, the Medicare growth rate is assumed to equal the economy-

wide growth rate. The 2 and 4 percent growth rates bracket the 2.77 rate of growth of health spending in excess of GNP observed between 1960 and 1989. The 4 percent path is consistent with projections of an increase, over the decade, from 12 to 17 percent in the share of U.S. health care spending relative to GNP.

For each growth rate, there are three alternative financing scenarios. The first is that future generations pick up the entire bill for this decade's projected higher Medicare growth. The second is that the expansion in Medicare over the next decade is ultimately paid for by a reduction in Medicare benefits starting in the year 2020. The third is that this decade's growth in Medicare is matched, on an annual basis, with increases in HI payroll taxes.

The three scenarios have markedly different implications for both living and unborn generations. Under the first scenario, the burden is entirely shifted onto future generations; all living generations benefit from the growth in Medicare because they don't have to pay for it. Depending on the growth rate assumed, future generations end up paying from 10 to 23 percent more than in the base case. If Medicare growth is 4 percent, the absolute increase in the bill handed our male descendants is $19,400; it is $9,000 for our female descendants. These additional burdens raise substantially the ratio of total net payments of the unborn to those of newborns. Rather than paying 21 percent more than newborns, future generations in the 4 percent growth scenario end up paying almost 50 percent more!

The second scenario, given in columns 2 and 5, indicates what happens if, instead of borrowing from the Social Security trust fund, Medicare pays for its prospective near-term generosity with longer-term (after 2020) benefit cuts. In this case, individuals below age 50 lose, because of the net cuts in

Medicare benefits in their retirement. Note also that today's older individuals experience the same large gains from Medicare growth as in the previous financing scenario for the simple reason that, by assumption, the projected Medicare benefit cuts don't begin for 30 years.

The third financing mechanism, which involves annual increases in HI payroll taxes to fund the excess Medicare growth, is explored in columns 3 and 6. This scenario hurts an even larger fraction of those alive, but has the smallest effect on members of future generations, whose net payments rise by roughly the same proportion as those for individuals age 30 and under. As in the previous cases, members of older generations, who have essentially retired and ceased paying payroll taxes, enjoy roughly the same gain from the near-term growth in Medicare.

Given the persistent increase in health care costs, one might ask how much more extreme these results would be if Medicare spending grew as a share of GNP not only for the next decade but, say, for the next three decades. We repeated the simulations in table 3 under the assumption that Medicare grows at a rate 2 or 4 percent faster than GNP until 2020. Not surprisingly, the burden on future generations increases considerably under these assumptions, but the extent of this growth depends on the policy being simulated. If Medicare costs rise at a rate 2 percent faster than GNP and benefits are eventually cut (in 2020), the added burden on future males would rise from $3,300 to $12,600; and that on females from $1,800 to $6,000. At the other extreme, the worst-case scenario is when Medicare grows at a 4 percent faster rate until 2020, and only future generations pay. In this case, the added burden on future males rises from $19,400 to $62,100; and that on females from $9,000 to $26,200. Given that our baseline simulations assign future males and females total fiscal burdens of $89,500 and $44,200, respectively, we see

that sustained Medicare growth has the potential of absorbing a significant share of the government's overall budget.

VI. *Conclusion*

We have estimated that America's policy path, based on current law and the assumption of balanced growth in government spending, will place a roughly 21 percent larger growth-adjusted net tax burden on future generations than it will place on Americans who have recently been born. But this estimate is based on what may be relatively optimistic assumptions: that the Social Security system's projected cash-flow surpluses will continue to accumulate and that Medicare spending will immediately stabilize as a share of GNP. Those individuals coming in the future as well as today's infants and young children could end up paying considerably more under less-optimistic but realistic alternative paths for Social Security and Medicare policies.

Specifying a different path for payroll taxes or Medicare costs is not enough to describe an alternative fiscal policy: One must also indicate how the government will compensate for either of these changes in order to preserve intertemporal fiscal balance. Though we know some balancing response must occur, the ultimate path cannot, of course, be known with certainty — we have considered several alternatives in each case.

The Social Security policies we have analyzed include short-term payroll tax cuts financed by long-term payroll tax increases, future benefit cuts, or general revenue finance, as well as the dissipation of the impending Social Security off-budget surpluses through increased on-budget deficits. Our simulations for Medicare consider alternative responses to the continued growth of Medicare expenditures as a share of GNP. The use of generational

accounting reveals, as deficit accounting cannot, the relative burdens that these different policy responses place on different generations.

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Table 1

Changes in Generational Accounts Arising from Four Hypothetical Policies

(present value, thousands of dollars)

	5 Year Tax Cut	20 Percent Social Security Benefit Increase	Shifting from Payroll to Sales and Excise Taxes	Eliminating Investment Incentives
Males				
Ages				
0	1.9	2.7	1.0	0.9
10	3.2	3.9	-1.3	1.5
20	2.2	5.5	-6.5	2.3
30	-0.3	5.2	-8.8	2.1
40	-2.7	2.4	-7.5	0.2
50	-4.4	-2.7	-3.8	-2.5
60	-5.0	-10.2	0.7	-4.7
70	-2.6	-11.9	3.4	-5.0
80	-1.6	-7.3	2.8	-4.0
Future Generations	1.9	3.1	0.4	0.2
Females				
Ages				
0	1.0	1.0	3.5	0.4
10	1.7	1.5	3.2	0.6
20	0.7	1.9	1.5	0.8
30	-0.2	0.9	1.8	1.2
40	-1.0	-1.0	2.4	0.6
50	-1.9	-4.5	3.1	-0.5
60	-2.1	-10.0	3.9	-1.8
70	-1.5	-11.0	3.9	-2.4
80	-0.9	-7.5	2.8	-2.4
Future Generations	1.0	1.1	3.8	0.1

Source: Authors' calculations.

Table 2

Changes in Generational Accounts from Four Social Security Policies

(present value, thousands of dollars)

	Immediate Payroll Tax Cuts Financed by Future Tax Increases	Immediate Payroll Tax Cuts Financed by Benefit Reductions	Dissipating the Social Security Trust Fund	Switching from Payroll to Income Tax Finance
Males				
Ages				
0	1.3	0.3	4.1	-2.4
10	-0.2	-0.6	4.0	-3.6
20	-2.3	-1.8	2.9	-4.4
30	-3.4	-2.2	1.5	-1.0
40	-3.2	-2.5	0.6	4.4
50	-2.0	-1.8	0.2	8.4
60	-0.7	-0.7	0	9.6
70	-0.1	-0.1	0	7.7
80	0	0	0	4.5
Future Generations	6.1	3.8	5.2	-2.5
Females				
Ages				
0	0.6	0.4	1.9	-2.0
10	-0.3	-0.1	1.9	-3.1
20	-1.4	-0.6	1.5	-4.2
30	-1.7	-0.5	0.9	-2.0
40	-1.5	-0.6	0.4	1.3
50	-1.0	-0.5	0.1	4.2
60	-0.4	-0.4	0	5.6
70	0	0	0	4.8
80	0	0	0	2.2
Future Generations	3.0	2.2	2.4	-2.2

Source: Authors' calculations.

Table 3

Changes in Generational Accounts from Medicare Policies

(present value, thousands of dollars)

	2 Percent Growth Rate			4 Percent Growth Rate		
	Future Generations Pay	Eventual Medicare Benefit Cut	Pay-As-You-Go Finance	Future Generations Pay	Eventual Medicare Benefit Cut	Pay-As-You-Go Finance
Males						
Ages						
0	-0.2	0.1	1.6	-0.5	0.3	3.4
10	-0.4	0.2	2.1	-0.9	0.5	4.6
20	-0.6	0.4	2.3	-1.4	0.8	4.9
30	-1.0	0.7	1.6	-2.2	1.6	3.6
40	-1.6	0.1	0.4	-3.5	0.1	0.7
50	-2.7	-1.9	-1.6	-5.9	-4.2	-3.5
60	-4.2	-4.2	-3.9	-9.2	-9.2	-8.5
70	-3.6	-3.6	-3.5	-7.7	-7.7	-7.5
80	-2.0	-2.0	-2.0	-4.3	-4.3	-4.3
Future Generations	8.9	3.3	2.0	19.4	7.1	4.3
Females						
Ages						
0	-0.3	0.2	0.7	-0.7	0.4	1.5
10	-0.5	0.3	0.9	-1.2	0.7	1.9
20	-0.8	0.5	0.7	-1.8	1.1	1.5
30	-1.3	0.9	0	-2.9	2.0	0
40	-2.1	0.3	-1.2	-4.7	0.6	-2.6
50	-3.5	-2.0	-3.0	-7.8	-4.5	-6.6
60	-5.5	-5.5	-5.3	-11.9	-11.9	-11.6
70	-4.9	-4.9	-4.9	-10.7	-10.7	-10.6
80	-2.9	-2.9	-2.9	-6.2	-6.2	-6.2
Future Generations	4.2	1.8	0.8	9.0	3.8	1.9

Source: Authors' calculations.