Restoring Generational Balance in U.S. Fiscal Policy: What Will It Take?

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Introduction

Generational accounting is a relatively new method of reorganizing the government's budget data to understand how the burden of paying for government spending on goods and services is distributed among living and future generations.[1] To study this distribution, generational accounting estimates *lifetime net tax rates* facing different generations under current policies.[2] For a given generation, the lifetime net tax rate is its per capita *lifetime net tax burden* as a share of the present value of its per capita lifetime labor income.

The lifetime net tax burden, in turn, is the present value of per capita taxes net of transfers that members of a generation pay over their lifetimes, evaluated as of their year of birth. For generations currently alive, the lifetime net tax burden includes net taxes they have paid in the past and those they may expect to pay in the future. Similar remarks apply to the calculation of the present value of a generation's per capita lifetime labor income.

In contrast to the three previous years, a generational accounting analysis of U.S. fiscal policy was not included in the Budget of the United States for fiscal year 1996.[3] This paper presents such an analysis. It reports updated lifetime net tax rates using the latest long-range tax and expenditure projections made by the Office of Management and Budget (OMB).[4]

Earlier presentations of lifetime net tax rates indicated that current U.S. fiscal policy contains a large generational imbalance—a result that this update confirms. If the current fiscal treatment of living (including newborn) generations continues throughout their lifetimes, the lifetime net tax rate on those born in 1993 would be about 34 percent, while future generations

■ **1** The technique of generational accounting was developed in Auerbach, Gokhale, and Kotlikoff (1991) and in Kotlikoff (1992). See also Auerbach, Gokhale, and Kotlikoff (1994). Unless stated otherwise, *spending* in this paper refers to government purchases of goods and services.

■ **2** A generation is defined as individuals of a particular sex born in the same year.

■ **3** The last generational accounting presentation in the U.S. Budget appeared in Office of Management and Budget (1994), chapter 3.

■ **4** These projections are an extension of the OMB's 1994 Mid-Session Review baseline projection and incorporate, among other things, long-term demographic and fiscal projections of the Social Security Administration and the Health Care Financing Administration.

would face an average rate of 84 percent.[5] That is, under current policies, future generations would bear a fiscal burden two-and-a-half times as large, on average, than that on the current newborn generation. Further, a sizable fiscal imbalance remains despite incorporating optimistic assumptions about the path of future federal purchases and health care outlays in the calculations. Such large projected fiscal burdens on future generations imply that current fiscal policy is "unsustainable"—a conclusion that is robust to alternative assumptions about future productivity growth and interest rates.

This method of calculating the imbalance in U.S. fiscal policy has been criticized on several grounds. One objection focuses on the assumption that living generations will continue to be treated per current fiscal policy throughout their lifetimes, while the tax treatment of those born in the future will differ. To some, this assumption seems to imply that the incidence of future policy changes to correct the imbalance would fall exclusively on future generations. They suggest that the calculations be altered to include the impact of future policy changes on the lifetime net tax rates of living generations, since this will normally be the case. Then, they contend, lifetime net tax rates on future generations would decline from the high levels suggested in earlier generational accounting presentations to more plausible and acceptable levels, and most of the dramatic conclusions drawn by generational accounting would disappear.[6]

The assumption of unchanged tax treatment of living generations was only a heuristic and was not intended to suggest that future policy changes will apply only to future generations. Nevertheless, this paper responds to the criticism directly by posing a question: What are the magnitudes of tax increases, transfer cuts, or spending reductions necessary to equalize the lifetime net tax rates of current newborn and future generations—that is, to restore a generationally balanced fiscal policy?

The experiments assume that policy changes, when introduced, will apply to all generations alive then and in every year thereafter. Hence, the new policies will affect the lifetime net tax rates of most generations alive in 1993, our base year. The tax, transfer, and spending policy experiments are conducted for a set of baseline projections of future revenues and outlays as well as for alternative assumptions about the growth paths of federal purchases and health care outlays. In each case, we report the changes in taxes, transfers, or purchases needed to equalize lifetime net tax rates of future and current newborn generations. We also present the values of the equalized lifetime net tax rates.

The calculated tax hikes, transfer reductions, or spending cuts required for achieving a generationally balanced fiscal policy are immense—much larger than those recently considered by Congress as part of the debate to balance the budget by the year 2002. Thus, achieving a balanced budget by that date would not place U.S. fiscal policy on a sustainable path unless budget balance were preserved thereafter. The reason is that under current projections, growth in outlays after 2002 will far outstrip growth in revenues, and maintaining a balanced budget beyond 2002 is likely to require cuts in addition to those needed just to balance the budget by that year.

The policy changes required to equalize lifetime net tax rates of newborn and future generations can be viewed as alternative measures of the imbalance in current U.S. fiscal policy. Unlike the critics' conjecture, these measures also suggest that a substantial imbalance is embedded in current U.S. fiscal policy.

I. How Are Generational Accounts and Lifetime Net Tax Rates Computed?[7]

Generational accounts refer to the present value of taxes net of transfers that a member of each generation may expect to pay on average now and in the future. Thus, generational accounts reveal the *prospective* net tax burdens on different generations. In contrast, *lifetime* generational accounts include net taxes paid in the past and refer to the present value of net taxes as of the generation's year of birth.

■ **5** The estimates presented in Office of Management and Budget (1994), chapter 3, were 36.3 percent on current (1992) newborns and 82 percent on future generations. The differences in the estimates reported here stem from technical improvements incorporated in the calculations as well as from the use of previously unavailable long-range budgetary projections provided by the OMB. The lifetime net tax rates reported are averaged across male and female generations.

■ **6** For examples of such criticism, see Eisner (1994) and Haveman (1994). Another criticism, not dealt with here, stems from the Ricardian equivalence proposition, which states that current generations, perceiving the tax increases on future generations implicit in the deficit financing of current government spending, will respond by increasing their saving and bequests. However, formal tests fail to detect the altruistic behavior required for Ricardian equivalence. See Altonji, Hayashi, and Kotlikoff (1992).

■ **7** This section presents a brief discussion of the method of generational accounting. For more detailed treatments, see Auerbach, Gokhale, and Kotlikoff (1991) and Kotlikoff (1992). See also Office of Management and Budget (1994), chapter 3.

A. Living Generations

Lifetime generational accounts are used here to compute the lifetime net tax rate facing each generation born between 1900 and 1993. The calculations use National Income and Product Account data on federal, state, and local taxes, transfers, and spending for each year up to 1993, as well as OMB projections of these aggregates up to 2030.[8]

In the computational procedure, total taxes and expenditures are classified into several categories for each year between 1900 and 2030. We include taxes on incomes from labor and capital, payroll taxes, and indirect taxes. Expenditures refer to transfers such as Social Security, Medicare, Medicaid, and other welfare payments, plus government purchases. The amount in each tax and transfer category is distributed among generations alive in a certain year—cohorts by single year of age and sex ranging from newborn to 100 years old. For years prior to and including 1993, we use actual population data to perform this distribution; for future years, we use population projections from the Social Security Administration.[9]

The amounts of per capita taxes or transfers distributed to members of each generation are determined according to relative profiles of tax payments and transfer receipts obtained from microeconomic surveys.[10] Current and past taxes and transfers are distributed among different generations using available information on age- and sex-specific payments and receipts for those years. For some categories, such as Social Security transfers, relative profiles are available for each year between 1960 and 1992. For others, profiles are available for only a few of the years. For each payment and receipt category, the earliest available profile is used for distributing payments and receipts in prior years. Similarly, the latest available profile is used to distribute the amounts in later (including future) years.

For years beyond 2030, we project the per capita amounts of taxes and transfers by applying a growth factor to the values for the year 2030. The prospective generational account for each current (1993) generation is computed by subtracting total transfer receipts from total tax payments in each future year that the generation will be alive, actuarially discounting the resulting net tax payments back to 1993 using an assumed rate of interest, r, and summing over the remaining years of life for that generation.

The computation of the lifetime generational account for a given generation alive in 1993 uses the same type of calculation, except that net taxes paid in the past are also included. Moreover, the annual net taxes are actuarially discounted back to the generation's year of birth. In the case of the generation aged 43 in 1993 (those born in 1950), for example, per capita net taxes paid up to 1993 and projected net taxes paid up to 2050 (age 100) are capitalized to yield a generational account as of 1950.

The present value of lifetime labor income is used as a base to calculate the lifetime net tax rate for each generation. As mentioned earlier, the lifetime net tax rate is the lifetime generational account as a percent of the present value of lifetime labor income. For each generation, the stream of per capita labor income earned in each year up to 1993 and projected income for future years is capitalized to produce the present value of lifetime labor income. We derive the estimates of per capita labor income in a manner similar to that for deriving per capita taxes and transfers: In each year, labor's share of net national income is distributed by relative profiles of labor income. These profiles are based on individual wage and salary data from the Census Bureau's Current Population Survey and are constructed for the years 1963 through 1992.

The implications of current fiscal policy for the lifetime net tax rates on future generations (those born after 1993) can be derived by using the accounts of generations currently alive. This computation requires a consideration of the government's intertemporal budget constraint, which can be specified as

$$(1) \qquad PVSPEND_t = GW_t + PVC_t + PVF_t.$$

Equation (1) states that the present value of the government's current and projected purchases, $PVSPEND_t$, must equal the government's current net worth, GW_t, plus the present value of prospective net tax payments of all generations

■ **8** All outlays and receipts are measured in 1993 dollars.

■ **9** We use the intermediate population projections through 2066 made by the Social Security Administration. We then extend these projections through 2200 using the mortality, fertility, and immigration assumptions applicable in 2066.

■ **10** These surveys include the Survey of Consumer Expenditures by the Bureau of Labor Statistics, the Survey of Income and Program Participation by the Bureau of the Census, the Current Population Survey by the Bureau of the Census, the Annual Abstracts of the Social Security Bulletin by the Social Security Administration, and the Survey of Consumer Expenditures by the Federal Reserve System.

currently alive, PVC_t, plus the present value of net tax payments of all future generations, PVF_t. The sum of prospective generational accounts over all individuals currently alive provides an estimate of PVF_t.

We estimate the value of $PVSPEND_t$ by computing the present value of current and projected government spending on goods and services. Projections of purchases through 2030 assume that government purchases will keep pace with population growth and with increases in labor productivity. Spending projections beyond 2030 are made by applying a growth factor to per capita spending in 2030. Under the assumption that the 2030 spending per capita will be maintained thereafter (except for an adjustment for growth), aggregating the per capita amounts across the (projected) population for years beyond 2030 yields total spending for these years.

The per capita amounts of purchases in 2030 are obtained by dividing the 2030 value of total purchases into one general and three age-specific categories and distributing these equally across the relevant (projected) population segments for the year 2030. Finally, we estimate GW_t by cumulating annual government deficits over time.[11] For the United States, the value of GW_t is negative because government budgets have been in deficit for most years during the last several decades.

Knowing three of the four terms in equation (1) enables us to derive the remaining item, PVF_t, as a residual. Thus, PVF_t is the amount of the present value of government purchases not covered by current government net worth plus the present value of current and future net tax payments by living generations. This residual must be paid for by net tax payments to be levied on generations as yet unborn.

Although the manner in which the residual burden will be distributed across unborn generations is unknown today, we can illustrate its magnitude by distributing it according to some predetermined rule. Here, we adopt the criterion that the distribution should equalize the lifetime net tax rates of all future generations. This requires that the residual burden be distributed equally across all future generations except for an adjustment for growth.[12] Thus, generations born in year t pay net tax burdens $1 + g$ times the net tax burdens of generations born in year $t - 1$, where g is the annual rate of growth of labor productivity.[13] Because future labor income is assumed to grow at rate g, this adjustment imposes equal lifetime net tax rates on all future generations.

A comparison of the lifetime net tax rate on future generations with that on newborn generations is one way to estimate the degree of generational imbalance embedded in current fiscal policy. The lifetime net tax rate on newborn generations is derived by finding the ratio of the present value of their net tax payments *under current policy projections* to the present value of their lifetime labor incomes. If a growth-adjusted distribution of the residual burden among future generations produces a lifetime net tax rate significantly larger than that on current newborns, fiscal policy can be viewed as being biased against future generations. If the lifetime net tax rate on future generations is judged as being prohibitively high, current fiscal policy may be deemed unsustainable.

II. Generational Accounts and Lifetime Net Tax Rates for the United States

A. Prospective Generational Accounts

Baseline prospective generational accounts for selected generations alive in 1993 are shown in tables 1 and 2. The calculations include all federal, state, and local government taxes, transfers, and spending on goods and services and assume that government spending on goods and services will keep pace with population and productivity growth. They also incorporate conservative estimates of growth in government

■ **11** This method does not include the value of government physical assets in GW_t. However, if it did, one would have to include the present value of imputed rent on these assets in $PVSPEND_t$, representing the government's purchase of the service flow from these assets for public consumption. Because these two items would be equal in present value, constraint (1) would be unaffected.

■ **12** Equal *absolute* distribution of the residual burden would successively reduce the lifetime net tax rates on generations born later because continued productivity growth will cause their labor income to exceed that of generations born earlier. A growth-adjusted distribution of the residual burden would result in the imposition of equal lifetime net tax rates on all future generations. For a further discussion of these issues, see Kotlikoff and Gokhale (1994).

■ **13** We assume that the ratio of per capita net tax burdens on future male and female generations is the same as that on newborns.

TABLE 1

The Composition of Male Generational Accounts ($r = 0.06$, $g = 0.012$) (present values in thousands of 1993 dollars)

Generation's Age in 1993	Net Tax Payment	Taxes Paid				Transfers Received		
		Labor Income Taxes	Capital Income Taxes	Payroll Taxes	Excise Taxes	Social Security	Health	Welfare
0	87.2	39.9	9.6	38.3	34.4	8.8	22.4	3.9
5	107.0	49.1	12.1	47.6	40.0	10.8	26.2	4.9
10	130.3	60.0	15.1	59.0	46.0	12.8	30.8	6.3
15	159.6	73.4	19.1	73.4	52.5	14.7	36.1	8.0
20	188.7	86.6	24.1	88.1	57.0	16.6	40.6	9.7
25	199.9	92.2	28.5	94.5	57.2	19.8	42.4	10.3
30	195.7	90.8	33.7	93.0	56.0	23.6	44.2	9.9
35	182.7	86.1	39.9	88.0	54.6	28.8	47.8	9.3
40	158.6	77.9	44.9	79.7	53.3	35.5	53.2	8.6
45	119.7	65.7	47.6	67.6	50.1	43.5	59.8	7.9
50	68.0	50.5	48.0	52.4	45.7	53.9	67.4	7.3
55	7.1	33.9	46.0	35.4	40.2	67.0	74.7	6.6
60	–57.0	18.0	42.3	18.9	34.0	83.6	80.8	5.9
65	–105.1	7.2	37.2	7.2	28.2	93.5	86.3	5.1
70	–108.3	3.1	29.4	3.2	22.6	85.5	76.6	4.5
75	–100.8	1.6	19.7	1.6	17.1	71.5	65.6	3.7
80	–86.3	0.9	9.9	1.0	12.0	54.5	52.8	2.7
85	–76.2	0.6	0.0	0.7	8.0	42.3	41.4	1.8
90	–58.9	0.5	0.0	0.5	6.4	33.5	31.4	1.4
Future generations[a]	215.5	—	—	—	—	—	—	—
	Percentage Difference in Net Payments							
Future generations and age zero	147.1	—	—	—	—	—	—	—

a. Generations born in 1994 and thereafter.
SOURCE: Authors' calculations.

health care outlays. The growth of Medicare and Medicaid expenditures averaged 7.4 and 15.5 percent, respectively, over the last five years. The baseline incorporates a rapid growth in these outlays until 2005, with somewhat slower growth thereafter.[14]

The prospective net tax burdens shown in tables 1 and 2 exhibit a pronounced life-cycle pattern. Working-age generations, who are in their high earning and taxpaying years, have positive net tax burdens: The present values of their income, payroll, and indirect taxes are large, but values of receipts from Social Security and health care transfers are small. The opposite result holds true for older generations.

In 1993, newborn males may expect to pay $87,200, and newborn females $53,200, on net, under baseline policies during their remaining lifetimes. In contrast, average lifetime net tax burdens amount to $215,500 for future males and $131,500 for future females if the fiscal treatment of living generations continues under baseline policies.

As mentioned earlier, prospective generational accounts can be combined with past net tax payments to calculate lifetime net tax burdens for all living generations. Taken as fractions of lifetime labor incomes, they yield lifetime net tax rates. Table 3 shows baseline lifetime gross and net tax rates and gross transfer rates for generations

■ **14** Post-2005 growth rates for Medicare and Medicaid outlays are the OMB's best estimates. The growth rates used in all calculations are available from the authors upon request.

TABLE 2

The Composition of Female Generational Accounts ($r = 0.06$, $g = 0.012$) (present values in thousands of 1993 dollars)

Generation's Age in 1993	Net Tax Payment	Taxes Paid				Transfers Received		
		Labor Income Taxes	Capital Income Taxes	Payroll Taxes	Excise Taxes	Social Security	Health	Welfare
0	53.2	23.0	10.2	23.3	33.1	8.3	18.3	9.8
5	64.3	28.2	12.7	28.9	38.3	10.2	21.4	12.3
10	77.2	34.5	16.0	35.8	43.7	12.1	25.4	15.4
15	92.9	42.1	20.2	44.5	49.2	13.8	30.1	19.1
20	109.2	49.3	25.4	53.1	53.0	15.5	34.3	21.7
25	114.7	51.0	30.6	55.6	53.7	18.6	38.3	19.4
30	109.2	48.3	35.7	53.0	53.3	22.3	43.0	15.8
35	97.3	44.3	41.0	48.9	52.8	27.3	49.9	12.6
40	76.1	39.0	44.4	43.5	51.4	33.6	58.8	9.7
45	42.6	31.8	45.2	35.7	48.5	41.6	69.6	7.3
50	−0.3	23.4	43.9	26.6	44.2	52.0	80.7	5.7
55	−49.9	14.7	41.6	16.8	39.3	65.6	92.0	4.6
60	−101.0	7.3	38.0	8.4	33.6	82.8	101.6	3.9
65	−139.1	2.6	32.0	3.0	28.0	91.9	109.3	3.5
70	−140.4	1.0	22.5	1.2	22.8	84.8	100.0	3.1
75	−131.3	0.5	12.4	0.5	17.3	72.0	87.3	2.7
80	−111.7	0.3	4.7	0.3	12.6	57.2	70.3	2.2
85	−88.8	0.1	0.0	0.1	9.5	43.1	53.8	1.7
90	−64.8	0.1	0.0	0.1	7.2	32.6	38.4	1.3
Future generations[a]	131.5	—	—	—	—	—	—	—

a. Generations born in 1994 and thereafter.
SOURCE: Authors' calculations.

TABLE 3

Lifetime Net Tax Rates for Living and Future Generations under Baseline Assumptions

Generations by Year of Birth	Net Tax Rate	Gross Tax Rate	Gross Transfer Rate
1900	23.6	27.2	3.6
1910	27.0	32.8	5.7
1920	29.1	36.1	7.1
1930	30.4	38.7	8.4
1940	31.4	41.0	9.7
1950	32.6	44.3	11.6
1960	33.5	46.7	13.2
1970	34.1	49.0	15.0
1980	34.2	50.3	16.1
1990	34.2	51.3	17.0
1993	34.2	51.4	17.3
Future generations[a]	84.4	—	—

a. Generations born in 1994 and thereafter.
NOTE: Calculations incorporate OMB projections.
SOURCE: Authors' calculations.

born in the year 1900 and in every tenth year thereafter. It also presents these rates for 1993 newborns and future generations.

The lifetime net tax rates are population-weighted averages over male and female generations born in the same year. Table 3 shows that lifetime net tax rates have risen from nearly 24 percent on generations born in 1900 to more than 34 percent on those born in 1993.[15] For newborns in 1993, the net tax rate is the difference between a gross tax rate of 51 percent and a gross transfer rate of 17 percent. The gross tax rate includes taxes on labor and capital income, payroll taxes, and indirect and other taxes. The gross transfer rate encompasses receipts from Social Security, Medicare, Medicaid,

■ **15** More precisely, this rise occurred between 1900 and 1970. Lifetime net tax rates on generations born after 1970 will be maintained at 34.2 percent if generations currently alive continue to be treated per baseline fiscal policies.

TABLE 4

Lifetime Net Tax Rates for Living and Future Generations under Alternative Health Care and Federal Spending Paths

Generations by Year of Birth	Baseline	Slower Spending Growth[a]	Slower Health Care Growth[b]	Slower Health Care and Spending Growth
1900	23.6	23.6	23.6	23.6
1910	27.0	27.0	27.1	27.0
1920	29.1	29.1	29.2	29.2
1930	30.4	30.4	30.7	30.7
1940	31.4	31.4	31.9	31.9
1950	32.6	32.6	33.4	33.4
1960	33.5	33.5	34.4	34.4
1970	34.1	34.1	35.3	35.3
1980	34.2	34.2	35.7	35.7
1990	34.2	34.2	36.0	36.0
1993	34.2	34.2	36.0	36.0
Future generations[c]	84.4	73.1	70.4	59.1

a. Federal spending is held constant in real terms after the year 2000.
b. Health care spending grows at a 2 percent slower rate than the baseline through 2005, followed by baseline growth.
c. Generations born in 1994 and thereafter.
NOTE: Calculations incorporate OMB projections.
SOURCE: Authors' calculations.

TABLE 5

Percentage Difference under Alternative Interest and Growth Rates: Baseline

g =	0.007	0.012	0.017
r =			
0.03	120	119	122
0.06	158	147	137
0.09	280	261	243

SOURCE: Authors' calculations.

TABLE 6

Percentage Difference under Alternative Interest and Growth Rates: Slower Health Care Growth and Constant Real Federal Purchases

g =	0.007	0.012	0.017
r =			
0.03	49	43	38
0.06	72	64	57
0.09	149	137	125

SOURCE: Authors' calculations.

and other welfare transfers. The lifetime net tax rate on future generations is a staggering 84 percent, which is almost two-and-a-half times as large as that on newborns in 1993.[16]

Table 4 reports lifetime net tax rates under alternative future paths for outlays on health care and federal purchases. Specifically, column 1 of table 4 repeats the baseline lifetime net tax rates of table 3. Column 2 shows the effect of freezing real federal spending on goods and services permanently beginning in 2000. Lifetime net tax rates of all living generations are unchanged, since neither future tax nor transfer payments are affected by this policy. However, because reducing federal purchases lessens the residual burden on future generations, their lifetime net tax rate is lowered to 73 percent. This result suggests that freezing federal purchases permanently is not sufficient to put the U.S. fiscal house in order from a generational accounting perspective.

Column 3 of table 4 reports the effect of assuming a 2 percent slower growth in health care outlays until 2005, with baseline growth thereafter. Slower growth in health care spending raises the lifetime net tax rates of young and middle-aged living generations—those who will receive lower health care transfers as a result. It also reduces the lifetime net tax rate on future generations by 14 percentage points. Thus, although slower growth in government health care expenditures over the next decade will reduce the generational imbalance in U.S. fiscal policy, a sizable imbalance may still remain.

Column 4 of table 4 shows the effect of combining the policies of columns 2 and 3—an optimistic scenario. This reduces the lifetime net tax rate on future generations from 84 percent to 59 percent. Thus, even if federal purchases are not increased beyond current levels and growth in health care outlays is 2 percentage points lower than the baseline over the next 10 years, future generations will incur lifetime net tax rates that are 64 percent larger, on average, than those facing current newborns.

The baseline and other policies discussed so far use a 6 percent rate of discount ($r = 0.06$) and a 1.2 percent rate of average productivity growth ($g = 0.012$) to project taxes, transfers, and

■ **16** Note that future generations' lifetime net tax rate is derived by distributing the residual of the present value of government spending after government net worth and the net contribution of living generations have been deducted. Hence, it cannot be subdivided into gross tax and transfer rates.

TABLE 7

Permanent Tax Increases, Transfer Cuts, or Spending Cuts Needed to Achieve a Generationally Balanced Fiscal Policy (percent)

	Baseline	Slower Spending Growth[a]	Slower Health Care Growth[b]	Slower Health Care and Spending Growth
	A. Policy Change in 1996			
Tax Increases				
Income tax[c]	42.6	32.9	29.1	19.6
Income tax (fed. only)	51.9	40.1	35.5	23.9
Payroll tax	64.5	49.9	44.1	29.7
Indirect taxes	69.8	54.0	47.7	32.1
All taxes	18.6	14.4	12.7	8.5
Transfer Cuts				
Social Security	95.0	73.5	65.0	43.7
Health	59.2	45.8	49.0	33.0
All transfers	32.8	25.3	24.8	16.7
Spending Cuts				
Entire government	31.6	26.3	21.7	15.8
Federal	97.4	93.7	67.9	60.2
Federal nondefense	—[d]	—[d]	—[d]	—[d]
	B. Policy Change in 2001			
Tax Increases				
Income tax[c]	51.5	39.9	35.2	23.7
Income tax (fed. only)	62.6	48.5	42.8	28.8
Payroll tax	79.2	61.3	54.1	36.4
Indirect taxes	87.5	67.7	59.8	40.3
All taxes	22.8	17.6	15.6	10.5
Transfer Cuts				
Social Security	—[d]	87.2	77.0	51.8
Health	66.4	51.4	55.8	37.5
All transfers	37.8	29.3	28.9	19.5
Spending Cuts				
Entire government	38.8	32.9	26.7	19.7
Federal	—[d]	—[d]	84.9	80.2
Federal nondefense	—[d]	—[d]	—[d]	—[d]
	C. Policy Change in 2016			
Tax Increases				
Income tax[c]	97.7	75.6	66.8	45.0
Income tax (fed. only)	118.2	91.5	80.8	54.4
Payroll tax	156.4	121.0	106.9	72.0
Indirect taxes	189.2	146.4	129.4	87.1
All taxes	45.2	35.0	30.9	20.8
Transfer Cuts				
Social Security	—[d]	—[d]	—[d]	87.4
Health	—[d]	83.2	90.7	61.0
All transfers	63.4	49.1	48.9	32.9
Spending Cuts				
Entire government	73.0	65.3	50.5	39.3
Federal	—[d]	—[d]	—[d]	—[d]
Federal nondefense	—[d]	—[d]	—[d]	—[d]

a. Federal purchases are held constant in real terms after the year 2000.
b. Health care spending grows at a 2 percent slower rate than the baseline through 2005, followed by baseline growth.
c. Federal, state, and local income taxes.
d. Requires a reduction of more than 100 percent.
SOURCE: Authors' calculations.

purchases beyond 2030.[17] Table 5 presents the percentage difference between the lifetime net tax rates on future and 1993 newborn generations under alternative interest and productivity growth rates for the baseline.[18] Table 6 depicts the same calculation for the optimistic scenario of slower health care outlay growth and constant real federal spending.

Using a higher discount rate while keeping the productivity growth rate constant can have an ambiguous effect on the percentage differential. In present-value calculations, a higher rate of discount reduces the relative weight on net payments that are further into the future. Hence, if the profile of aggregate net tax payments by living generations is rising through time while that of government purchases is falling, a higher discount rate will tend to increase the residual burden on future generations. If the slopes of the time profiles of spending and net payments are reversed, a higher discount rate may reduce the residual burden. Similar remarks apply for varying the rate of productivity growth while keeping the discount rate fixed. Despite the ambiguity, however, it is useful to examine whether the conclusion of an imbalanced U.S. fiscal policy is sustained over a reasonable range of interest and growth rates.

Table 5 shows that for many such rates, the lifetime net tax rate of future generations is more than twice as large as that of 1993 newborns. Under optimistic projections (table 6), the percentage differentials range from 38 percent to 149 percent. Thus, the conclusion that current U.S. fiscal policy is severely imbalanced remains true under a wide range of interest and growth rates, despite using optimistic assumptions about future federal purchases and health care outlay paths.

B. Fiscal Policies Required to Eliminate the Imbalance

Next, to address the methodological criticism discussed earlier, we compute the tax increases, transfer cuts, or spending reductions necessary

■ **17** Earlier presentations of generational accounting assumed a 0.75 percent rate of productivity growth. The OMB's latest budget projections through 2030 incorporated the assumption of a 1.2 percent rate of productivity growth (defined in terms of GDP per worker). This dictated the use of the same rate for years beyond 2030.

■ **18** The percentage difference is calculated as $([F/C]-1) \times 100$, where F is the lifetime net tax rate on future generations and C is the same rate on 1993 newborns.

TABLE 8

Equalized Lifetime Net Tax Rates for Newborn and Future Generations Resulting from Table 7 Policies (percent)

	Baseline	Slower Spending Growth[a]	Slower Health Care Growth[b]	Slower Health Care and Spending Growth
	A. Policy Change in 1996			
Tax Increases				
Income tax[c]	42.7	40.8	41.9	39.9
Income tax (fed. only)	42.8	40.9	41.9	40.0
Payroll tax	43.9	41.7	42.6	40.5
Indirect taxes	44.8	42.4	43.3	40.9
All taxes	43.6	41.5	42.4	40.3
Transfer Cuts				
Social Security	38.1	37.2	38.7	37.8
Health	39.9	38.6	39.8	38.6
All transfers	39.7	38.5	39.8	38.5
Spending Cuts				
Entire government	34.2	34.2	36.0	36.0
Federal	34.2	34.2	36.0	36.0
Federal nondefense	—[d]	—[d]	—[d]	—[d]
	B. Policy Change in 2001			
Tax Increases				
Income tax[c]	44.5	42.2	43.1	40.8
Income tax (fed. only)	44.6	42.2	43.1	40.8
Payroll tax	46.0	43.4	44.1	41.5
Indirect taxes	46.4	43.6	44.4	41.6
All taxes	45.4	42.9	43.7	41.2
Transfer Cuts				
Social Security	—[d]	37.6	39.1	38.1
Health	40.4	39.0	40.2	38.8
All transfers	40.4	39.0	40.3	38.9
Spending Cuts				
Entire government	34.2	34.2	36.0	36.0
Federal	—[d]	—[d]	36.0	36.0
Federal nondefense	—[d]	—[d]	—[d]	—[d]
	C. Policy Change in 2016			
Tax Increases				
Income tax[c]	52.5	48.4	48.6	44.5
Income tax (fed. only)	52.6	48.4	48.6	44.5
Payroll tax	55.6	50.8	50.7	45.9
Indirect taxes	51.7	47.8	48.0	44.1
All taxes	53.2	48.9	49.0	44.8
Transfer Cuts				
Social Security	—[d]	—[d]	—[d]	38.8
Health	—[d]	40.8	41.8	39.9
All transfers	43.0	41.0	42.0	40.0
Spending Cuts				
Entire government	34.2	34.2	36.0	36.0
Federal	—[d]	—[d]	—[d]	—[d]
Federal nondefense	—[d]	—[d]	—[d]	—[d]

a. Federal purchases are held constant in real terms after the year 2000.
b. Health care spending grows at a 2 percent slower rate than the baseline through 2005, followed by baseline growth.
c. Federal, state, and local income taxes.
d. Requires a reduction of more than 100 percent.
SOURCE: Authors' calculations.

to eliminate the generational imbalance in U.S. fiscal policy. Various combinations of all three policies are introduced beginning in 1996, 2001, and 2016. Because the new policies are applicable to all generations alive when they are introduced, they will affect the lifetime net tax rates of most living generations. In each case, we calculate the permanent percentage increase (or reduction) required in taxes, transfers, or purchases in order to equalize the lifetime net tax rates of 1993 newborn and future generations.

Panel A of table 7 presents the percentage by which various taxes, transfers, and spending will have to change beginning in 1996 to eliminate the generational imbalance. The required percentage increases are shown for the baseline and for the alternative federal spending and health care outlay growth paths analyzed in table 4. Under baseline projections, income tax revenues would have to increase permanently by almost 43 percent beginning in 1996 to equalize the lifetime net tax rates of newborn and future generations. This implies that the average income tax rate would have to rise from 15.7 percent currently to 22.3 percent immediately and permanently.

Under the fortuitous case of slow growth in health care outlays and zero growth in federal purchases, income taxes would have to increase by about 20 percent. If only federal income taxes are considered, the required increases in annual revenues range between 24 and 52 percent; those necessary under payroll or indirect tax hike policies are even larger. If all taxes are considered, eliminating the imbalance in U.S. fiscal policy would require tax hikes of about 19 percent under baseline projections and 8.5 percent under the optimistic scenario.

Cuts in transfers to establish equal lifetime net tax rates on newborn and future generations would also be severe. Under the baseline projection, a 33 percent permanent and across-the-board reduction in transfers beginning in 1996 would be necessary to restore a generationally balanced policy. Alternatively, restoring balance would require permanently reducing the size of combined federal, state, and local government purchases by 32 percent beginning in 1996.

Table 8 shows the value at which the lifetime net tax rates on 1993 newborns and future generations would be equalized under the corresponding policies shown in table 7. Under baseline projections, for example, increasing all taxes permanently by 19 percent beginning in 1996 would raise the lifetime net taxes of 1993 newborns from 34 percent to 44 percent and

TABLE 9

Impact of the Balanced Budget Proposal by the Year 2002 on Lifetime Net Tax Rates of Living and Future Generations

Generations by Year of Birth	Baseline	Balanced Budget Proposal	Difference[b]
1900	23.6	23.6	0.0
1910	27.0	27.1	0.1
1920	29.1	29.2	0.1
1930	30.4	30.6	0.2
1940	31.4	31.7	0.3
1950	32.6	33.1	0.5
1960	33.5	34.0	0.5
1970	34.1	34.8	0.7
1980	34.2	35.2	1.0
1990	34.2	35.2	1.0
1993	34.2	35.1	0.9
Future generations[c]	84.4	72.5	–11.9

a. Present value of lifetime net taxes as a ratio of the present value of lifetime labor income.
b. Percentage-point increase in the net tax rate if the balanced budget proposal is adopted.
c. Generations born in 1994 and thereafter.
SOURCE: Authors' calculations.

reduce that on future generations from 84 percent to 44 percent. That is, increasing all taxes permanently by 19 percent is equivalent to increasing lifetime *net* tax rates of 1993 newborns by almost 30 percent. Note that the equalized lifetime net tax rates on newborn and future generations are different for different policies. If an across-the-board transfer cut were adopted instead of an across-the-board tax hike, lifetime net tax rates on newborn and future generations would be equalized at 40 percent instead of 44 percent.

Delaying policy changes to restore a generationally balanced fiscal policy is likely to prove costly. This can be seen from panels B and C in tables 7 and 8. Raising income taxes beginning in 2001 instead of in 1996 will necessitate an increase of 52 percent instead of 43 percent. Similarly, initiating cuts in government purchases in 2001 instead of in 1996 will deepen the cuts to 39 percent from 32 percent. Introducing these policies in 2016 will push the required income-tax hike to 98 percent and will increase the cuts required in government purchases to 73 percent.

The same is true for all other tax increases and transfer or spending cuts. Indeed, some spending and transfer cuts that will restore generational balance if implemented in 1996 are no longer feasible if implemented in 2001 or 2016 because the required cuts would exceed 100 percent. For example, eliminating health care transfers *entirely* beginning in 2016 would not be sufficient to restore a generationally balanced policy.

The required hikes in taxes or cuts in transfers and spending to restore generational equity are quite considerable. The main message of this section is that no matter how one chooses to calculate it, the mammoth size of the imbalance in U.S. fiscal policy cannot be made to disappear. Moreover, policy changes to correct the imbalance need to be introduced sooner rather than later: Procrastination will only make the medicine more bitter.

III. The Balanced Budget Amendment

This section contrasts the policies required for restoring generational balance in fiscal policy with those being considered by policymakers today. While debating the adoption of a balanced budget amendment to the U.S. Constitution, Congress recently considered proposals to cut all outlays except for defense and Social Security. Here, we consider the impact of similar cuts on the generational stance of U.S. fiscal policy. The outlay reductions involve cuts in nondefense discretionary spending ranging from 1 percent in 1996 to 4 percent in 2002 from our baseline values. For Medicare and Medicaid, the reductions range from 3 percent in 1996 to 14 percent in 2002. Finally, cuts in other mandatory spending categories range from 4 percent in 1996 to 16 percent in 2002. For each category, the percentage cut for 2002 is preserved in later years.[19]

Table 9 shows the impact of this proposal on the lifetime net tax rates of living and future generations. The rates are higher for living, especially younger, generations. The rate for generations born in 1950, for example, increases by 0.5 percent, while that for 1993 newborns is almost 1 percentage point higher. The proposal would imply a reduction in the lifetime net tax rate of future generations from 84 to 73 percent.

The outlay cuts analyzed here redress the imbalance to some extent, but still leave an unsustainably large lifetime net tax rate on future generations. Thus, under what we consider to

■ **19** These cuts balance the federal budget by the year 2002 from a "current law" baseline in which federal discretionary spending is frozen in nominal terms. Under our conservative baseline, however, the budget remains in deficit in all future years.

be conservative but reasonable budget projections, future Congresses may need to rein in outlays or increase revenues further to restore generational balance to U.S. fiscal policy. Given the results of the previous section, leaving such large adjustments for future consideration is likely to prove costly.

IV. Conclusion

The generational stance of current U.S. fiscal policy is badly out of balance. It is impossible to avoid this conclusion no matter which of many alternative measures one uses to analyze the generational distribution of net tax burdens. Although tax cuts seem to have widespread political appeal today, the analysis presented here suggests that enacting them may be the wrong thing to do.

In fact, the early adoption of fiscal measures to reduce the projected heavy net tax burdens on future generations is imperative. This requires either increasing taxes or reducing government outlays today. Redressing the current U.S. fiscal imbalance is important because such heavy burdens will prove economically infeasible to impose on future generations in view of the fact that gross tax rates would have to be higher than net tax rates. Moreover, imposing high lifetime net tax burdens on future generations may depress their incentives to work, save, and invest, thereby hurting future Americans' living standards. Finally, the analysis shows that postponing the adoption of corrective measures will only worsen the choices available to policymakers in the future.

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