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Generational Accounts for the United States: An Update

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Generational Accounts for the United States: An Update

Although relatively new, generational accounting has been used in 26 countries to evaluate the generational stance of national fiscal policies.[1] Generational accounting calculates the size of prospective net tax burdens and lifetime net tax rates that different generations face under current fiscal policy—information that standard budget presentations do not reveal.[2] This method can also be used to calculate the policy changes required for achieving a generationally balanced and therefore sustainable fiscal policy—one that implies equal lifetime net tax rates on today's newborns and future generations (those born after 1998).

Calculations made two years ago suggested a sizable generational imbalance in U.S. fiscal policy, implying lifetime net tax rates on future generations that are 72 percent higher than those on newborns in 1995.[3] Since then, unexpectedly strong growth in both gross domestic product (GDP) and the tax share of GDP has boosted revenues, and slow growth in defense spending has reduced federal purchases as a share of GDP to a postwar low. Those developments augur federal budget surpluses for at least a decade and portend a corresponding reduction in the generational imbalance.

This paper presents the latest generational accounts and lifetime net tax rates for the United States. As before, calculations are based on a reference path modified from a 75-year projection by the Congressional Budget Office (CBO).[4] The reference path used here incorporates a growth rate of labor productivity of 2.2 percent per year, a rate consistent with the historical record, given the most recent data revisions and changes in the measurement of prices.[5]

As expected, the reference projection suggests a much smaller generational imbalance than before. However, to consider the possibility that projected surpluses will not fully

materialize, we calculate U.S. generational accounts under three alternative assumptions: faster growth in government purchases, lower federal income taxes, and a policy that maintains the off-budget (trust fund) surpluses through 2009 and "spends" the on-budget surpluses through a combination of lower taxes and higher discretionary spending.

The reader is referred to earlier papers on generational accounting for a description of its methodology.[6] The following sections report the latest generational accounts for the United States under reference and alternative projections and describe policy changes that would achieve a generationally balanced fiscal policy in the United States.

I. Generational Accounts and Lifetime Net Tax Rates in the United States

The generational accounts of those alive in 1998 exhibit a significant life-cycle pattern (see Table 1). The accounts of working-age generations are large and positive: they will pay large sums in taxes in the near future and will receive Social Security and Medicare benefits only after many years. Prospectively, retired generations receive large transfers but pay little in taxes, making their accounts negative. Women have smaller generational accounts than men of the same age. Compared with men, women earn less and hence pay lower taxes; they also live longer and often receive benefits based on their spouses' earnings, making their transfers for health care and Social Security large relative to the taxes they pay.

Under reference policy, the generational account for a 1998 newborn male is $122,100. It is $61,100 for a newborn female. Those figures imply a per capita residual burden on future generations of $142,500 for males and $71,300 for females. On a growth-adjusted basis, those payments by future generations are larger than those of 1998 newborns of the same sex by 14.2 percent—the degree of imbalance implied by reference policy.

Table 2 shows lifetime net tax rates for the reference projection (averaged across men and women). Under reference policy, people born in 1998 are expected to pay just over a quarter of their lifetime labor earnings to the government as net taxes. The accounts published earlier exhibited higher lifetime net tax rates for the youngest living generations. One reason for the lower rate reported here is that labor income is expected to grow more rapidly in the future. In addition, transfers for medical care are projected to grow faster, thus reducing net tax burdens on young generations. Higher projected income taxes partially offset these differences.

Lifetime net tax rates have varied for people born during the 20th century (see Table 2). Given available historical data and the reference projection, the estimated rate is 23.3 percent for people born in 1900; it rises to 30.2 percent for those born in 1960, then falls back to 25.6 percent for those born in 1998.[7] The decline in the rate for successive generations born after 1960 is due to longer life expectancy and—more important—the rapid growth since the 1960s in per capita transfers for health care and Social Security.

Tables 1 and 2 indicate that if living generations pay net taxes according to reference policy, 1998 newborns will pay lifetime net taxes of 25.6 percent, and future generations will pay 29.2 percent. That implies that the reference policy is unsustainable. Either projected government purchases must fall, or the effective schedule at which people pay net taxes must rise—if not for current generations, then for future ones.

II. Sensitivity to Alternative Assumptions

The calculations reported above depend on economic and budgetary assumptions that are uncertain or debatable. For example, the reference projection assumes that nominal discretionary spending remains capped through 2002 and then grows at the rate of inflation through 2009.

Those assumptions imply that, on average, real federal purchases would fall by 2.7 percent a year through 2002 and then grow at just 0.3 percent a year from 2003 to 2009. But it may prove difficult to rein in federal purchases to that extent. Federal income tax revenues are subject to similar uncertainty. The reference projection assumes that most of the recent unanticipated increases in federal income taxes as a share of GDP will be permanent rather than temporary.

How are the accounts affected if we adopt different budgetary assumptions to allow for uncertainty? To find out, we calculated lifetime net tax rates and the degree of imbalance under three alternative assumptions: first, federal purchases grow after 1998 at a rate equal to the sum of the rates for labor productivity and population; second, federal income taxes as a share of GDP immediately fall from 11.9 percent to 10.4 percent—the average from 1970 through 1998; and third, the federal government preserves the projected off-budget surpluses under the reference path but "spends" the on-budget surpluses—half through lower income taxes and half through higher discretionary spending.

Given the other reference assumptions, the alternative projections increase the degree of imbalance. Under faster growth in federal purchases, the lifetime net tax rate of living generations is unchanged, but that of future generations increases from 29.2 percent to 46.0 percent—reflecting a generational imbalance of 79.9 percent. Maintaining federal income taxes at 10.4 percent of GDP reduces the per capita net taxes of those born in 1940 or later. Because they pay less, the lifetime net tax rate for future generations increases to 35.9 percent. Incorporating both alternatives raises it to 52.7 percent. Finally, maintaining off-budget surpluses for the next 10 years but spending the rest would require future generations to pay net taxes at an average rate of 32.3 percent.

III. Policies for Eliminating the Generational Imbalance

So far, we have assumed that living generations pay net taxes as scheduled under 1998 policy for the rest of their lives. However, if a fiscal schedule is unsustainable, lawmakers must eventually change it. Thus, we calculated illustrative policy changes that would achieve sustainability by equalizing the lifetime net tax rates of current newborns and future generations. The policies examined involve immediately and permanently raising all taxes, cutting all transfers, or reducing government purchases. The resulting equalized lifetime net tax rates for 1998 newborn and future generations differ by policy and require different dollar amounts of changes in taxes, transfers, or purchases in the first year of their implementation.

The results appear in Table 3. The rows list alternative ways of restoring generational balance, and the columns indicate the initial policy assumption. The first panel assumes that policy changes are initiated in 1999 and shows the percentage increases required in taxes (or the percentage cuts in transfers or in government purchases). The table also shows the equalized value of the lifetime net tax rate under each row-specific policy and column-specific assumption.

Restoring generational balance under reference assumptions requires permanently boosting all taxes by 2.0 percent or hiking federal income taxes by 5.3 percent. Permanently cutting all transfers requires an immediate cut of 4.0 percent. Raising all taxes equalizes the lifetime net tax rates at 26.4 percent—slightly higher than the 26.2 percent rate needed if all transfers were cut; higher taxes mainly affect working-age generations, whereas the lower transfers compel greater net tax contributions from older living generations as well. Alternatively, all government purchases would have to be trimmed by 4.1 percent, or federal purchases alone would have to be cut by 12.5 percent. Cutting purchases does not change the net tax rates of living generations; it only reduces those of future generations. Even greater fiscal

changes are required to restore generational balance under the alternative budgetary projections. Under the assumption of faster growth in federal purchases (column 2), for example, federal income taxes have to be raised by 29.9 percent.

The second panel of Table 3 shows that postponing such policy changes requires even larger changes later. Under reference projections, for example, a 5-year delay in trimming federal purchases increases the required percentage cut—from 12.5 percent to 15.5 percent. Moreover, waiting for 5 years before raising taxes or cutting transfers equalizes the lifetime net tax rates of 1998 newborn and future generations at a higher rate. That occurs because some living generations escape the higher net tax payments (through retirement or death), thus forcing larger lifetime net tax payments onto the remaining generations.

IV. Conclusion

Under the latest available long-term economic and demographic assumptions, U.S. fiscal policy remains generationally imbalanced, although less so than earlier. The reference scenario implies a lifetime net tax rate of 25.6 percent for 1998 newborns and 29.2 percent for future generations. The imbalance is greater under alternative budgetary projections for which the recent surge in revenues and decline in the growth of discretionary federal outlays do not persist. At some point, projected government purchases must fall or scheduled net tax rates must rise—if not for living generations, then for future ones.

Table 1: U.S. Generational Accounts (r = .06, g = .022) Present Values in Thousands of 1998 Dollars

Age in 1998	Net Tax Payment	
	Male	Female
0	122.1	61.1
10	169.4	82.0
20	238.2	109.4
30	268.1	111.4
40	236.9	77.8
50	152.9	10.5
60	10.8	-95.6
70	-92.4	-135.9
80	-83.6	-112.3
90	-61.5	-74.3
FG[a]	142.5	71.3
Percentage Difference[b]	14.2	

[a] FG refers to future generations—those born in 1999 and later.
[b] The percentage difference is calculated as GA(FG)/[GA(0)*(1 + g)], where GA(0) is the generational account of 1998 newborns and g = 0.022.
Source: Authors' calculations.

Table 2: Lifetime Net Tax Rates Under Alternative Federal Purchases and Income Tax Assumptions

Year of Birth	Reference Projection	Faster Growth in Federal Purchases[a]	Lower Income Tax/GDP Ratio[b]	Faster Purchases' Growth and Lower Income Tax/GDP Ratio	Maintain Off-Budget Surplus
1900	23.3	23.3	23.3	23.3	23.3
1910	26.5	26.5	26.5	26.5	26.5
1920	27.9	27.9	27.9	27.9	27.9
1930	29.2	29.2	29.2	29.2	29.2
1940	29.6	29.6	29.5	29.5	29.6
1950	29.9	29.9	29.5	29.5	29.9
1960	30.2	30.2	29.3	29.3	30.0
1970	29.7	29.7	28.2	28.2	29.2
1980	28.1	28.1	26.3	26.3	27.4
1990	26.4	26.4	24.6	24.6	25.7
1995	25.8	25.8	24.0	24.0	25.1
1998	25.6	25.6	23.8	23.8	24.9
FG[c]	29.2	46.0	35.9	52.7	32.3
Percentage Difference	14.2	79.9	50.9	121.6	29.9

[a] Federal purchases grow with population and productivity after 1998.
[b] Federal income tax/GDP ratio equals 10.3 percent.
[c] FG refers to future generations.
Source: Authors' calculations.

Table 3: Policies Beginning 1999 for Equalizing the Lifetime Net Tax Rates of Newborn and Future Generations

	Reference Projection	Faster Growth in Federal Purchases[a]	Lower Income Tax/GDP Ratio[b]	Faster Purchases' Growth and Lower Income Tax/GDP Ratio	Maintain Off-Budget Surplus
Policies Begin in 1999					
			Percentage Change		
Raise All Taxes	2.0	11.4	7.1	16.9	4.2
Raise Fed. Inc. Taxes	5.3	29.9	19.7	47.1	10.9
Cut All Transfers	4.0	22.3	13.2	31.5	8.1
Cut All Govt. Purchases	4.1	19.6	13.8	27.7	8.4
Cut Federal Purchases	12.5	57.2	41.6	83.8	24.3
			Equalized Lifetime Net Tax Rate		
Raise All Taxes	26.4	30.1	26.5	30.2	26.5
Raise Fed. Inc. Taxes	26.3	29.6	26.1	29.4	26.3
Cut All Transfers	26.2	28.8	25.7	28.3	26.0
Cut All Govt. Purchases	25.6	25.6	23.8	23.8	24.8
Cut Federal Purchases	25.6	25.6	23.8	23.8	24.8
Policies Begin in 2004					
			Percentage Change		
Raise All Taxes	2.4	13.7	8.5	20.4	5.1
Raise Fed. Inc. Taxes	6.4	35.8	23.6	56.4	13.1
Cut All Transfers	4.5	25.2	14.9	35.7	9.2
Cut All Govt. Purchases	5.0	23.1	16.7	32.7	10.1
Cut Federal Purchases	15.5	71.7	51.7	101.4	30.0
			Equalized Lifetime Net Tax Rate		
Raise All Taxes	26.5	31.0	27.0	31.4	26.8
Raise Fed. Inc. Taxes	26.4	30.4	26.6	30.6	26.6
Cut All Transfers	26.2	29.2	25.9	28.9	26.2
Cut All Govt. Purchases	25.6	25.6	23.8	23.8	24.8
Cut Federal Purchases	25.6	25.6	23.8	23.8	24.8

[a]Growth of federal purchases equals that of population plus productivity after 1998.
[b]Federal income taxes/GDP ratio equals 10.3 percent.
Source: Authors' calculations.

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Endnotes

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[1] See *Generational Accounting Around the World.* Ed. by Alan J. Auerbach, Laurence J. Kotlikoff, and Willie Leibfritz, NBER and University of Chicago Press, Chicago, 1999.

[2] A generation is defined as all individuals of a particular sex and born in a particular year. See Gokhale, Page, and Sturrock (1997) and CBO (1997b).

[3] See Gokhale, Page, and Sturrock (1997).

[4] CBO (1999). The reference path is a modified version of CBO's "maintain surpluses" scenario; one of several projections presented.

[5] Since the construction of the reference path, CBO has updated its 10-year economic and budget projections. A reference path consistent with the latest 10-year projections would be closer to generational balance than the one considered here.

[6] For a more detailed description, see Auerbach, Gokhale, and Kotlikoff (1991, 1994).

[7] The rates are ratios of population-weighted net taxes to population-weighted labor incomes.