Taxation of Social Security Benefits Under the New Income Tax Provisions: Distributional Estimates for 1994

*by David Pattison**

The 1993 Omnibus Budget Reconciliation Act raised the proportion of benefits includable in income for the Federal personal income tax. This article presents estimates of the income-distributional effects of the new provision in 1994, the first year for which it is effective. Under the pre-1993 law, up to 50 percent of benefits were included in taxable income for certain high-income beneficiaries. Under the new law, some of these beneficiaries are required to include an even higher proportion of benefits—up to 85 percent. Only 11 percent of beneficiary families, concentrated in the top three deciles by family income, include more of their benefits in taxable income under the new law than they would have under the old law. Another 8 percent include the same amount of benefits under either. The remaining beneficiary families, more than 80 percent, include no benefits in taxable income under either the old law or the new.

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This article presents estimates for 1994 of the effects of the change in Social Security benefit taxation introduced in the 1993 Omnibus Budget Reconciliation Act. The estimates here supplement those in Pattison and Harrington, "Proposals to Modify the Taxation of Social Security Benefits: Options and Distributional Effects," *Social Security Bulletin*, Summer 1993, which simulated effects for 1994 of various options for the taxation of benefits. Like the estimates in that article, the focus is on average effects by family income class rather than on aggregate revenue effects.[1] Because the old law taxed only the benefits of high-income beneficiaries, and because the new law confines itself to an even narrower group of high-income beneficiaries, the effects of the law change are confined to the upper deciles of family income.

The New Benefit Taxation Provision

The old law included up to 50 percent of benefits in taxable income for beneficiaries with incomes above certain thresholds. The new law adds a new tier of 85-percent taxation thresholds above the old thresholds. For taxpayers with incomes below the higher thresholds, there is no change from the old law. For taxpayers with incomes above the new thresholds, the new law includes a larger portion of benefits, reaching 85 percent of benefits for taxpayers with high enough incomes.

Both the old law and the new law first determine a "modified adjusted gross income" (AGI) equal to adjusted gross income (before including Social Security benefits) plus any tax-free interest income. A "provisional income" is then calculated, under both laws, equal to modified AGI plus 50 percent of Social Security benefits.

Under the old law, if provisional income exceeded the taxation threshold ($32,000 for couples, $25,000 for single persons), the portion of benefits included in taxable income was equal to half the excess of provisional income over the threshold, up to a maximum of 50 percent of benefits. This calculation had the effect of "phasing in" the taxable benefit at a 50-percent rate: for each extra dollar of provisional income above the threshold, another 50 cents of benefit was included in taxable income.

Under the new law, if provisional income is less than the new upper-tier taxation threshold ($44,000 for couples, $34,000 for single persons), the includable benefit will be the same as it would have been under the old law. If provisional income is greater than the upper-tier threshold, the new-law includable benefit will be the lesser of: (1) 85 percent of benefits, or (2) the sum of (a) what the includable benefit would have been under the old law, but not more than $6,000 for couples or $4,500 for single persons, and (b) 85 percent of the excess of provisional income over the upper-tier threshold. (See below.)

Part 2 of the above calculation has the effect of (a) calculating the old-law includable benefit as if provisional income were exactly equal to the upper-tier threshold, and then (b) adding 85 percent of the excess of actual provisional income over the upper-tier threshold. Because the upper-tier threshold for couples is $12,000 above the lower-tier threshold ($9,000 for singles), the old-law includable benefit for a provisional income equal to the upper-tier threshold is the smaller of $6,000 for couples ($4,500 for singles) or half of benefits.

Instead of the single 50-percent phase-in rate of the old law, the new law has two phase-in rates—a 50-percent rate and an 85-percent rate. For any portion of provisional income above the lower-tier threshold and below both the upper-tier threshold and the level at which the old-law includable benefit would have been fully phased in, the phase-in rate is 50 percent. For any provisional income above the upper-tier threshold, the phase-in rate is 85 percent. For beneficiaries with benefits smaller than the difference between the upper-tier and the lower-tier thresholds ($12,000 for couples, $9,000 for singles), the old-law includable benefit would have been fully phased-in before the upper-tier is reached, and there will be a region under the new law between the top of the 50-percent phase-in region (lower-tier threshold plus benefits) and the bottom of the 85-percent phase-in region (the upper-tier threshold) in which the includable benefit remains at 50 percent.[2]

As an example of the includable benefit calculation, consider a couple with Social Security benefits of $14,000 and no tax-free interest income. Modified AGI for the couple will be equal to the couple's AGI before including Social Security benefits, and provisional income will equal modified AGI plus $7,000 (half of the benefits). If provisional income is less than $32,000, the couple would have included no benefits in taxable income under the old law and will include none under the new law. For provisional incomes between $32,000 and $46,000, the includable portion of benefits under the old law would have risen from none (at $32,000) to $7,000 (at $46,000), rising 50 cents for each dollar of provisional income in excess of $32,000. For provisional incomes above $46,000, the full 50 percent of benefits, $7,000, would have been included under the old law.

Under the new law, the couple's includable benefit will be the same as the old-law includable benefit if provisional income is below the couple's upper-tier taxation threshold of $44,000. At a provisional income exactly equal to the upper-tier threshold of $44,000, the includable benefit under both old and new law will be $6,000 (equal to half the difference between the 85-percent taxation threshold and the 50-percent taxation threshold). For provisional incomes above $44,000, the new-law includable benefit will be equal to $6,000 plus 85 percent of the excess of provisional income over $44,000, up to a maximum of $11,900 (85 percent of the couple's assumed benefit of $14,000). At a provisional income of $46,000, where the old-law includable benefit would have reached its maximum amount of $7,000, the new-law includable benefit will be $6,000 plus 85 percent of $2,000, or $7,700. The couple's maximum new-law includable benefit of $11,900 will be reached for provisional incomes above $50,941.[3] The provisional income at which the maximum includable benefit is reached will vary with the amount of benefits.

Every beneficiary who would have been free from taxes on benefits under the old law will remain free from taxes on benefits under the new law. Beneficiaries whose provisional incomes are above the lower-tier taxation threshold but below the upper-tier taxation thresh-

Let *mAGI* denote AGI, not including benefits, plus tax-free interest; *SS* Social Security benefits; and T_{50} and T_{85} the lower- and upper-tier taxation thresholds. Then provisional income (*PI*) will be

$$PI = mAGI + .50\,SS.$$

The old-law includable benefit (IB_{50}) will be

$$IB_{50} = min\ \{.50\,SS,\ .50\ max\ [0, PI - T_{50}]\ \}.$$

The new-law includable benefit (IB_{85}) will be

$$IB_{85} = min\ \{.85\,SS,\ \ min(IB_{50}\,,\ .50[T_{85} - T_{50}]) + .85\ (max[0, PI - T_{85}])\ \}.$$

The formulas are simpler if provisional income is divided into ranges:

I. If $PI \leq T_{50}$, then $IB_{50} = IB_{85} = 0.$

II. If $T_{50} < PI \leq T_{85}$, then $IB_{50} = IB_{85} = min\ \{.50\,SS,\ .50\ [PI-T_{50}]\ \}.$

III. If $PI > T_{85}$, then

$$IB_{50} = min\ \{.50\,SS,\ .50\ [PI-T_{50}]\ \},\ \text{and}$$

$$IB_{85} = min\ \{.85\,SS,\ min(IB_{50}\,,\ .50\ [T_{85}-T_{50}]\ ) + .85\ [PI-T_{85}]\ \};$$

or, written in a more parallel form, and using the fact that, in this income range, IB_{50} equals .50 *SS* if benefits are less than the difference between thresholds,

$$IB_{50} = min\ \{\ .50\,SS,\qquad\qquad .50\ [T_{85}-T_{50}]\ \ +\ .50\ [PI-T_{85}]\ \},$$

$$IB_{85} = min\ \{\ .85\,SS,\ min\ (.50\,SS,\ .50\ [T_{85}-T_{50}]\ )\ +\ .85\ [PI-T_{85}]\ \}.$$

old will include the same amount of benefits under the new law as they would have under the old law. The remainder of beneficiaries, those who have provisional incomes above the upper-tier taxation threshold, will include more benefits under the new law. At the extreme, some taxpayers who would have included 50 percent of their benefits in taxable income will now include 85 percent of their benefits in taxable income, a 70-percent increase in taxable benefits.

The 1993 Omnibus Budget Reconciliation Act that legislated the increase in benefit taxation also legislated an increase in the personal income tax rates at high incomes.[4] In the simulations in this article, the new tax rates are used in all cases: the "effect of raising benefit taxation to 85 percent" calculates the difference between income taxes under the new two-tiered formula and income taxes under the old single-tiered formula, both of them calculated under the new income tax rates. (In contrast, the earlier article used the old income tax rates throughout.)

Simulation Results

The simulation population is shown in table 1. For the tabulations, a set of income categories has been created that divides the overall population of families into 10 decile groups of family income. These deciles are used for all tabulations, including those limited to beneficiary families. Family income, in these tabulations, is an expanded family income concept, equal to cash income (as defined by the Bureau of the Census) plus imputed realized capital gains.[5]

Income tax as a percent of family income (column 4) rises with income, indicating the progressivity of the income tax structure.[6] (The income tax in this table includes the new level of taxation on benefits.) The 26 percent of families containing persons receiving Social Security benefits (column 3) are not evenly distributed by income, but are disproportionately represented in the second through fifth deciles of family income. Except in the top deciles, beneficiary families tend to have much lower income taxes as a percent of family income than do non-beneficiary families in the same decile (comparing columns 8 and 4), due in part to the more favorable tax treatment of Social Security benefits. (Columns 4 and 8 are graphed in chart 1.)

Almost 10 percent of beneficiary families have no income other than their Social Security benefits (tabulation not shown). Half of these are in the second decile, and almost all are in the bottom four deciles. None of them will pay income taxes under the new law.

The effect of taxation of benefits under the new law is shown in table 2. In this table, the "tax on benefits" refers to the difference between income tax under the new law and the income tax if there were no taxation of benefits. According to column 5, 18 percent of families with Social Security benefits pay taxes on their benefits. No families in the bottom four deciles, and very few in the fifth decile, pay a tax on benefits. Above the fifth decile—in other words, above the median family income—the proportion of families paying taxes on their benefits increases with income up to the highest incomes (column 5). In the top decile almost 80 percent of beneficiary families pay taxes on their benefits. A tabulation not shown here verifies that if beneficiaries living with other family members are excluded from the tabulation, almost all remaining beneficiary families in the top decile will be taxed on their benefits.

According to column 6, the average amount of income tax attributable to benefit taxation is $296, averaged over all beneficiary families, including those not paying a tax on benefits. Taken only over those families paying a tax on benefits (column 10), the average is $1,625.

Table 1.—Simulation population under new income tax provisions, 1994

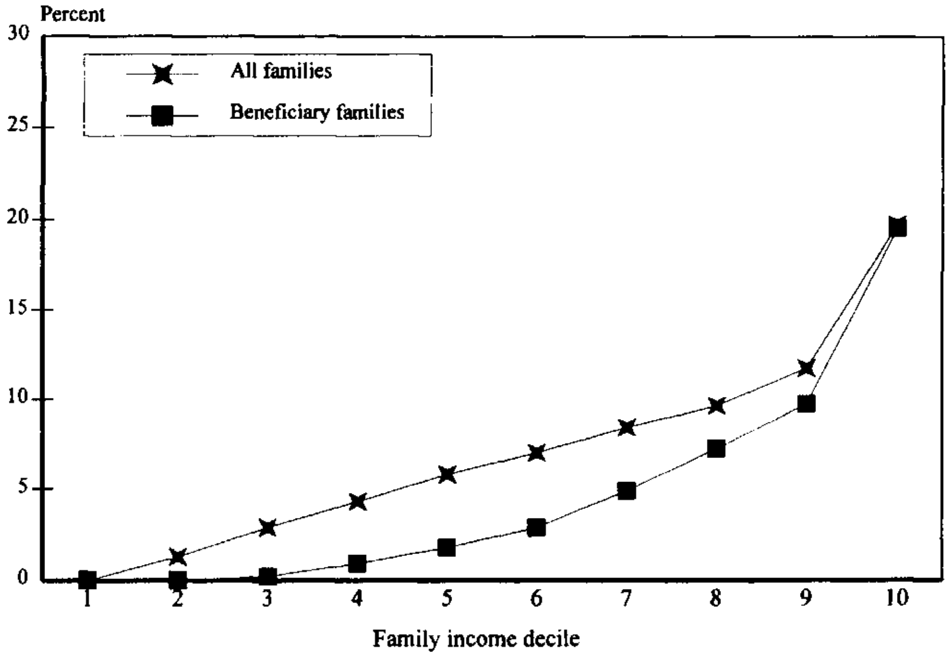
Decile by family income	All families				All families with benefits			
	Number (in thousands) (1)	Average income (2)	Percent with benefits (3)	Income tax as percent of family income (4)	Number (in thousands) (5)	Average income (6)	Average benefits (7)	Income tax as percent of family income (8)
Total	107,402	$40,133	26.0	12.1	27,924	$32,872	$11,201	8.4
1: $1-$6,974	9,471	4,141	22.2	.0	2,102	5,174	4,369	.0
2: $6,975-$11,643	10,744	9,276	41.1	1.3	4,412	9,299	7,774	.0
3: $11,644-$16,686	10,743	14,188	35.9	2.9	3,855	14,110	10,172	0.2
4: $16,687-$22,566	10,703	19,542	34.7	4.3	3,716	19,457	11,622	0.9
5: $22,567-$28,756	10,773	25,598	28.7	5.8	3,091	25,502	12,950	1.8
6: $28,757-$36,246	10,742	32,393	25.9	7.0	2,780	32,319	13,665	2.9
7: $36,247-$45,136	10,736	40,528	23.0	8.4	2,468	40,473	13,926	4.9
8: $45,137-$57,323	10,744	50,911	19.4	9.6	2,083	50,693	13,349	7.2
9: $57,324-$78,033	10,738	66,249	16.3	11.7	1,746	65,914	13,389	9.7
10: $78,034 or more	10,742	139,062	15.5	19.7	1,669	149,822	13,965	19.5

Note: Family income is expanded family income (see p. 46). Deciles are calculated over whole population, including non-aged, non-beneficiary families. Families with zero or negative income are included in total but not in lowest decile.

Source: STATS simulation on March 1993 Current Population Survey projected to 1994.

Columns 3 and 8 in table 2 give the tax on benefits as a percentage of family income. Comparing this percentage as income rises from decile to decile gives an indication of the degree of progressivity of the tax on benefits. The tax as a percent of income rises or does not fall over all the intervals except between the ninth and tenth deciles; the tax on the tenth decile is below that on the ninth decile but above that on the eighth decile. Hence, the tax on benefits can be considered as progressive from the middle deciles almost to the top. This pattern is true whether looking at all families in the population (column 3) or only at beneficiary families (column 8).

Chart 1. —Income tax as a percent of family income, new law



Source: table 1, columns 4 and 8.

The progressivity is also reflected in the total taxes on benefits paid by each decile (columns 1 and 2 and chart 2). The top three deciles pay 93 percent of the tax, while the seventh decile pays 6 percent and the sixth decile pays the remaining 1 percent. The fifth decile pays only a trace.[7]

Table 2 looked at the total tax on benefits under the new law. Table 3 considers the change in tax from what would have been paid in 1994 under the old-law benefit taxation provision (but using the new marginal tax rates) to what will be paid under the new law. There are no newly taxed families (column 6). The 82 percent of beneficiary families who paid no taxes on benefits under the old law continue to pay no

Table 2.—Effect of new-law taxation of benefits, 1994

Decile by family income	All families			All families with benefits					Families with tax on benefits		
	Aggregate tax on benefits										
	Amount (in millions) (1)	Percent of column total (2)	Tax on benefits as a percent of income (3)	Number of families (in thousands) (4)	Percent of families taxed on benefits (5)	Average tax on benefits (6)	Tax on benefits as a percent of benefit (7)	Tax on benefits as a percent of income (8)	Number of families (in thousands) (9)	Average tax on benefits (10)	Tax on benefits as a percent of benefit (11)
Total	$8,263	100.0	0.19	27,924	18.2	$296	2.6	0.90	5,086	$1,625	12.4
1: $1-$6,974	0	.0	.00	2,102	.0	0	.0	.00	...	...	...
2: $6,975-$11,643	0	.0	.00	4,412	.0	0	.0	.00	...	...	...
3: $11,644-$16,686	0	.0	.00	3,855	.0	0	.0	.00	...	...	...
4: $16,687-$22,566	0	.0	.00	3,716	.0	0	.0	.00	...	...	...
5: $22,567-$28,756	1	.0	.00	3,091	.7	0	.0	.00	23	43	1.2
6: $28,757-$36,246	73	.9	.02	2,780	13.1	26	.2	.08	366	199	2.3
7: $36,247-$45,136	474	5.7	.11	2,468	40.0	192	1.4	.47	986	480	4.4
8: $45,137-$57,323	1,186	14.3	.22	2,083	61.5	569	4.3	1.12	1,281	926	6.8
9: $57,324-$78,033	2,285	27.7	.32	1,746	65.1	1,308	9.8	1.99	1,136	2,011	14.0
10: $78,034 or more	4,245	51.4	.28	1,669	77.5	2,543	18.2	1.70	1,294	3,280	22.5

Note: Family income is expanded family income (see p. 46). Deciles are calculated over whole population, including non-aged, non-beneficiary families. Families with zero or negative income are included in total but not in lowest decile.

Source: STATS simulation on March 1993 Current Population Survey projected to 1994.

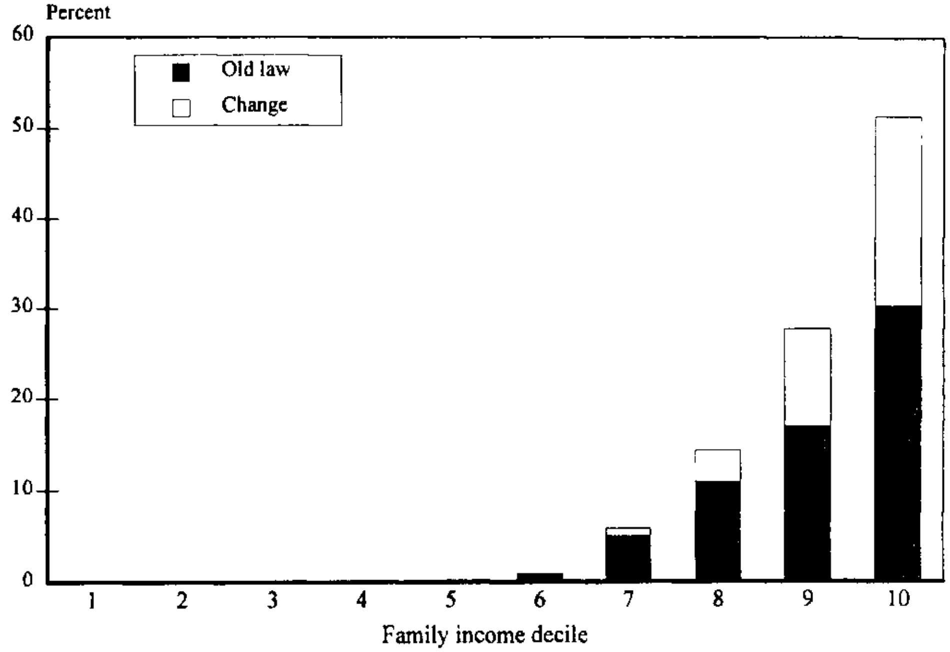
taxes on benefits under the new law (column 4). About 8 percent of all beneficiary families (column 5) include the same amount of benefits under the new law as they would have under the old. The remaining 11 percent of beneficiary families (column 7) have an increase in taxes under the new law. As income rises from the 6th through the 10th deciles, the proportion of taxed beneficiaries with a tax increase grows (chart 3). The average increase in income tax, averaged over all beneficiary families, including those who pay no tax on benefits, is $107 (table 3, column 8), equal to 1 percent of benefits (column 9).

About 36 percent of the total tax on benefits is attributable to the law change (comparing columns 1 in tables 2 and 3). (See also chart 2, which plots the new-law revenues by decile as the sum of the old-law revenues and the change in revenues attributable to the new law.) The change in the tax law, in other words, increased the tax on benefits by about 57 percent. The tax increase is heavily concentrated in the upper deciles. The top three deciles pay almost 98 percent of the tax increase (table 3, column 2), the seventh decile pays the remaining 2 percent, the sixth decile, showing zero in the table, pays only a trace (see column 4 in table 4). The bottom five deciles pay nothing. The new-law change, because of its two-tiered structure, has increased the portion of the tax on benefits that comes from each of the top two deciles.

Table 4 considers the effects of the new law on all beneficiary families subject to taxation of benefits. The column 2 average tax increase of $588 includes those families whose tax on benefits did not increase as a result of the law change. About 58 percent of families with a tax on benefits have a tax increase; the average tax increase among these families is $1,009 (column 5).

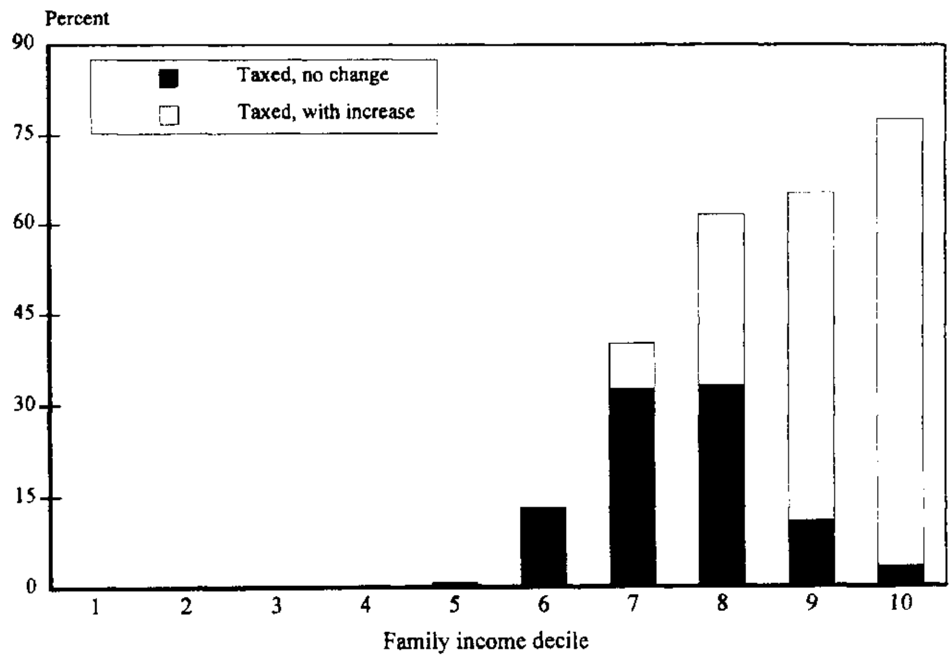
In summary, 81.8 percent of beneficiary families have no benefits in their taxable income under either the old law or the new law; another 7.6 percent of beneficiary families include the same amount under the new law as they would have under the old law; and the other 10.6 percent of beneficiaries, heavily concentrated in the top three deciles by family income, include more benefits in taxable income under the new law than they would have under the old law.

Chart 2. —Source of new-law revenues, as a percent of total new-law benefit taxation revenues, by income decile



Source: table 2, column 1 and table 3, column 1.

Chart 3. —Percent of beneficiary families taxed on benefits, by family income decile



Source: table 3, columns 5 and 7.

Table 3.—Effect of increased tax on benefits, 1994

Decile by family income	All families: Aggregate increase in income tax: Amount (in millions) (1)	Percent of column total (2)	Tax on benefits as a percent of income (3)	All families with benefits: Percent of families: No tax (4)	Taxed on benefits: Already taxed, no increase (5)	Newly taxed (6)	Increase in tax (7)	Average increase in income tax (8)	Increase in income tax as a percent of benefit (9)	Increase in income tax as percent of income (10)
Total	$2,993	100.0	0.07	81.8	7.6	0.0	10.6	$107	1.0	0.33
1: $1-$6,974	0	.0	.00	100.0	.0	.0	.0	0	.0	.00
2: $6,975-$11,643	0	.0	.00	100.0	.0	.0	.0	0	.0	.00
3: $11,644-$16,686	0	.0	.00	100.0	.0	.0	.0	0	.0	.00
4: $16,687-$22,566	0	.0	.00	100.0	.0	.0	.0	0	.0	.00
5: $22,567-$28,756	0	.0	.00	99.3	.7	.0	.0	0	.0	.00
6: $28,757-$36,246	0	.0	.00	86.9	13.1	.0	.0	0	.0	.00
7: $36,247-$45,136	72	2.4	.02	60.0	32.5	.0	7.5	29	.2	.07
8: $45,137-$57,323	287	9.6	.05	38.5	33.1	.0	28.4	138	1.0	.27
9: $57,324-$78,033	887	29.6	.12	34.9	10.7	.0	54.4	508	3.8	.77
10: $78,034 or more	1,748	58.4	.12	22.5	3.2	.0	74.3	1,047	7.5	.70

Note: Family income is expanded family income (see p. 46). Deciles are calculated over whole population, including non-aged, non-beneficiary families. Families with zero or negative income are included in total but not in lowest decile.
Source: STATS simulation on March 1993 Current Population Survey projected to 1994.

Table 4.—Effect of increased tax on families with tax on benefits, 1994

Decile by family income	Number of families (in thousands) (1)	Average increase in income tax (2)	Increase in income tax as percent of benefit (3)	Families with increase in tax: Number of families (in thousands) (4)	Average increase in income tax (5)	Increase in income tax as percent of benefit (6)
Total	5,086	$588	4.5	2,967	$1,009	7.6
5: $22,567-$28,756	23	0	.0	...	...	...
6: $28,757-$36,246	366	0	.0	1	151	9.8
7: $36,247-$45,136	986	73	.7	184	389	4.3
8: $45,137-$57,323	1,281	224	1.6	591	484	4.6
9: $57,324-$78,033	1,136	780	5.4	950	933	6.7
10: $78,034 or more	1,294	1,350	9.3	1,240	1,409	9.6

Note: Family income is expanded family income (see p. 46). Deciles are calculated over whole population, including non-aged, non-beneficiary families. Families with zero or negative income are included in total but not in lowest decile.
Source: STATS simulation on March 1993 Current Population Survey projected to 1994.

Notes

[1] The simulation method in this note is identical with that of the earlier article, except that the base file is the March 1993 Current Population Survey, rather than the March 1992 Current Population Survey. In both cases, the base file was projected forward to 1994, using methods described in the article and using the intermediate assumptions in the *1993 Annual Report* of the Board of Trustees of the Social Security (Old-Age and Survivors Insurance and Disability Insurance) Trust Funds.

[2] The two-tiered provision enacted by Congress differs from the 85-percent proposal initially put forth by the Clinton administration, which also featured an 85-percent phase-in rate and an 85-percent of benefits maximum, but which used the old-law thresholds. That proposal was simulated in the earlier article. See Pattison and Harrington (1993).

[3] Calculated as follows: the difference between $11,900 and $6,000 is $5,900; $5,900 divided by 0.85 is $6,941; $6,941 plus $44,000 is $50,941.

[4] For joint filers with taxable incomes above $140,000 and below $250,000, the marginal tax rate was raised to 36 percent (from 31 percent). For taxable incomes above $250,000, the marginal tax rate was raised still further, to 39.6 percent.

[5] "Families" in this article includes both Census families and Census unrelated individuals. "Beneficiary families" includes all families with at least one member receiving Social Security benefits. The family income which is used to classify the family into deciles includes income of any nonbeneficiary members of the family. In many upper-decile beneficiary families the beneficiaries themselves have low incomes, but are parents or in-laws of high-earning family members.

[6] Income tax as a percent of family income is calculated using before-tax family income. In the earlier article it was calculated using disposable family income. The measure of progressivity used in this article is Musgrave and Thin's "average income progression"; in the earlier article the progressivity measure used was Musgrave and Thin's "residual income progression." See Musgrave and Thin (1948).

[7] The aggregate revenue figures are presented only to give an indication of the magnitudes involved. These revenue figures should be considered underestimates of the true figures. Although an attempt was made to correct for underreporting of income in the survey file from which the estimates were derived, the focus was on correcting the average dollar amounts per family, not on correcting for undercoverage of the number of families in the taxpaying population.

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