# The Taxation of Social Security Benefits as an Approach to Means Testing

**Sarena Goodman and Jeffrey Liebman**

**September, 2008**

## Abstract

Many Social Security reform proposals suggest cutting benefits in ways that concentrate the benefit cuts on those most able to bear them. The most common approach adjusts the Social Security benefit formula to reduce replacement rates by a greater amount for those with high levels of lifetime earnings. An alternative approach is to means test Social Security benefits – targeting benefit reductions on those with substantial non-Social Security financial resources. Since 1984, a limited amount of means testing has been accomplished by subjecting a portion of Social Security benefits to the income tax. This paper considers the advantages and disadvantages of means testing as an alternative to progressive benefit formula adjustments and analyzes how close the current taxation of Social Security benefits in the U.S. comes to achieving the potential benefits of means testing. The paper finds that retirement income sources other than Social Security benefits have substantial predictive power for consumption levels in retirement, implying that efforts to target Social Security benefit reductions on those most able to bear them may be more effective if done using information on both Social Security and non-Social Security income sources.

Goodman: Department of Economics, Columbia University. Liebman: Harvard Kennedy School and NBER. We thank Eric Toder for helpful comments on an earlier draft. This research was supported by the U.S. Social Security Administration through grant #10-P-98363-1-05 to the National Bureau of Economic Research as part of the SSA Retirement Research Consortium. The findings and conclusions expressed are solely those of the authors and do not represent the views of SSA, any agency of the Federal Government, or the NBER.

Many Social Security reform proposals suggest cutting benefits in ways that concentrate the benefit cuts on those most able to bear them. The most common approach adjusts the Social Security benefit formula to reduce replacement rates by a greater amount for those with high levels of lifetime earnings. An alternative approach is to means test Social Security benefits – targeting benefit reductions on those with substantial non-Social Security financial resources. Since 1984, a limited amount of means testing has been accomplished by subjecting a portion of Social Security benefits to the income tax.

This paper considers the advantages and disadvantages of means testing as an alternative to progressive benefit formula adjustments and analyzes how close the current taxation of Social Security benefits in the U.S. comes to achieving the potential benefits of means testing. The paper begins in Section 1, by discussing the tradeoffs inherent in means testing. Section 2 describes the current rules governing the taxation of Social Security benefits. Section 3 presents data on the revenue, distributional, and efficiency effects of the current approach. Section 4 analyzes the extent to which Social Security benefit levels are a sufficient statistic for ability-to-pay during retirement years and the extent to which information on other income can help in targeting benefit cuts on those most able to bear them. Section 5 discusses the implications of the findings for Social Security policy and considers different approaches to simplifying the taxation of Social Security benefits.

## 1. The Advantages and Disadvantages of Means Testing

Means testing is generally defined as having eligibility for a government benefit or the level of the benefit depend on income or assets at the time the benefit is paid. Social Security benefits are a function of a worker's average lifetime earnings. But, benefit levels do not depend

on income at the time of benefit receipt.[1] Thus, the U.S. Social Security program is usually categorized as a social insurance program, rather than as a means-tested transfer program.

In the simplest life-cycle permanent income models, knowing a worker's lifetime earnings is a sufficient statistic for the worker's economic well-being.[2] There would be no gain, therefore, to using information on non Social-Security retirement income as a basis for cutting Social Security benefits. One could simply adjust the Social Security benefit formula to achieve benefit cuts with whatever distributional profile was desired. Indeed, in this simple model, it would be a mistake to means-test Social Security benefits for the same reasons that simple dynamic models tend to conclude that consumption taxation is preferable to income taxation. First, from an equity perspective, if two individuals have the same lifetime earnings and therefore are on the same lifetime budget constraint but have different preferences over the timing of their consumption over their lifetime, it is unfair to tax (or reduce the Social Security benefits of) the more patient person more heavily. Second, from an efficiency perspective, imposing a means-test on Social Security benefits will discourage people from activities (primarily saving) that will produce income in retirement years. Absent a strong equity argument for doing so, creating what is effectively a tax wedge between the price of consumption in different periods is undesirable.

The real world differs from the stylized world of the simplest life-cycle models in several ways that could make means-testing desirable.[3] First, some of the variation in retirement income levels among people with identical lifetime earnings comes from luck in financial markets.

---

[1] For some workers who claim benefits before the full benefit age, the Social Security earnings test shifts benefit payment to a later date. Since benefits are deferred rather than reduced, this is not really a means test in the classic sense. Liebman and Luttmer (2008) show evidence from a random sample of 55 to 65 year olds that the majority of

[2] We take the simplest versions to be perfect foresight models without uncertainty, borrowing constraints, or bequests.

[3] The arguments here are nearly identical to those in recent "new dynamic public finance" papers that make the case for an income tax being optimal. See Smyth (2006) and Conesa, Kitao, and Krueger (2007).

Reducing the Social Security benefits of the fortunate relative to the unfortunate could be a socially optimal form of redistribution. Second, lifetime earnings as measured by the Social Security average indexed monthly earnings (AIME) calculation are not in fact a sufficient statistic for a person's lifetime budget constraint. Workers with the same AIME may have different employer-provided pensions or may have received different inheritances. Third, variations in retirement income levels for workers with identical AIME's can occur if some workers are short-sighted and fail to save or if some workers are unsophisticated and make bad investments. It may be desirable, therefore, to provide higher levels of Social Security benefits for those who prove incapable of providing for themselves in retirement.[4] Fourth, adverse consumption shocks, such as medical expenses, can leave people with differing amounts of resources in retirement. Means-testing of benefits is a way of providing partial insurance against these sorts of shocks.

It is worth emphasizing that while means testing has the potential to improve welfare in all of these circumstances, it also has the potential to distort behavior. Reducing Social Security benefits for those who experience financial market success may discourage people from optimizing portfolio decisions. Reducing benefits for those receiving inheritances may alter bequest behavior. Reducing benefits for those who reach retirement with a significant amount of capital income may discourage saving. Thus, the decision whether or not to means test (and how much of it to do) will, in general, be an empirical question that will depend on the extent of the equity gains and the efficiency losses. It is also worth noting that the disincentive effects of means-testing Social Security benefits are unlikely to be anywhere near as large as the disincentive effects of many of the traditional means-tested cash-transfer programs targeted at

[4] Feldstein (1987) analyzes the tradeoffs between universal and means-tested social security retirement programs when some members of the population are myopic and others are forwarding looking.

poor single parent households. Effective marginal tax rates on earnings often approach 100 percent in traditional cash-transfer programs. In contrast, a proposal to reduce Social Security benefits by one-third for couples with income above $50,000 and to implement the benefit reduction gradually between $50,000 and $100,000 of income might result in say $7000 of benefits being taken away (.333 of $21,000) over a $50,000 income range. This would add 14 percentage points to marginal tax rates. While not a trivial increase, it would not produce anywhere near the kinds of marginal tax rates that are seen in traditional means-tested welfare programs.

Another argument is often made against means testing Social Security: that doing so would reduce political support for the program, threaten social solidarity, and undermine support for social insurance more generally. There appear to be two distinct aspects of this argument. First, if the implicit rate of return on OASDI payroll taxes that comes in the form of Social Security benefits becomes very low for a segment of the population, broad-based political support of the program may erode. This is a general argument against progressivity in Social Security, one that applies not only to means testing, but also to progressive benefit cuts and progressivity in the financing of the program. Second, means-testing may cause people to equate Social Security with unpopular welfare programs and thereby undermine political support for the program. This second political channel is all about appearances. Tinkering with the benefit formula it is alleged, does less to make Social Security look like a welfare program than explicit means testing would. Where the taxation of benefits fits in to this story is not clear. Traditional welfare means tests do not operate through the tax code, so perhaps the taxation of benefits is not a threat to political support of the program.[5] But, since this framework is all about appearances,

[5] Liebman (1998) discusses the EITC which is an exception to the rule in that it is a large means-tested transfer program targeted at low-income families and administered through the tax code.

analysts writing a paper illuminating the connection between means testing and the taxation of benefits might be putting the program at risk. Overall, these political arguments against means testing have the potential to be dispositive, but only if there are strong reasons to believe that the political process determining policy outcomes is biased toward underprovision of social insurance.

If the decision is made to means-test Social Security benefits, there remains the administrative question of how to implement the means testing. Traditional welfare programs employ case workers to collect data on income from beneficiaries and, for that reason, often have administrative costs that are 10 percent or more of benefits paid. Even if a more streamlined approach could be designed for Social Security that restricted administrative costs to 5 percent of benefits paid, it seems inconceivable that we would want to set up a new $25 billion a year system to collect data from Social Security beneficiaries on their other income. This leaves the tax system as the logical place to accomplish means testing of Social Security benefits. While using the tax system may somewhat limit the target efficiency of the means-testing effort – especially in cases where the tax filing unit does not accurately reflect total household resources – the administrative advantages of the tax system for this purpose appear to be overwhelming.[6]

## 2. Background on the Taxation of Social Security Benefits

Since 1984, some Social Security recipients have had a portion of their Social Security benefits included in adjusted gross income and subject to the income tax. Because the amount of income tax collected on a taxpayer's Social Security benefits depends in part on the beneficiary's non-Social Security income, this provision is effectively a type of means testing that reduces

[6] See Alstott (1995) for a discussion of the difficulties of measuring need using tax-filing units.

Social Security benefits for people by different amounts depending on the level of their other income.

The taxation of Social Security benefits was introduced as a revenue-raising measure in the Social Security solvency legislation passed in 1983. The 1979 Advisory Council and the 1981-1982 Greenspan Commission had argued that the tax treatment of Social Security benefits should match that of private employment-based pensions. The tax rules for private pensions cause workers to be taxed on their pension benefits net of any after-income-tax contributions they made during their careers. When the after-income-tax contributions are netted out, it is only the nominal value of the contributions that is netted out. No adjustment is made for inflation and no real rate of return is imputed on the contributions -- contributions that on average were made many years in advance of the receipt of the pension benefits. Thus, in most cases, the netting out of prior contributions results in a very small tax savings relative to taxing the full value of the pension.

Under the assumption that the employer share of the payroll tax lowers the worker's earnings by the amount of the tax, a worker's total pre-tax earnings (or marginal revenue product) should be seen as the total of the worker's gross earnings on his or her paycheck plus the employer portion of the payroll tax. From this perspective, the employer share of the Social Security payroll tax is made on a pre-income-tax basis (since no income tax is charged on the employer payroll tax payments), and the employee share is made on a post-income-tax basis (since the paycheck earnings are subject to both the income tax and the payroll tax). Thus, to be consistent with tax treatment of employer pensions, it was argued that the taxation of Social Security benefits should tax the total value of Social Security benefits net of the employee share of the payroll tax (where just as in the case of pensions, the employee share is calculated by

adding up the nominal payroll tax payment with no adjustment for inflation or the real interest rate). Social Security actuaries performed calculations for hypothetical workers and found that for most beneficiaries this approach would result in over 90 percent of benefits being taxed, with the minimum level of taxation at 85 percent. To avoid "overtaxing" anyone, the advisory committees recommended setting the share of Social Security benefits subject to taxation at 85 percent.

In today's pension environment, it is not at all obvious that a desire to "tax Social Security like private pensions" would lead to a target of 85 percent or more for the share of Social Security benefits to be taxed. Employees participating in defined contribution plans typically have all of their contributions made on a pre-income-tax basis and then fully taxed upon withdrawal. This 100 percent income taxation at withdrawal plus zero income tax on income at the time of contribution would translate to a 50 percent target for the share of Social Security benefits that should be taxed. To see this, consider the formulas for the amount of tax collected from a traditional IRA, where contributions are made on a pre-income-tax basis and withdrawals are fully taxed, and from a Roth IRA, where contributions are made post-income-tax and withdrawals are not subject to any further taxation (in both cases the inside build up of returns occurs tax free).

Traditional IRA: $tax = contribution \times (1+r)^n \times (1-mtr\_retirement)$

Roth IRA: $tax = (1-mtr\_working) \times contribution \times (1+r)^n$

In these expressions, r is the nominal rate of return, n is the number of years between contribution and withdrawal, and mtr is the worker's marginal tax rate. Under the assumption

that the worker is in the same marginal tax rate bracket during his or her working years and during retirement, the two approaches yield identical amounts of taxes. Workers are taxed a single time on the full amount of their contributions, either upfront before the contributions have accumulated or on the back end after they have accumulated. From this perspective, the employer share of the Social Security payroll tax is like a traditional IRA and the employee share is like a Roth IRA. Thus, "taxing Social Security like private pensions" could be seen as suggesting that 50 percent of Social Security benefits should be taxable – the half that resulted from the exempt-from-the-income-tax employer payroll tax contributions.

While rhetoric about taxing Social Security like private pensions may be useful to those who want to raise additional revenue to meet solvency objectives, it is far from clear that there are strong policy rationales for equivalent tax treatment of pensions and Social Security. Neutrality of this sort is important in the tax code when lack of neutrality distorts behavior, but it is not generally the case that a firm, for example, faces a tradeoff between paying payroll tax and providing additional pension benefits. Instead, the share of Social Security benefits subject to the income tax should be determined by considerations about the optimal extent of means testing for Social Security.

While the advisory committee arguments convinced legislators to begin taxing Social Security benefits in 1984 and to dedicate this revenue to the OASDI Trust Funds, Congress decided to go only partway toward the recommendations that 85 percent of benefits be taxed. First, Congress decided to limit the share taxed to 50 percent. Second, Congress decided, for distributional reasons, to phase-in the taxable share of Social Security benefits gradually. Beneficiaries were to be taxed on their Social Security benefits only to the extent a married

couple's provisional income exceeded $32,000 ($25,000 for a single person).[7] This income threshold was not indexed for inflation or real wage growth, implying that the fraction of Social Security benefits subject to the income tax would increase over time.

OBRA 93 increased the maximum share of Social Security benefits that could be subject to tax to 85 percent, with the increase applying only to couples with provisional income above $44,000 and single taxpayers with provisional income above $34,000. Again, these thresholds were not indexed for inflation. The incremental revenue from the 1993 policy change was allocated to Medicare not Social Security.

The result of these two pieces of legislation is a quite complicated formula for the amount of Social Security benefits that must be included in adjusted gross income (AGI). Determining the amount of Social Security benefits subject to tax involves taking the minimum of three different tax schedules. For a married couple, the three schedules are:

1. 0.85*SSB
2. SSB/2+ 0.85 * max (0, -44000 + SSB/2 +Y)
3. 0.5*min(12000, max(0,-32000+SSB/2+Y))+ .85*max(0,-44000+SSB/2+Y)

In these formulas, SSB is gross Social Security benefits and Y is AGI adjusted to exclude Social Security benefits and to include tax-exempt interest income.

The way to understand these formulas is, first, that the taxable share is zero below $32,000 of provisional income (first term of schedule 3). Second, the taxable amount rises for couples with provisional income between $32,000 and $44,000 (first term of schedule 3), but it cannot exceed 50 percent of Social Security benefits (first term of schedule 2). Then, as

[7] Provisional income is adjusted gross income modified to include tax-exempt interest income and one-half of Social Security benefits.

provisional income rises above $44,000, the tax rises further (second terms of equations 2 and 3), but cannot result in the total share taxed exceeding 85 percent (equation 1).

This calculation is illustrated in the two panels of Figure 1. The top panel illustrates each of the three schedules, showing how taxable Social Security benefits rise with total Social Security benefits, holding other income constant at three different levels. The black line applies to all three levels of other income and illustrates the first schedule which is simply 85 percent of total Social Security benefits (and therefore does not vary with other income). The other two schedules generate different lines depending on the level of non-Social Security income.

Consider the two green lines that illustrate schedules two and three for a taxpayer with $36,750 of other income. The dashed line represents schedule two and is 50 percent of the first $14,500 of Social Security benefits and then 85 percent of benefits above $14,500. The dash-dotted green line represents $4750 plus one quarter of Social Security benefits up to $14,500 and 42.5 percent of benefits above $14,500. The actual amount of Social Security benefit included in AGI is the lower envelope of these three schedules, illustrated in the bottom panel with the solid green line.

Figure 2 shows the analogous analysis as other income increases with Social Security benefits held constant. For each level of Social Security benefits, there is a horizontal line at 85 percent of Social Security benefits representing schedule 1 – which does not depend on other income. Then there is a line based on schedule 2 that starts at 50 percent of Social Security benefits, remains constant until the sum of other income and half of Social Security benefits exceeds $44,000, and then rises at 85 cents per dollar of other income. Finally, there is a line based on schedule 3 that is initially at zero, then rises at 50 cents per dollar of other income for a range, and then increases at 85 cents per dollar in its top range.

The bottom panel of figure 2 shows that for most levels of Social Security benefits, a taxpayer starts out with no benefits being included in AGI. Then the taxpayer reaches a range based on schedule 3 where taxable benefits rise first at 50 cents per dollar of other income and then at 85 cents per dollar of other income. Finally, the taxpayer reaches a range of other income where schedule 3 would imply a level of taxable benefits above 85 percent and one moves to the schedule 1 cap.

The actual impact on the couple's tax liability of taxing Social Security benefits is the couple's marginal tax rate times the amount of Social Security benefits taxed. Thus to determine the actual tax collected from the taxation of Social Security benefits one needs to apply a non-linear marginal tax schedule to this already complicated set of three schedules.

With this complexity, it is no surprise that President Bush's Advisory Panel on Federal Tax Reform recommended that the taxation of Social Security benefits be simplified. Nor is it surprising that millions of Social Security beneficiaries pay tax preparers to do their tax returns for them, including many with little or no tax liability.

## 3. Impact on Revenue, Distribution, and Incentives

*Revenue Effects*

Because Social Security benefits are not included in AGI until provisional income exceeds $32,000 ($25,000 for single taxpayers), around two-thirds of Social Security beneficiaries pay no tax at all on their benefits. Table 1 contains data calculated from the 2004 IRS Statistics of Income public use file. SSA paid $493 billion in Social Security benefits in 2004. Only $229 billion in benefits was reported on tax returns as roughly half of Social Security beneficiaries were not required to file tax returns. Of the $229 billion, only $104 billion

represented taxable Social Security benefits for people in non-zero marginal tax rate brackets. The revenue from taxing these benefits amounted to $21.5 billion or 4.4 percent of total Social Security benefits.

Figure 3, based on data from the Social Security and Medicare Trustees' Reports, shows how this ratio of Social Security tax revenue to Social Security benefits has evolved over time and how it is projected to change in the future. The figure disaggregates this ratio into the component going to Social Security and the component going to Medicare. The ratio of revenue to benefits is rising over time because the thresholds in the Social Security taxation formulas are not indexed to inflation. Longer-run projections (available from only the Social Security Trustees Report) suggest that the average tax rate for the Social Security component will level off around 5 percent of benefits. If the Medicare component rises at a similar rate it will level off around 3 percent, so the combined ratio will reach about 8 percent.

*Distributional Effects*

Figure 4 and Table 2 show the distribution of this tax revenue by broad income level, where broad income is defined as AGI augmented with the non-taxable portions of Social Security, pensions, and interest. Figure 4 shows that while the modal income level for reporting Social Security benefits on tax returns is just below $50,000 of broad income, nearly all of the revenue from taxing Social Security comes from tax units with income above $50,000. Table 2 shows more precisely that only about 10 percent of the revenue from taxing Social Security benefits comes from tax units with broad income below $50,000 and half comes from taxing tax units in the top two deciles – those with incomes above $88,500.

The last column in Table 2 shows the average tax rate on Social Security benefits in each income decile. This rate can be interpreted as the percent reduction in Social Security benefits via means testing that occurs from the taxation of Social Security benefits. While about two-thirds of benefits are received by people who experience little or no benefit reduction from this provision, those in the top two deciles of tax returns with Social Security benefits (about 10 percent of the overall beneficiary population) experience nearly a 20 percent reduction in benefits because their benefits are taxed.

*Incentive Effects*

The taxation of Social Security benefits affects both the incentive to earn income during working years and the incentive to transfer income earned earlier in life to retirement years via saving. Consider first the impact on pre-retirement earning. When a worker earns a dollar, the worker pays a 12.4 percent tax on the earnings via the OASDI payroll tax, but receives incremental Social Security benefits that partially offset the payroll tax. Liebman, Luttmer, and Seif (2008) show that, for a typical worker, marginal benefits offset about three-quarters of the marginal tax, resulting in a net tax rate of roughly 3 percent, ignoring the taxation of benefits.[8] The taxation of benefits, however, reduces the incremental Social Security benefits received, thereby reducing the returns to work and raising the net tax rate from the Social Security system.

The top panel of Figure 5 illustrates the marginal share of Social Security benefits taxed, the first ingredient necessary for computing the marginal tax rates on incremental Social Security benefits. Conceptually, the panels of this figure can be seen as the result of taking the first

[8] The Liebman, Luttmer, and Seif results are for older workers. Net tax rates for younger workers are generally higher because receipt of Social Security benefits is further in the future and therefore the benefits are discounted more heavily. However, younger workers are less likely to be in years beyond the 35 highest years, partially offsetting the effect of the longer delay between earnings and benefits.

derivative of the lower envelope schedules in the bottom panel of figure 1. To determine the actual marginal tax rate on incremental Social Security benefits, this marginal share of benefits taxed needs to be multiplied by the couple's marginal tax rate.

For a married couple with $10,000 of taxable non Social Security income, there is no tax on Social Security benefits until Social Security benefits equal $44,000, so the marginal share of Social Security benefits taxed is 0 up until that point and then 0.25 thereafter.

Consider next the couple with $30,000 of other income. The marginal share of Social Security benefits taxes is initially zero as other income and half of Social Security benefits are below the $32,000 threshold for paying taxes on Social Security benefits. As benefits rise further, the marginal share becomes 25 percent. This comes from the third schedule described above. When Social Security benefits reach $28,000, the second term in schedule 3 kicks in and the marginal share of taxed benefits becomes .425.

For the case with $50,000 of other income, we see the peculiar phenomenon of a marginal share of benefits taxed that declines with income. Because this couple has other income that significantly exceeds the $44,000 threshold in the tax schedule for Social Security benefits, at low levels of Social Security benefits, the couple is better off including 85 percent of Social Security benefits in AGI and ignoring other income (schedule 1) than including the amount implied by the combination of half of Social Security benefits plus other income under the more favorable brackets in schedule 3. Eventually, however, Social Security benefits become large enough that the preferred schedule is schedule 2,[9] with a .425 marginal share of benefits taxed. The bottom panel shows the associated average shares of Social Security benefits taxed for the various hypothetical couples.

[9] Need to confirm that this is schedule 2 and not schedule 3.

As noted above, to find the actual marginal tax rates on incremental Social Security benefits, one needs to multiply the marginal shares like those illustrated in Figure 5 by the tax units' marginal tax rates. Table 3 presents the distribution of marginal tax rates on incremental Social Security benefits for tax units reporting Social Security benefits in the 2004 IRS SOI data file. Recall from Table 1 that less than half of Social Security benefits are reported on tax returns. The unreported half pay no tax on their Social Security benefits and therefore face a marginal tax rate of zero on Social Security benefits. Among those reporting benefits on tax returns, we see in Table 3 that a quarter pay no tax on their benefits and therefore face a zero marginal rate on incremental benefits. Another 34 percent of returns face a positive marginal tax rate that is 7.5 percent or below. The most common marginal tax rates on benefits are 3.75 percent (25 percent of benefits taxed on the margin times 15 percent marginal tax rate), 6.38 percent (42.5 percent of benefits taxed times 15 percent marginal tax rate), 12.75 percent (85 percent of benefits taxed times 15 percent marginal tax rate), and 21.25 percent (85 percent of benefits taxed times 25 percent marginal tax rate).

Consider the 12.75 percent marginal tax rate number. How much does a marginal tax rate of 12.75 percent on Social Security benefits reduce work incentives? A typical worker in the Liebman, Luttmer, Seif (2008) sample faces a 10.6 percent OASI tax rate on incremental earnings, but gets incremental benefits of 7.6 percent on those same earnings, resulting in a net tax rate of 3 percent.[10] The 12.75 percent tax rate on incremental benefits reduces the 7.6 percent incremental benefits to 6.6 percent, thereby raising the net tax from Social Security by 25 percent (from 3 percent to 4 percent). It is worth emphasizing though that fewer than 20 percent of Social Security beneficiaries face marginal tax rates on benefits as high as this and that around two-thirds face zero marginal tax rates.

[10] Liebman, Luttmer, and Seif use the 10.6 percent payroll tax rate because they do not model disability benefits.

The taxation of Social Security benefits also raises marginal tax rates on non Social Security income for people for whom an additional dollar of non-Social Security income raises the share of Social Security benefits that are taxed (people on schedule 3 and part of schedule 2). In both schedules 2 and 3, incremental dollars of non-Social Security income raise the amount of Social Security benefits taxed by 85 cents once the sum of other income and one-half of Social Security income exceeds $44,000. For a taxpayer in the 15 percent bracket, this means that an incremental dollar of other income results first in 15 cents of direct tax and then adds 85 cents of Social Security benefits to AGI, resulting in another 12.75 cents of tax – for a total marginal tax rate of 27.75 cents.

Table 4 shows the distribution of marginal tax rates on other ordinary income (earnings, interest income, taxable pension income, etc.) for tax returns reporting Social Security benefits. About a third of taxpayers reporting Social Security benefits on their returns have their marginal tax rates on other income increased by 50 percent or more because of the taxation of Social Security benefits. Specifically, about half of taxpayers (8 percentage points of the total) who would otherwise be in the 10 percent bracket are moved to the 15 percent bracket. 11.8 percent of sample members are people who are, because of the taxation of Social Security benefits, in the 22.5 percent bracket instead of the 15 percent bracket. Another 12.5 percent of sample members are in the 27.75 percent bracket instead of the 15 percent bracket. And 1.5 percent of sample members are in the 46.25 percent bracket instead of the 25 percent bracket.[11]

While this analysis shows that the taxation of Social Security benefits raises marginal tax rates for a sizable minority of Social Security beneficiaries, the complexity of these provisions raises questions about how future and current beneficiaries perceive these incentives and whether

[11] The taxation of Social Security benefits does not raise marginal tax rates of taxpayers in the 28, 33, or 35 percent brackets because anyone with enough other income to be in those brackets would have the taxable share of Social Security benefits determined by the first schedule (as 85 percent of benefits), which is not affected by other income.

their behavior responds to them. One possibility is that when taxpayers are faced with schedules of this complexity, they simply ignore them. Liebman and Zeckhauser (2004) refer to this sort of behavior as "ostriching." In that case, these marginal tax rates might have no behavioral effects and create no distortions. Another possibility is that taxpayers perceive some average tax rate from the taxation of benefits rather than the marginal incentives. Liebman and Zeckhauser (2004) call this the "ironing" type of "schmeduling." For example, taxpayers might perceive the 4 percent average tax rate on Social Security benefits calculated from Table 1 rather than the complicated distribution of zero and higher marginal tax rate presented in Tables 3 and 4. Since the average tax rate on Social Security benefits is quite low, this possibility would also result in little distortion from these provisions. Another possibility, however, is that when faced with incomprehensible schedules of this sort, taxpayers perceive particularly salient numbers associated with the schedule. In this application, they might hear that "up to 85 percent of Social Security benefits are taxed" and assume that on the margin 85 percent of Social Security benefits are always subject to taxation. In this case, the distortionary effects of these provisions could be considerably higher than those implied by the distributions of marginal tax rates in tables 3 and 4.

## 4. What Information Predicts Material Well-being in Retirement?

Social Security differs from most other transfer programs in that its benefit formula is a function of average lifetime earnings. In a simple life-cycle model, knowing a person's lifetime earnings should be enough to predict quite well a person's consumption level in retirement. This raises the question of whether information on the non-Social Security income sources for Social Security beneficiaries is of any value in determining a person's ability to absorb a

reduction in Social Security benefits. It might be that Social Security benefits are close to a sufficient statistic for retirement consumption levels. In this case, the administrative complexity of taxing Social Security benefits is unnecessary. Distributional objectives can be accomplished simply by adjusting the progressivity of Social Security benefits.

As a preliminary step toward answering this question, we examined the correlation between total Social Security benefits and total non-Social Security income (AGI minus Social Security benefits plus the non-taxable portions of pension and interest income) on the tax returns of people who report Social Security benefits on their returns. Remarkably, the correlation was only 0.05. There are two possible interpretations for this low correlation. One interpretation is that other income contains significant additional information on taxpayer's material well being and ability to pay beyond the lifetime earnings information inherent in Social Security benefits. Under this interpretation, the taxation of Social Security benefits would have significant value in achieving target efficiency relative to simply adjusting the Social Security benefit formula in a progressive manner. A second interpretation is that other income largely represents random noise. For example, year-to-year variation in the returns to capital and lumpy decisions about when to exercise capital gains could results in a measure of other income that is not only uncorrelated with lifetime earnings, but also uncorrelated with well-being in retirement. Under this scenario, taxing people on their Social Security benefits in the hope that the extra predictive value of other income sources would enhance target efficiency would be futile.

To distinguish between these two interpretations, we examined the correlations between Social Security benefits, other income components, and consumption in the 2002 Consumer Expenditure Survey. Consumption is generally thought to be a better measure of material well-

being than income-based measures, and Meyer (2007) argues that this is particularly true for the elderly.

Table 5 shows these correlations for families who report some Social Security benefits. The correlation between consumption and non Social Security income is 0.567. The correlation between consumption and Social Security benefits is 0.311. The correlation between consumption and total income (the sum of Social Security benefits and non Social Security income) is 0.600 (not shown), not much higher than the correlation with non-Social Security income alone.

Table 6 shows these relationships as OLS regressions. The first regression looks at the predictive power of Social Security benefits for consumption levels. Not surprisingly, Social Security benefits are significantly related to consumption levels for beneficiaries, but the R-squared shows that they can explain only about 10 percent of the variation in consumption among beneficiary households. In contrast, we see in the second regression that other income can explain 32 percent of the variation in consumption among these households. Putting both variables into the regression raises the percent of the variation explained to 37 percent. The coefficient on Social Security benefits is about double the coefficient on other income. This makes sense since Social Security is a persistent income source, so a marginal dollar of annual Social Security benefits should raise consumption by close to a dollar. In contrast, other income is a combination of persistent income sources such as income from annuitized pensions and of non-persistent sources such as post-retirement wages or one-time capital income realizations. Thus, we would expect to see a lower marginal propensity to consume out of other income.

We have several tentative conclusions based on this analysis. First, if one's goal is to reduce Social Security benefits in a way that targets the reductions on those with the highest

level of economic well-being in retirement, doing so through direct changes to the Social Security benefit schedule is unlikely to be a very accurate solution. Second, incorporating measures of non-Social Security income can greatly improve one's targeting ability. Given administrative constraints, taxing Social Security benefits is likely the only cost-effective way to accomplish this improved targeting. Third, once one knows a taxfiler's non-Social Security income, one gets relatively little benefit from also knowing a person's Social Security benefit level. Thus, if one wants to reduce Social Security benefits via the tax return, it probably makes sense to take a relatively simply approach to including Social Security benefits in AGI. The value added to a complicated schedule that treats other income and Social Security benefits in highly asymmetric ways is likely to be small.

It is somewhat surprising that Social Security benefits have such little ability to predict the consumption levels of beneficiaries. We do not fully understand the reason for this. Part of the explanation may be that Social Security benefits are compressed at levels below $30,000, in part due to the wage cap, and have little ability to explain variation in consumption at higher levels (see Figure 6 which contains scatter plots of Social Security benefits versus consumption and other income versus consumption). Another part of the explanation may be that there is substantial variation in Social Security benefits for people with similar levels of lifetime earnings due to differences in spousal benefits, in the timing of income, and in when they chose to claim benefits (see Liebman 2002 for some analysis of this issue). But the most important part of the story is likely to be that people with similar lifetime earnings trajectories and similar Social Security benefits can differ significantly in their financial well-being in retirement depending on whether they acquired an employer pension from their main job, whether they saved during their

working years, and whether they experienced adverse consumption shocks at some point in their lives.

## 5. Simplification Options

The analysis so far suggests that the current approach to taxing Social Security benefits is complex, but that the information on other income available on the tax return has value in targeting benefit cuts to those most able to bear them.

President Bush's tax reform commission suggested a simplified approach to taxing Social Security benefits that would reduce the current 18 line worksheet to a 6 line worksheet. Under this proposal, 85 percent of Social Security benefits would be included in income, but a married couple would be given a deduction equal to 85 percent of their Social Security benefits, with the deduction phasing out at a rate of 50 cents per dollar on income above $44,000. This approach would mean that married taxpayers with income below $44,000 would, in effect, have none of their Social Security benefits included in taxable income. Then the amount of benefits subject to tax would rise gradually until 85 percent of benefits were included in taxable income. On the margin, an increase in Social Security benefits for a married couple with income above $44,000 would result in incremental AGI of either 50 cents or 85 cents. In the range over which the share of Social Security benefits taxed was being phased in, the effective marginal tax rate on non-Social Security income would be increased by 50 percent, since each dollar of income would be itself taxed and would also cause an additional 50 cents of Social Security benefits to be taxed.

Figure 7 illustrates the percentage reduction in Social Security benefits that is achieved via the taxation of benefits under the current approach and under the approach of the Bush tax reform commission. The figure shows the reduction in Social Security benefits that occurs for a

married couple with $20,000 of Social Security benefits as other income increases. The top panel shows the effective benefit reduction under the current system. As other income rises from around $22,000 to around $70,000, the benefit reduction increases from zero to over 20 percent. At the highest income levels shown in this figure, the benefit reduction reaches 28 percent (33 percent bracket x 85% of benefits taxed).

The bottom panel plots the current approach along with two alternative approaches. The first is the Bush tax commission approach which comes quite close to matching the benefit reductions of the current system, but with a simpler schedule. The second alternative includes 85 percent of benefits in AGI for all taxpayers and then increases the standard deduction by $17,000 for Social Security beneficiaries.[12] The increase in the standard deduction is phased out at a 50 percent rate on income above $25,000. This second alternative achieves roughly the same degree of benefit reduction, but would make it easier for beneficiaries to determine whether or not they need to file a tax return in the first place. In particular, beneficiaries could be told that so long as their gross income was below $25,000 there is no need to file a return. In 2004, 17 percent of tax returns reporting Social Security benefits had zero tax liability. Finding a way to eliminate the filing requirement for most of these 2.5 million returns would be desirable.

[12] One could achieve a similar outcome by increasing the personnel exemption for seniors.

**Figure 1**
**The Calculation of Taxable Benefits, Part I**


**Figure 2**
**The Calculation of Taxable Benefits, Part II**

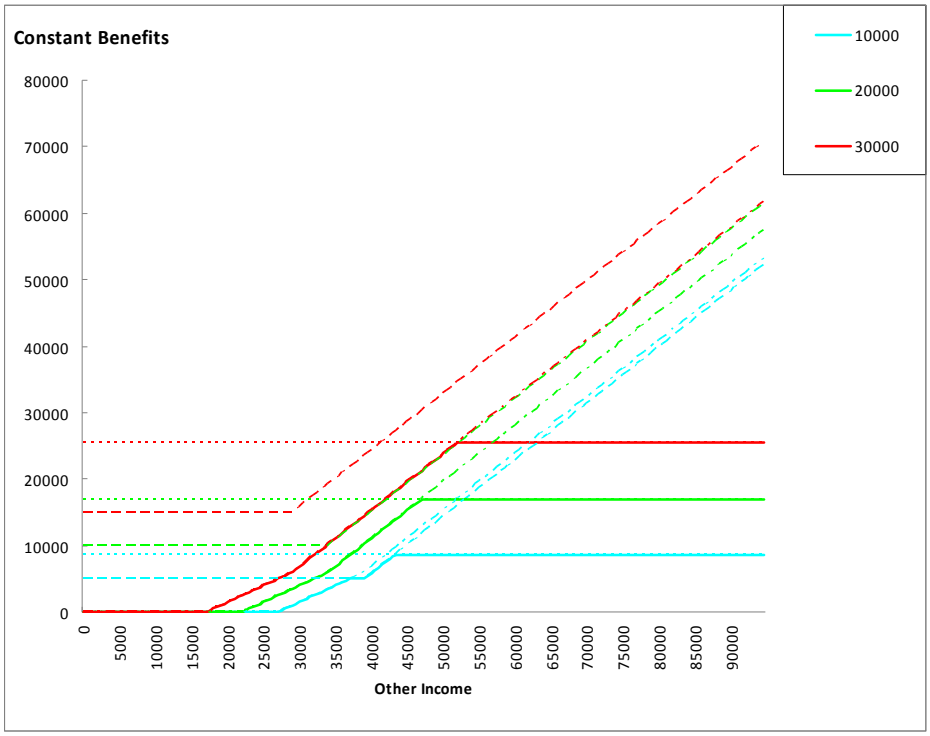
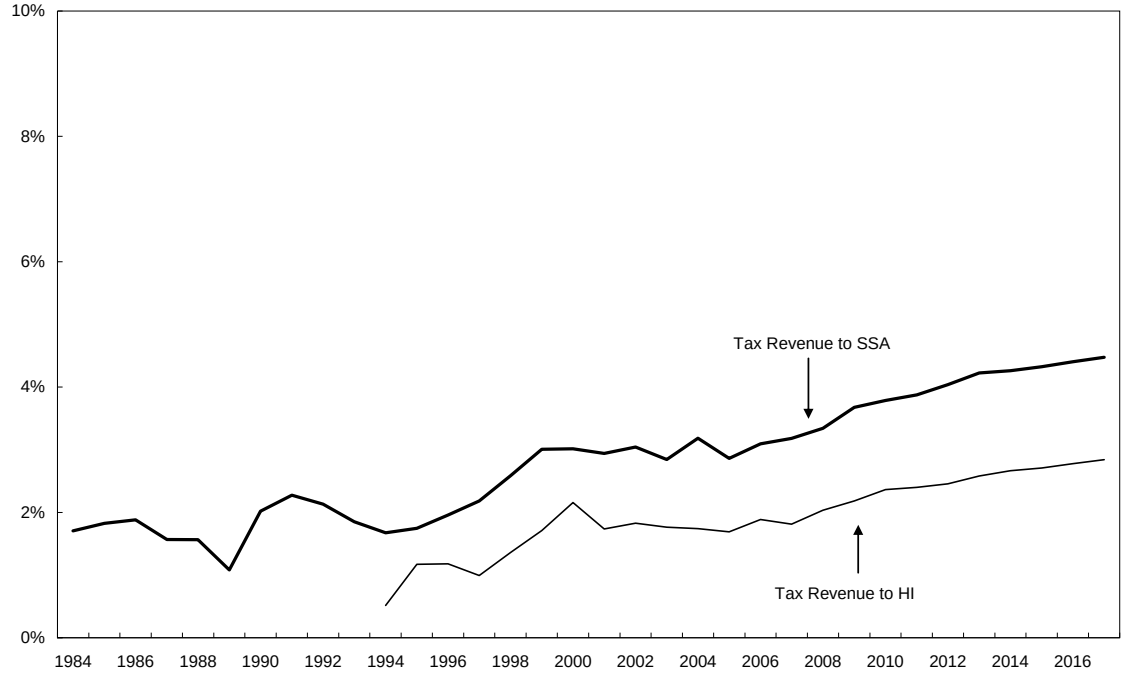



Figure 3. Ratio of Tax Revenue from Social Security Benefits to Total Social Security Benefits




Sources: SSA Trustees Report 2008, CMS Trustees Report 2008.

**Figure 4**

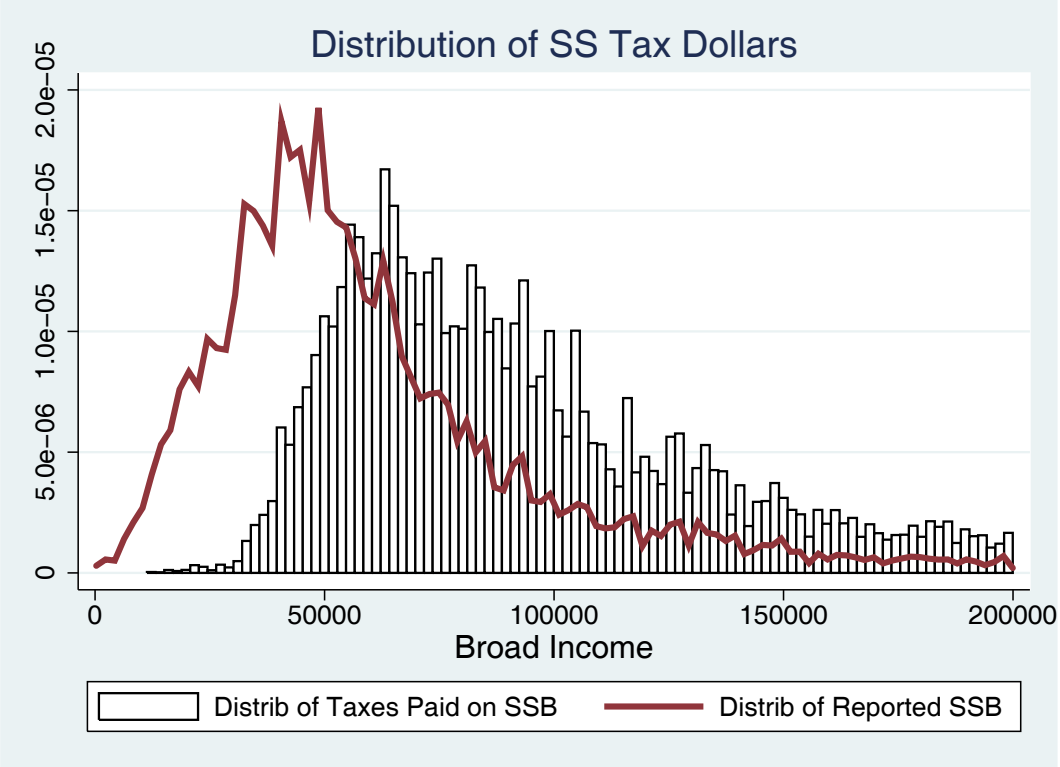
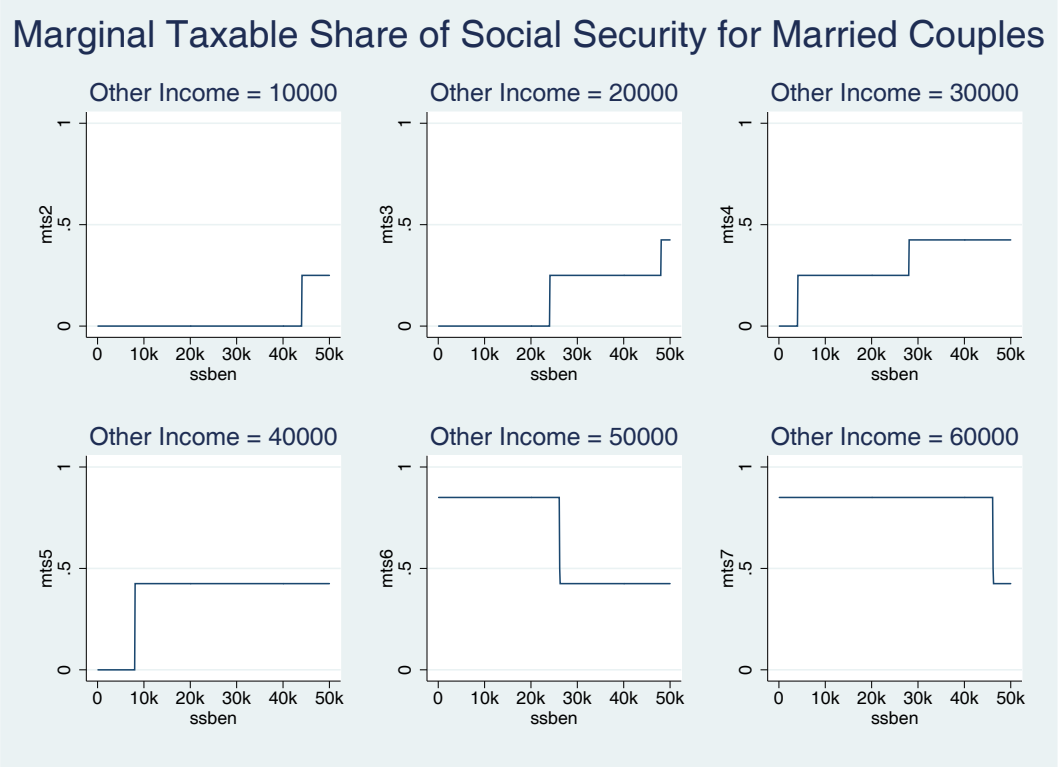

Distribution of SS Tax Dollars
0
5.0e−06
1.0e−05
1.5e−05
2.0e−05
0
50000
100000
150000
200000
Broad Income
Distrib of Taxes Paid on SSB
Distrib of Reported SSB

**Figure 5**


Marginal Taxable Share of Social Security for Married Couples
Other Income = 10000
Other Income = 20000
Other Income = 30000
Other Income = 40000
Other Income = 50000
Other Income = 60000
mts2
mts3
mts4
mts5
mts6
mts7
0
.5
1
0
10k
20k
30k
40k
50k
ssben

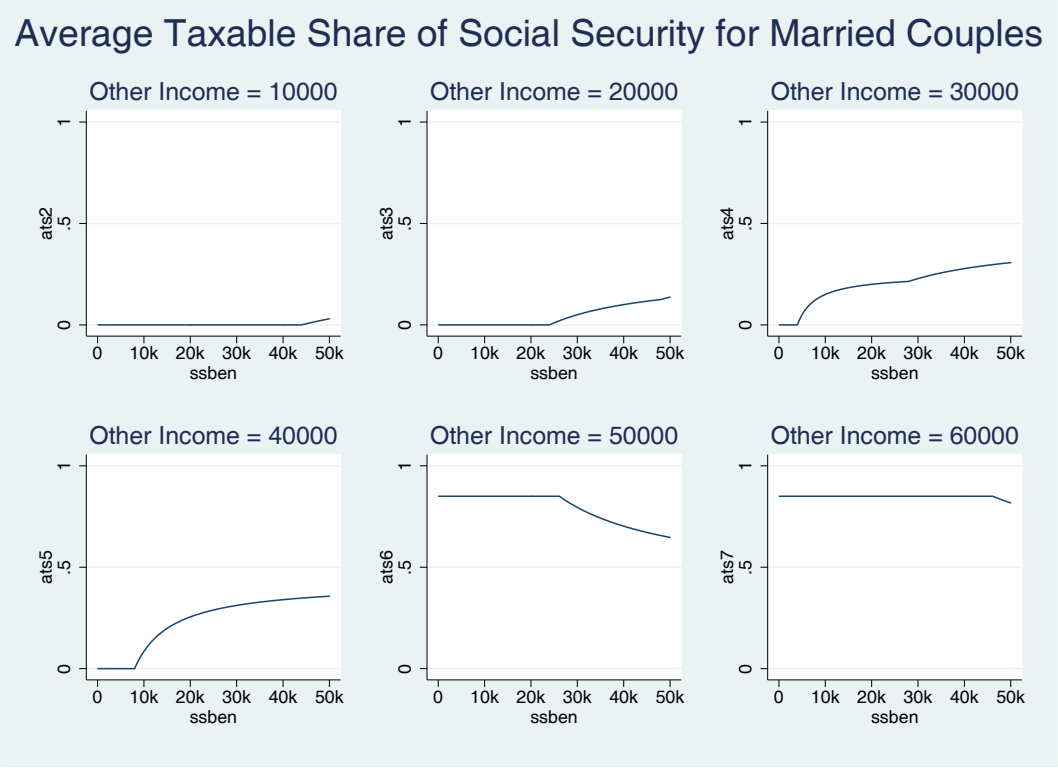

Average Taxable Share of Social Security for Married Couples
Other Income = 10000
Other Income = 20000
Other Income = 30000
Other Income = 40000
Other Income = 50000
Other Income = 60000
ats2
ats3
ats4
ats5
ats6
ats7
0
.5
1
0
10k
20k
30k
40k
50k
ssben

**Figure 6**

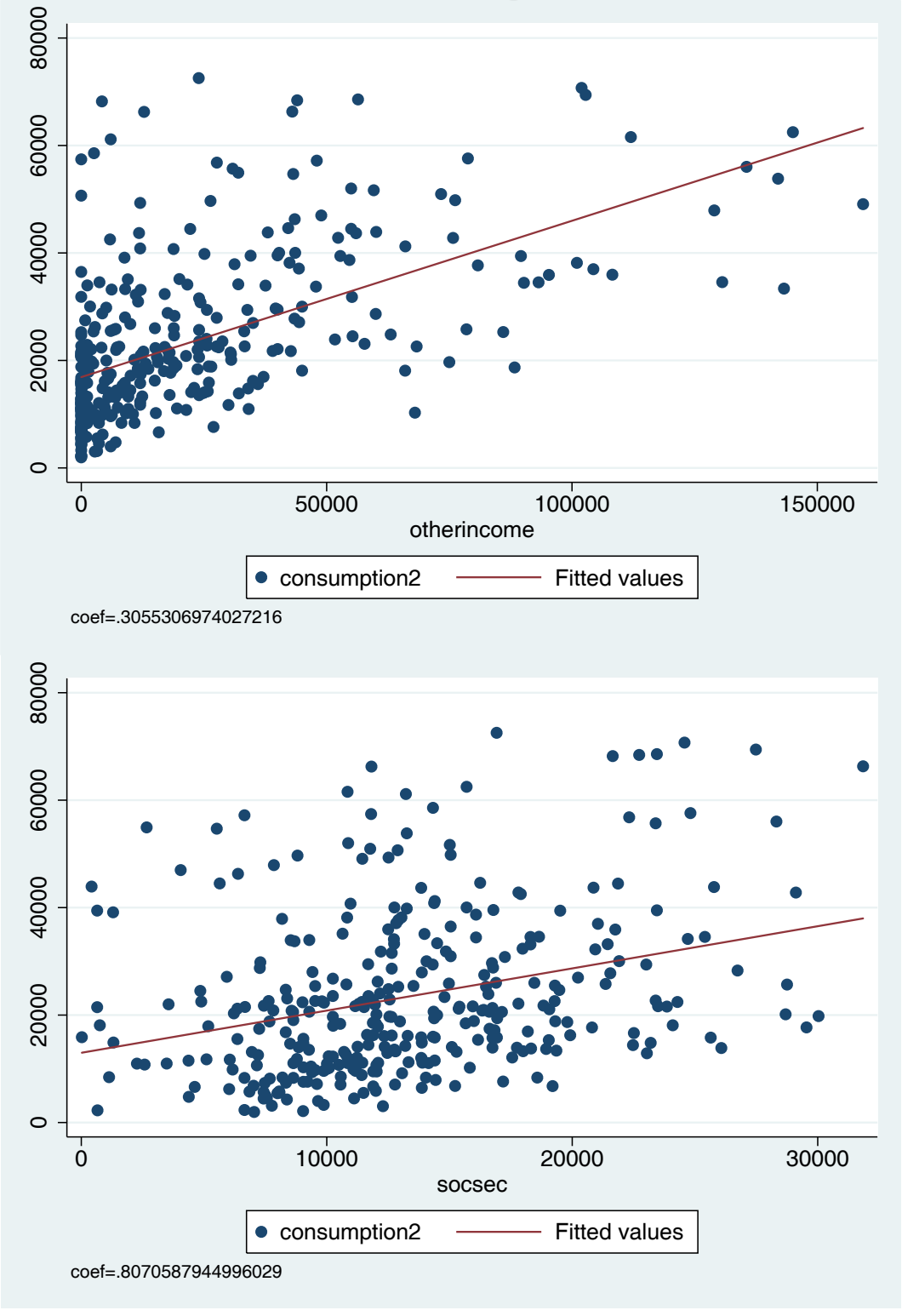
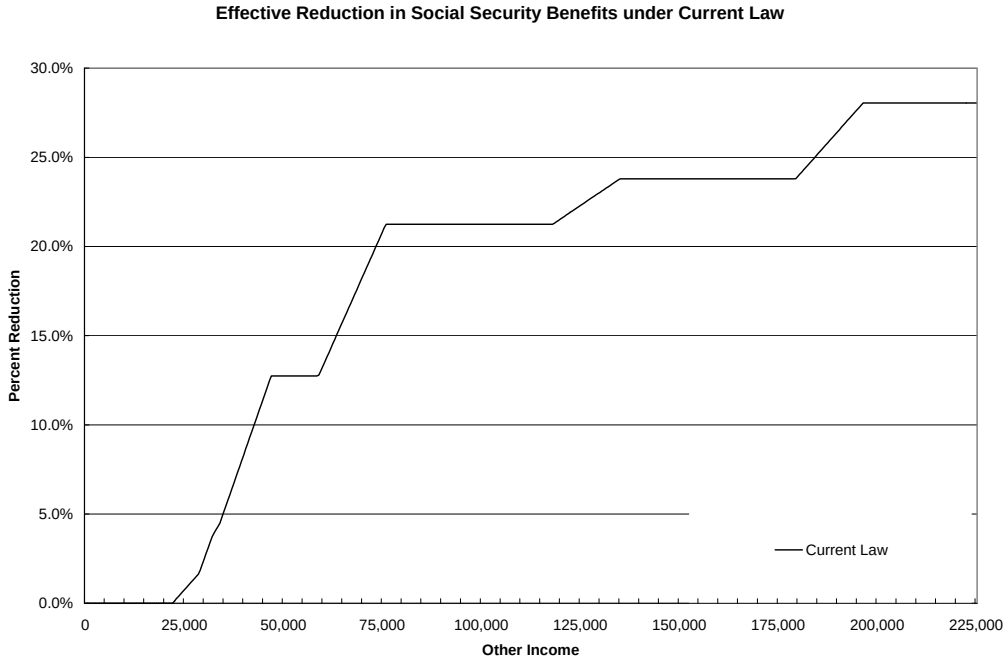

0
20000
40000
60000
80000
0
50000
100000
150000
otherincome
consumption2
Fitted values
coef=.3055306974027216
0
20000
40000
60000
80000
0
10000
20000
30000
socsec
consumption2
Fitted values
coef=.8070587944996029

Figure 7


Effective Reduction in Social Security Benefits under Current Law
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Percent Reduction
0
25,000
50,000
75,000
100,000
125,000
150,000
175,000
200,000
225,000
Other Income
Current Law

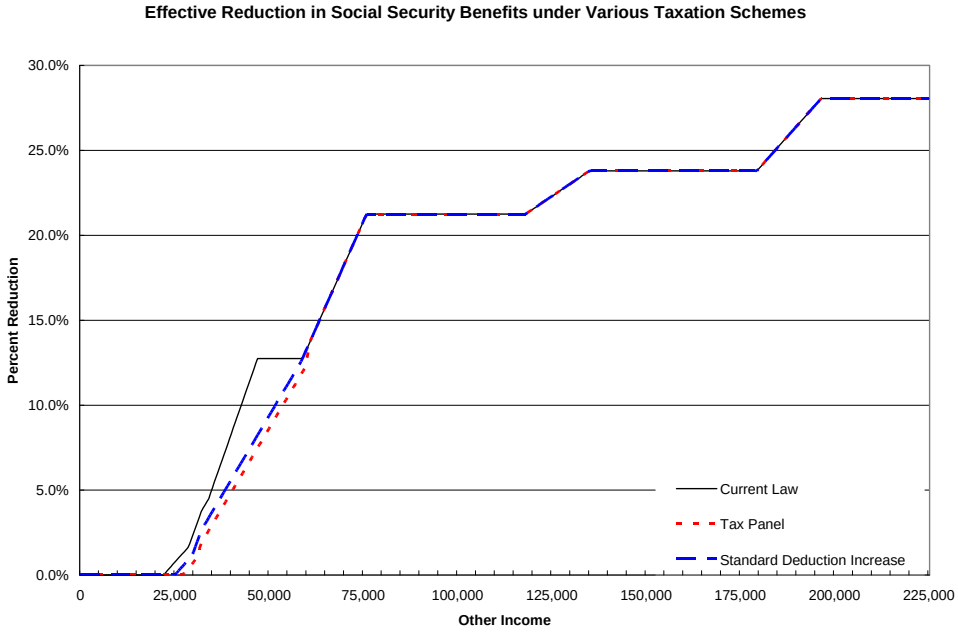

Effective Reduction in Social Security Benefits under Various Taxation Schemes
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
Percent Reduction
0
25,000
50,000
75,000
100,000
125,000
150,000
175,000
200,000
225,000
Other Income
Current Law
Tax Panel
Standard Deduction Increase

Table 1. 2004 Tax Revenue from Social Security Benefits
Billions of dollars

| | |
|---|---|
| Total Social Security Benefits | $493.3 |
| Total Social Security Benefits Reported on Tax Returns | $228.8 |
| Total Taxable Social Security Benefits Reported on Tax Returns | $109.9 |
| Total Taxable Social Security Benefits with nonzero Marginal Tax Rate | $104.4 |
| Total Tax Revenue | $21.5 |

Note: Total Tax Revenue calculated as the sum of the product of marginal tax rate and taxable social security benefits over the universe of returns.
Sources: SSA 2008 Trustees Report, 2004 SOI.

# Table 2

Distribution of Tax Revenue from Taxing Social Security Benefits

| | Broad Income Decile Ranges for 2004 Returns with Positive SS Benefits | Share of Total Social Security Benefits (as Reported by SSA) | Share of Total Tax on Social Security Benefits | Average Tax Rate on Social Security Benefits |
|---|---|---|---|---|
| | Not Reported on Tax Return | 53.6% | 0.0% | 0.0% |
| 10 | < 23930 | 3.0% | 0.2% | 0.2% |
| 20 | >=23930 & <33084 | 3.7% | 0.3% | 0.4% |
| 30 | >=33084 & <39894 | 3.9% | 1.5% | 1.7% |
| 40 | >=39894 & <45902 | 4.3% | 3.3% | 3.4% |
| 50 | >=45902 & <52442 | 4.8% | 5.4% | 4.9% |
| 60 | >=52442 & <60281 | 4.9% | 9.1% | 8.1% |
| 70 | >=60281 & <70709 | 5.2% | 12.9% | 10.8% |
| 80 | >=70709 & <88562 | 5.2% | 17.6% | 14.7% |
| 90 | >=88562 & <130060 | 5.5% | 24.0% | 19.1% |
| 100 | >=130060 | 5.9% | 25.6% | 19.0% |

Note: Broad income is adjusted gross income plus the non-taxable portions of Social Security benefits, pensions, and interest. Deciles are calculated from returns with positive social security benefits only.
Source: 2004 SOI public use file.

**Table 3**

**Marginal Tax Rates on Social Security Benefits**

| Marginal Tax Rate | Share of Tax Filers |
|---|---|
| 0.00% | 24.69% |
| 2.50% | 8.87% |
| 3.75% | 11.82% |
| 4.25% | 0.59% |
| 5.00% | 0.12% |
| 6.38% | 11.42% |
| 7.50% | 1.66% |
| 8.50% | 0.30% |
| 9.25% | 0.02% |
| 10.63% | 1.39% |
| 12.75% | 13.22% |
| 13.88% | 1.04% |
| 21.25% | 18.70% |
| 23.13% | 0.08% |
| 23.80% | 4.30% |
| 28.05% | 1.79% |

Note: Sample includes all tax filers reporting positive social security benefits except married filing separately.
Source: SOI 2004.

Table 4

**Marginal Tax Rates on Earnings/Savings**

| Marginal Tax Rate | Share of Tax Filers |
|---|---|
| 0.00% | 16.56% |
| 10.00% | 7.49% |
| 15.00% | 24.82% |
| 18.50% | 0.61% |
| 21.38% | 0.00% |
| 22.50% | 11.82% |
| 25.00% | 18.70% |
| 27.75% | 12.46% |
| 28.00% | 4.30% |
| 33.00% | 1.79% |
| 46.25% | 1.47% |

Note: Sample includes all tax filers reporting positive social security benefits except married filing separately.
Marginal increase is assumed on taxable component of earnings/savings
Total deductions are held constant.
Source: SOI 2004.

Table 5
Correlations Among Consumption and Income Components
for Social Security Beneficiaries

| | Consumption | Social Security Benefits | Other Income |
|---|---|---|---|
| Consumption | 1.000 | | |
| Social Security Benefits | 0.311 | 1.000 | |
| Other Income | 0.567 | 0.159 | 1.000 |

Source: Authors' calculations from Consumer Expenditure Survey.

| Table 6<br>Regression Relationships Among Consumption and Income Components<br>for Social Security Beneficiaries | | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Constant | 12089<br>(2182) | 18312<br>(828) | 9083<br>(1710) |
| Social Security Benefits | 0.807<br>(0.161) | | 0.588<br>(0.128) |
| Other Income | | 0.308<br>(0.027) | 0.286<br>(0.026) |
| | | | |
| R2 | 0.097 | 0.322 | 0.372 |
| N | 333 | 333 | 333 |

Note: Dependent variable is consumption. Standard errors in parentheses.
Source: Authors' calculations from Consumer Expenditure Survey.