THE EFFECTS OF THE TAXATION OF SOCIAL SECURITY BENEFITS ON OLDER WORKERS' INCOME AND CLAIMING DECISIONS

Leonard E. Burman, Norma B. Coe, Kevin Pierce, and Liu Tian

Social Security benefits are taxed under a complex regime that raises marginal effective tax rates by up to 85 percent, which could discourage the labor supply of older workers and affect the decision to claim benefits. Using a nonparametric graphical methodology, this paper investigates whether older taxpayers reduce income to avoid the tax. While previous research found that the labor supply of older workers is significantly affected by the Social Security earnings test, we find little evidence of a response to benefit taxation in a large panel of data compiled from individual income tax and information returns. Similarly, while taxation of benefits provides an incentive for many to delay claiming, we find no evidence of such an effect. Overall, the findings suggest that older taxpayers have little understanding of the rules governing Social Security benefit taxation.

I. INTRODUCTION

Social Security benefits are taxed under a complex regime that can raise marginal effective income tax rates by up to 85 percent for some benefit recipients. Over a range of Modified Adjusted Gross Income (MAGI),[1] affected taxpayers must include in their taxable income 50 cents of Social Security benefit for every additional dollar of MAGI; at higher income levels, 85 cents of benefits must be added, until 85 percent

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[1] MAGI includes most of the income and adjustments reflected in adjusted gross income (AGI), plus tax-exempt interest and one-half of Social Security benefits, rather than the taxable portion.

Burman, Leonard E.: Urban Institute, Washington, DC, Syracuse University, Syracuse, NY, and NBER, Cambridge, MA, USA (lburman@urban.org)

Norma B. Coe: University of Washington, Seattle, WA, and NBER, Cambridge, MA, USA (nbcoe@uw.edu)

Kevin Pierce: Internal Revenue Service, Washington, DC, USA (Kevin.K.Pierce@irs.gov)

Liu Tian: Syracuse University, Syracuse, NY, USA (ltian@maxwell.syr.edu)

of Social Security benefits are included. In these income ranges, an additional dollar of other taxable income increases total taxable income by $1.50 or $1.85. At the higher of these income levels, this can convert a 25 percent statutory tax rate into a 46.25 percent effective rate. This is much higher than the top income tax bracket,[2] but it applies to older households with relatively modest incomes.

The tax on benefits is in some ways similar to the Social Security earnings test (SSET), which reduces Social Security benefits by 50 cents for every dollar earned above an exempt amount for those younger than the Full Retirement Age (FRA, currently age 66), which has been shown to significantly depress work effort.[3] For taxpayers in the highest income tax bracket, it can reduce the after-tax value of Social Security by more than one-third (and more in states with income taxes that conform to the federal tax treatment). However, there are two important differences that could lead to even bigger responses to benefit taxation. First, the taxation of benefits applies at all ages while the SSET applies only to Social Security recipients who claim benefits before reaching FRA. Second, unlike the SSET, the benefit tax is a pure tax, resulting in a reduction in lifetime after-tax income.[4]

In principle, the tax could have important effects on labor supply, capital gains realizations, the timing of Social Security claiming, and tax avoidance or evasion. In practice, the actual effects are hard to predict because the taxation regime is so complex. Many older people may not understand the incentives created by the taxation of benefits, suggesting that they might overreact to the tax or simply ignore it.

This paper examines two aspects of older taxpayers' response to the taxation of Social Security benefits: income responses and Social Security claiming decisions. We explore the incentives created by the tax rules and then look for evidence of response in a panel of data from individual income tax and information returns. We update an earlier analysis of taxable income responses using more recent data and also explore whether the decision to claim benefits is impacted by benefit taxation.

We find no evidence of bunching at or around the thresholds for the population as a whole, and only a very small response for single self-employed taxpayers who have previously been found to be more sensitive to changes in tax rates (Saez, 2010; Chetty et al., 2011). We similarly find scant evidence of a response of the claiming decision. This suggests that the tax may have some aspects of an optimal lump-sum tax — creating income but not substitution effects. However, to the extent that the tax creates confusion and uncertainty there can be an additional welfare loss.

The paper continues as follows. Section II describes the taxation of Social Security Benefits. Section III surveys the relevant literature. Section IV develops a simple theoretical model. Section V discusses the data and Section VI presents the empirical results. Section VII summarizes our findings and discusses planned future work.

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[2] In 2013, the top income tax bracket was 39.6 percent and applied to households with taxable incomes over $450,000 (married) and $400,000 (single).

[3] A 33 percent reduction and a higher exemption apply to workers in the year in which they reach the FRA.
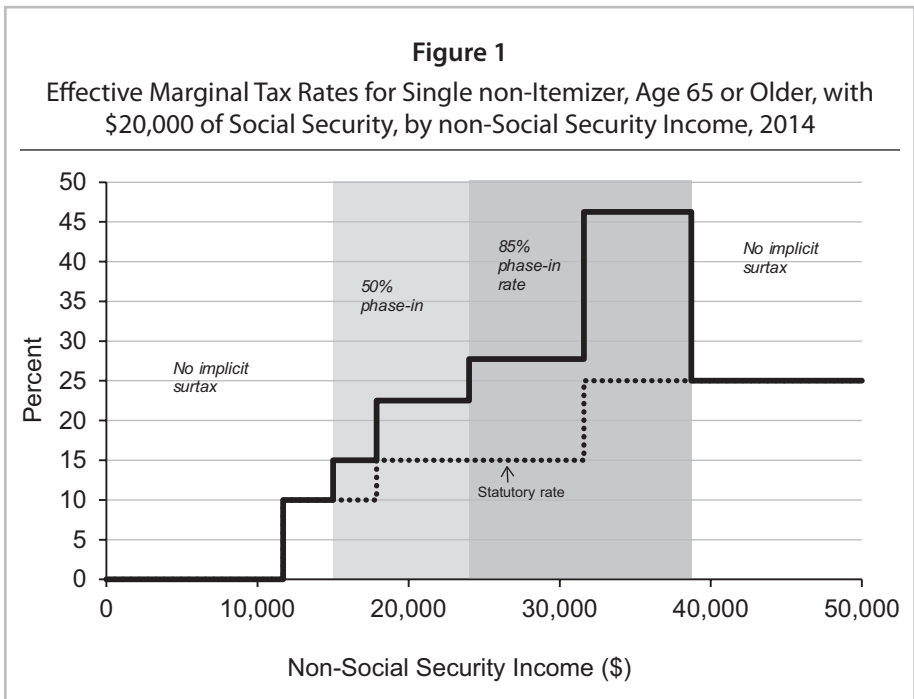
[4] Under the SSET, the reduced current benefits translate into higher benefits once the FRA is reached.

II. TAXATION OF SOCIAL SECURITY BENEFITS

Prior to 1983, Social Security benefits were not subject to income tax. In 1983, the Greenspan Commission recommended that a portion of benefits be subject to income taxation, with the resulting additional tax revenue allocated to the Old Age Survivors and Disability Insurance, or Social Security, trust fund (OASDI). Legislation enacted in 1993 increased the amount of benefits included in taxable income for higher-income taxpayers, with the additional revenues allocated to the HI (Medicare) trust fund.

The formula for benefit taxation is complex. OASDI benefits become subject to income taxation when MAGI exceeds $25,000 for single ($32,000 for married) taxpayers. Above those thresholds, the taxable portion of benefits phases in starting at a 50-percent rate; 50 cents of benefits are included in taxable income for every additional dollar of MAGI. After a second threshold ($34,000 for singles and $44,000 for married households), the phase-in rate increases to 85 percent; 85 cents of benefits are included in taxable income for every additional dollar of MAGI. The phase-in continues until 85 percent of Social Security benefits are included in taxable income.

The taxation of Social Security benefits increases effective marginal tax rates by 50 percent in the first phase-in range and by 85 percent in the second. This is because an additional dollar of AGI (earnings or non-labor income) increases MAGI by $1.50 in the 50-percent phase-in range and by $1.85 in the higher interval, until 85 percent of Social Security benefits are included in taxable income. Figure 1 illustrates how the

Figure 1

Effective Marginal Tax Rates for Single non-Itemizer, Age 65 or Older, with $20,000 of Social Security, by non-Social Security Income, 2014

taxation of benefits distorts effective tax rates for a taxpayer with $20,000 in Social Security benefits in 2010. The effective tax rate schedule is marked by significant discontinuities — much larger than under the regular income tax. Over the phase-in range of income, a taxpayer would ordinarily face three marginal rates — 10 percent, 15 percent, and 25 percent. However, because of the partial inclusion of Social Security benefits, three additional effective rates are created — 22.5 percent, 27.75 percent, and 46.25 percent. The top effective rate, which applies to seniors with relatively modest incomes ($31,600–$38,706 in Figure 1), is actually higher than the top statutory income tax rate of 39.6 percent that applies to taxpayers with income over $406,750 in 2010.

As shown in Figure 1, taxpayers with income just beyond the phase-in region face a marginal rate of 25 percent, which is more than 20 percentage points lower than those with lower incomes. For elders in this income range, taxation of benefits reduces their after-tax income, but does not have the same implicit surtax or marginal disincentive to work or earn other income.

The thresholds for taxation have been fixed in nominal terms since their inception. Since the thresholds are not adjusted for inflation, they decrease in real terms over time, unlike federal income tax brackets and many other income tax parameters. As a result, taxation of Social Security affects an increasing proportion of beneficiaries over time, pushing people into higher tax brackets. The number of returns with taxable Social Security benefits nearly tripled — from 5.3 million to 16.8 million — between 1990 and 2011 (IRS, 2011). (Another 9 million tax returns had Social Security benefits below the threshold for taxation.) The dollar amount of Social Security benefits subject to taxation increased even more, from $33.6 million in 1990 to $201.6 million in 2009, partly because of the 1993 legislation and partly because of increases in nominal income of the elderly.

III. PREVIOUS LITERATURE

While Social Security has been extensively studied, relatively little attention has been paid to the taxation of benefits. The closest analogue is the SSET, which reduces Social Security benefits for individuals who have not reached the FRA and whose earnings exceed a threshold.[5] The SSET is different in several key ways. For one thing, it is much easier for individuals to determine if they are affected since it depends only on individual earnings and age. In another sense, though, it is more complicated because there is an actuarial adjustment. The reduced Social Security benefits translate into higher future benefits (assuming the individual lives long enough to claim them) making labor supply decisions a function not only of the tax rate, but of life expectancy and discount rates. Evidence, however, suggests that older workers view the SSET as a tax with little or no awareness of the actuarial adjustment (Biggs, 2008). Several

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[5] Prior to 2001, there was also a SSET at a reduced rate for individuals between the FRA and age 69.

studies find evidence that the SSET discouraged work among older Americans.[6] Also, eliminating the earnings test for beneficiaries who had reached the FRA increased the likelihood of employment after the FRA and accelerated benefit claiming between ages 65 and 69 (Song and Manchester, 2007; Friedberg and Webb, 2009).

The Social Security benefit formula itself impacts the implicit taxes on work. The formula is progressive, so those with high earnings get much less in additional benefits per dollar of payroll tax than those with lower incomes. For some workers, including those who expect to have fewer than 40 covered quarters of work — and are thus ineligible for benefits — or who will receive benefits based on their spouse's earnings, the payroll tax is a pure tax. Liebman, Luttmer, and Seif (2009) find labor supply and retirement decisions of older workers to be sensitive to the variation in the effective tax rate on earnings. Of particular relevance, this research suggests a surprisingly sophisticated understanding of complex rules. A survey by Leibman and Luttmer (2012) finds a fair amount of knowledge of some Social Security provisions and relatively less about others (including the earnings test).

We know of only four previous studies that have examined the taxation of Social Security benefits. Goodman and Liebman (2008) look at the taxation of benefits as a form of means-testing and conclude that it is sub-optimal. They do not explicitly consider the effect of taxation of benefits on economic incentives, but, citing behavioral economics research, they question whether and how individuals might respond to the tax incentives:

> 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 their behavior responds to them. (Goodman and Liebman 2008, pp. 17–18.)

One possibility is that, overwhelmed by the complexity of the incentives, taxpayers might simply ignore the tax. Alternatively, they might apply a simple rule of thumb — e.g., on average, 4 percent of Social Security benefits are included in taxable income — that could similarly result in little distortion. Or, Goodman and Liebman (2008) conjecture, taxpayers may misperceive the tax as applying to 85 percent of Social Security benefits. This could create a quite large income effect — even for taxpayers with incomes so low that little or none of their benefits are taxable — although presumably it would have no effect on the perceived after-tax return to working or earning other income.

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[6] Friedberg (2000), Gustman and Steinmeier (2005), Benitez-Silva and Heiland (2007), Song and Manchester (2007), Heider and Loughran (2008), Engelhardt and Kumar (2009), and Friedberg and Webb (2009) find significant effects. Burtless and Moffitt (1985), Gruber and Orszag (2003), Gustman and Steinmeier (1985), and Song and Manchester (2007) find small effects.

Page and Conway (2011) measure the income effect of the taxation of benefits directly by exploiting the natural experiment of the introduction of taxation in 1983, using a difference-in-differences methodology with data from the Current Population Survey (CPS). They estimate that a 20 percent reduction in after-tax Social Security benefits increases labor force participation among high-income elderly by 2 to 5 percentage points. They argue that taxation of Social Security benefits increases labor supply through the income effect: people above the threshold where 85 percent of benefits are subject to tax, even before including OASDI benefits, have less after-tax income, which increases hours of work. They do not attempt to measure the marginal effect of reduced after-tax income within the phase-in range.

Burman, Coe, and Tian (2011) attempt to measure directly the effect of taxing Social Security benefits on labor force participation and earnings using data from the Health and Retirement Study (HRS). They do not find evidence that taxation of benefits significantly affects labor market behavior, but they raise the major caveat that their estimates from the HRS may be unreliable because of errors in variables and small sample size. Survey estimates of tax information are notoriously imprecise and the HRS lacks key components of taxable income, such as capital gains.

Burman et al. (forthcoming) use a panel of individual taxpayers data compiled by the Statistics of Income (SOI) division to examine whether there is bunching around the benefit taxation thresholds. They find little evidence of bunching, but do not examine all of the margins for a behavioral response, such as the claiming decision.

IV. POTENTIAL EFFECTS OF BENEFIT TAXATION

A. Effects on Income

If there is a behavioral response to the taxation of benefits, the substantial kinks in the tax schedule could create clustering of households at the MAGI kink points. This clustering could happen in a variety of ways because the levy is an implicit surtax that applies to all income included in MAGI, regardless of source.[7] Taxpayers may modify their MAGI in response to benefit taxation in various ways, such as reducing labor supply at the extensive or intensive margin or changing the timing of capital gains realizations or withdrawals from taxable accounts.[8] Although taxpayers with very low and very high non-labor incomes are likely to be unaffected, taxpayers whose earnings would be subject to partial taxation might be less likely to produce or report income than other similar taxpayers.

Taxing Social Security benefits generates convex kinks in the budget constraint at the thresholds for the 50-percent and 85-percent phase-in rates (corresponding to MAGI

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[7] Although the tax potentially applies to taxpayers collecting disability and survivor benefits under the OASDI program, our analysis will focus on Social Security beneficiaries.

[8] Burman (1999) points out that the taxation of Social Security can have disproportionate effects on effective long-term capital gains tax rates; it can add up to 21.25 percentage points (85 percent of 25 percent) to the statutory capital gains tax rate of 15 percent that applies to taxpayers in that income range.

of $25,000 and $34,000 for single filers). In a simple model of utility maximization, taxpayers with incomes only slightly greater than the threshold will reduce their incomes to the threshold.

To see this, consider a simplified example in which there is a flat-rate income tax and only one rate of taxation of Social Security (as was the case between 1983 and 1993), which increases tax rates by 50 percent. The optimal level of MAGI will maximize utility subject to the kinked budget constraint (Figure 2). Assuming that individuals are averse to work and other activities that increase MAGI and that they value consumption (after-tax income), higher utility corresponds to indifference curves that move in a northwesterly direction on the figure.

Figure 2 illustrates three categories of taxpayers who will be affected differently by the introduction of taxation of benefits. In Panel A, MAGI in the absence of taxation of Social Security would fall below the threshold. That individual is unaffected by benefit taxation. Panel B shows a taxpayer who before the tax change would have MAGI of z^* + Δz^*, but after introduction of the taxation regime chooses MAGI of z^*. Saez (2010) shows that in the case where individuals have identical preferences but differ in their ability to earn income (e.g., their hourly wage rate differs), all individuals with initial incomes between z^* and $z^* + \Delta z^*$ would bunch at the kink. Taxpayers who initially have higher incomes than $z^* + \Delta z^*$ may also reduce their incomes, but their new incomes would be tangent to the new budget constraint to the right of z^*. Finally, Panel C depicts high-income taxpayers for whom the tax produces only an income effect.
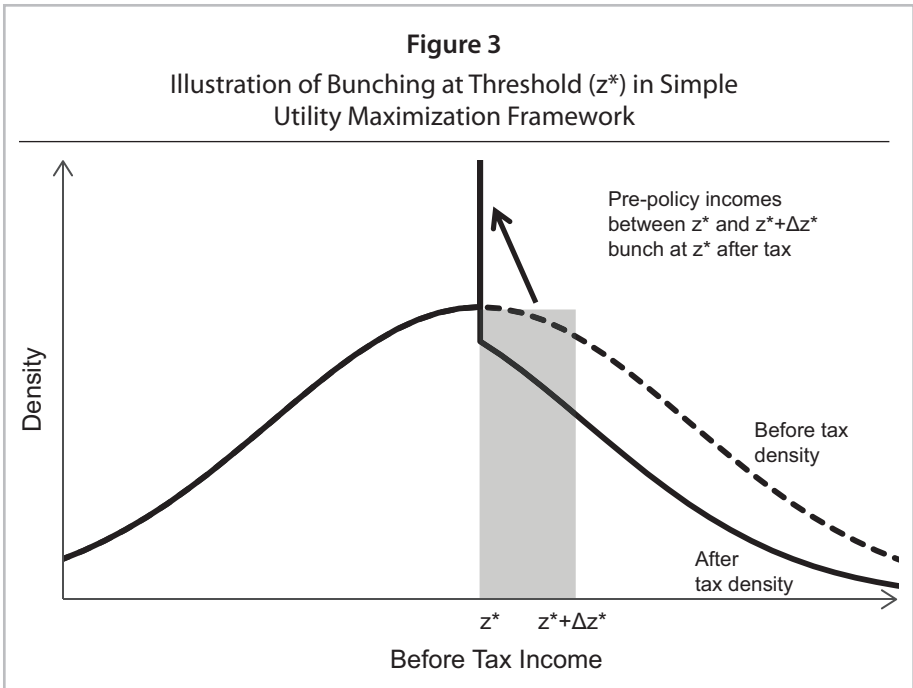
With perfect information and complete ability to choose MAGI, this framework would produce bunching at the threshold z^* (Figure 3). The kink has no effect on taxpayers with initial incomes below z^*, but it produces a leftward shift in the distribution of income among those with initial incomes above z^*. Saez (2010) extends this analysis to allow for adjustment frictions (e.g., people can only imperfectly adjust income or they have imperfect information about the location of the threshold) and shows that under certain simplifying assumptions, the amount of bunching near z^* provides a measure of the compensated elasticity of taxable income. If individuals are very sensitive to taxation (high elasticity), then there will be an unusually large mass of tax returns near the threshold.

There are many contexts in which such bunching may be observed. Saez (2010) shows that self-employed individuals' incomes tended to bunch at the level where the earned income tax credit starts to phase out. Wage earners showed no such response, which is consistent with the notion that the self-employed have more control over hours worked and taxable earnings, and self-employment income is not subject to third-party information reporting, making it easier to misreport on a tax return. Friedberg (2000), Song and Manchester (2007), Engelhardt and Kumar (2009), and others observe that older workers clustered to the left of the SSET exempt threshold. Chetty et al. (2011) examine bunching around large jumps in tax brackets in Denmark to measure the elasticity of taxable income in the context of search costs.

Our hypothesis is that if taxpayers are aware of the incentives created by the taxation of Social Security benefits, there should be a bump in the empirical distribution of tax

Figure 2
Effect of Introducing a Kink in the Budget Constraint

Panel A

slope = 1 − t

slope = 1 − 1.5*t

After Tax Income

Z*

MAGI

Panel B

After Tax Income

Z*   Z* + ΔZ

MAGI

Panel C

After Tax Income

Z*

MAGI

Figure 3

Illustration of Bunching at Threshold (z*) in Simple
Utility Maximization Framework
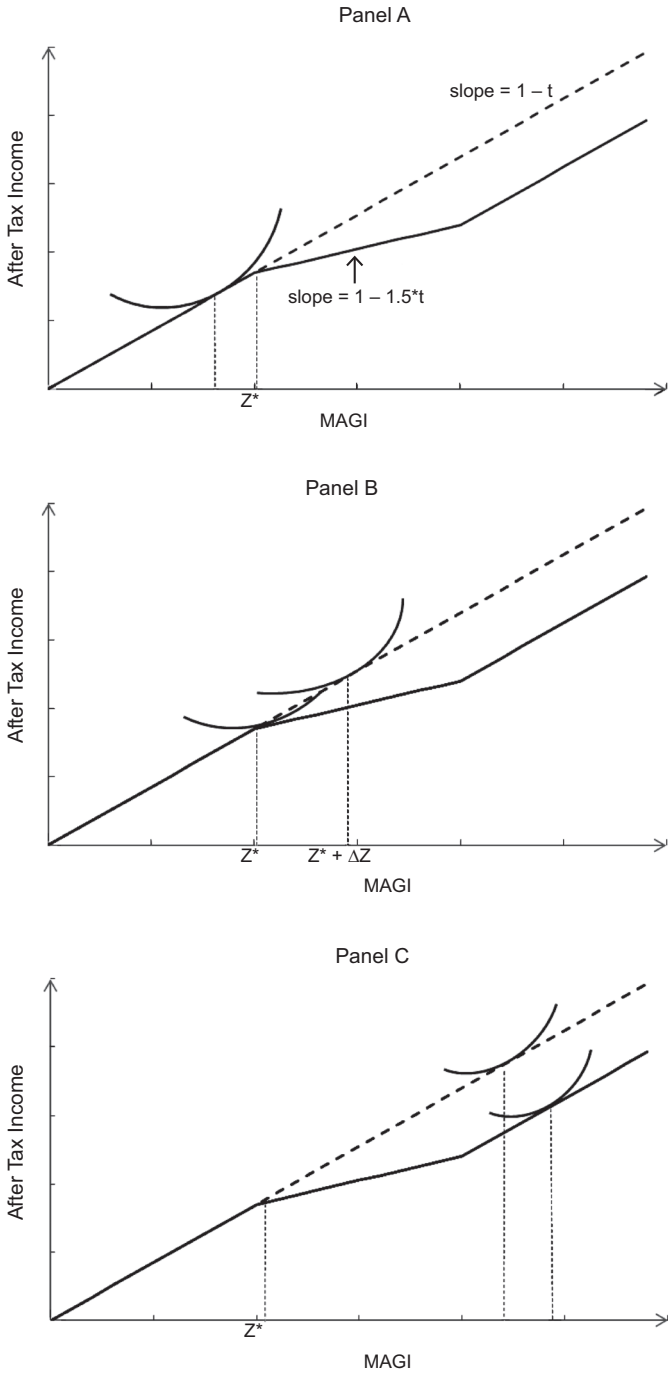
returns near the two thresholds for taxation. We would expect the bump to be more pronounced for those with income from self-employment.

B. Effects on Benefit Claiming

The tax treatment of benefits could also affect decisions about when to begin claiming Social Security. The claiming decision is extremely complex, even ignoring taxes. Coile et al. (2002) present nonlinear simulations for the case of a single earner. They find that men generally claim benefits too early compared with the optimal choice. That is, their expected present value of lifetime utility would often be greater if they delayed claiming. Shoven and Slavov (2012) find similar results based on data from the HRS. The exception would be someone who has a significantly shorter than average life expectancy.[9]

Accounting for the taxation of Social Security benefits vastly complicates the choice. The steeply rising marginal tax rate schedule might seem to create an incentive for

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[9] Munnell and Soto (2005) calculate the optimal age for claiming Social Security benefits for married couples, as a function of their relative retirement benefits and age difference. They also find that married men are claiming much earlier than optimal. For average-lived couples who maximize their expected present discounted value of Social Security benefits, married men should be claiming benefits at age 66 or later, and their wives should be claiming between ages 62 and 66.

people with modest amounts of other income to claim benefits early, getting a reduced benefit over more years. Individuals born after 1942 can reduce their annual benefit by 25 percent or more by claiming at age 62 rather than at the FRA and fully or partially avoid taxation of Social Security benefits. As Figure 4 shows, there is a range of other incomes at which smaller amounts of Social Security are nontaxable while larger benefit levels would be subject to some tax. As a result, the adjustment for delayed retirement might no longer be actuarially fair when taxes are considered.

On the other hand, some taxpayers may have an incentive to delay claiming Social Security benefits. If a worker reaches the FRA and expects to keep working for a few more years, after which his non-Social Security income would drop significantly, he may elect to delay claiming Social Security benefits if the future drop in income means that less of his benefits would be subject to tax. In this case, the after-tax value of delaying retirement is better than actuarially fair, even if the trade-off is neutral before tax.

But, in fact, for taxpayers who are financing marginal consumption expenditures out of taxable, non-annuitized retirement accounts such as traditional IRAs or 401(k) accounts, delaying claiming will generally be the optimal strategy when the taxation of Social Security benefits is considered (Carlson and Mahaney, 2007). This is because postponing receipt of Social Security, holding the time path of consumption constant, reduces the balances in taxable retirement accounts faster and earlier, and decreases the need to draw from the retirement account later, since the delayed retirement credit yields higher future Social Security benefits. Figure 5 illustrates one scenario at 2014 income tax parameters for a single taxpayer age 65 or older. Suppose the taxpayer could draw $40,000 out of retirement accounts with a $20,000 Social Security benefit or draw $30,000 with a $30,000 benefit, for a total pre-tax income of $60,000 in either case. However, taxable income is lower in the latter case because only a portion of Social Security benefits are included in taxable income and benefits make up a larger share of income. The tax falls 40 percent, from $7,181 in case 1 to $4,369 in case 2, for a total tax savings of $2,812.

The tax savings from this strategy vary with the amount of other income because of the phase-in schedule and shape of the marginal income tax rate schedule, but are always positive. Even at $50,000 or more of other income, where 85 percent of Social Security benefits are included in income, there are still tax savings of 15 percent of the marginal tax rate — 25 percent in the example — or $375 for every $10,000 shifted from savings to Social Security income. And the savings are repeated every year of the recipient's life. If Social Security pays the same rate of return as the retirement account, taxation of benefits favors delaying retirement. Carlson and Mahaney (2007) argue that Social Security will also tend to pay a higher expected return because its administrative costs are so much lower than for savings accounts, which makes draining the taxable account early optimal. This will be especially true for someone who expects to live longer than average. On the other hand, someone with a shorter than average life expectancy or especially high yielding assets in the retirement account could be better off claiming benefits early.

This discussion highlights that the effects of taxation on the optimal claiming age are very complex. Misperceptions might drive behavior differently than predicted by a

Figure 4

Effective Tax Rate on Social Security Benefits, by non-Social Security Income, 2014
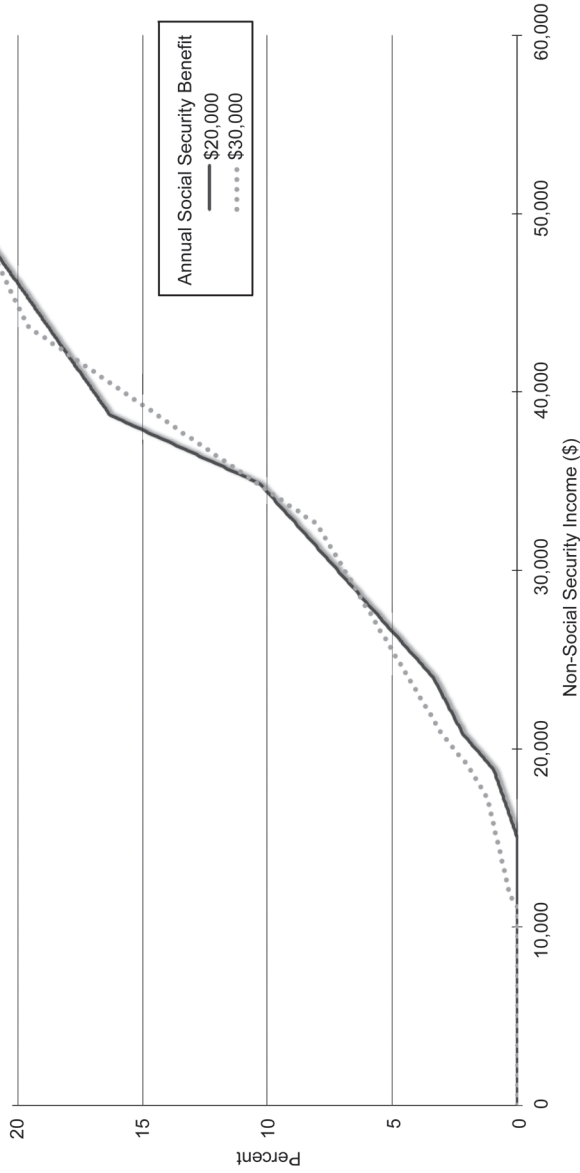
Note: Assumes single taxpayer age 65 or over who takes the standard deduction and has one personal exemption.

Figure 5

Total Income Tax ($), by non-Social Security Income for Two Social Security Benefit Levels
(2014 Tax Parameters)
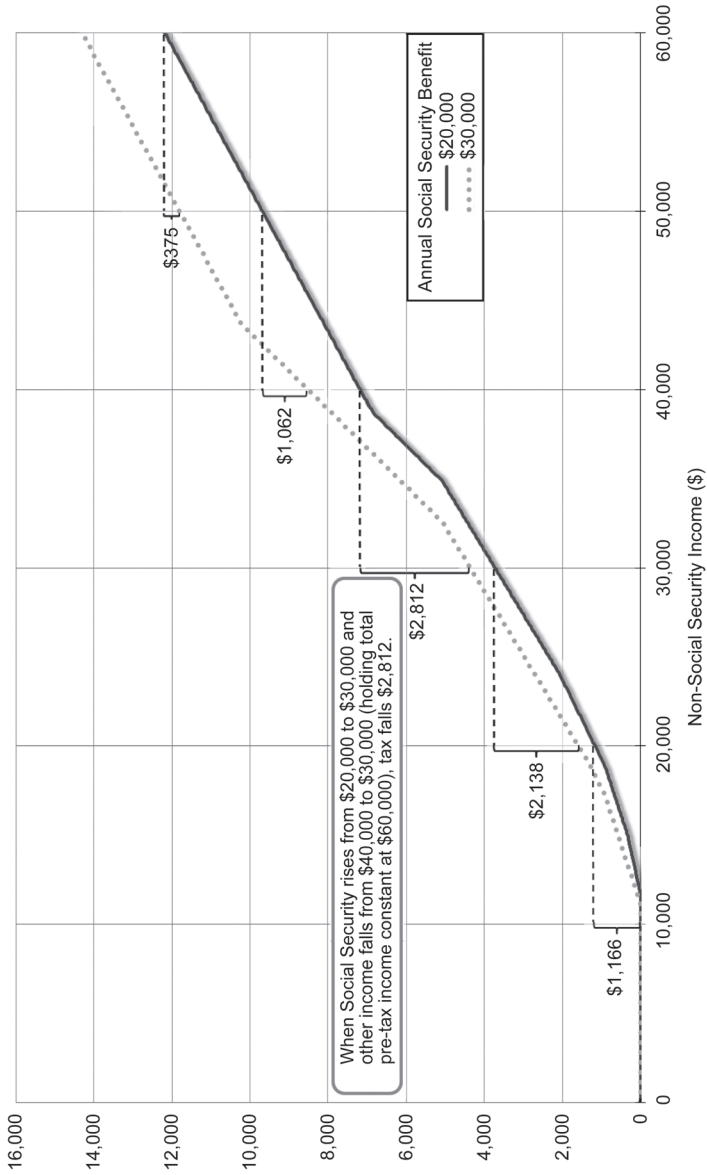
Note: Assumes single taxpayer age 65 or over who takes the standard deduction and has one personal exemption.

pure optimizing model. It is possible that people do not understand how the tax affects marginal tax rates, the incentives on labor supply, or the timing of benefits. If people ignore these incentives, then the tax may be a type of optimal tax — raising revenue with little or no effect on behavior. On the other hand, taxpayers may overreact to misunderstood incentives — magnifying the economic distortion.

V. DATA

To look for evidence of bunching, we use administrative data — the 1999 IRS Statistics of Income (SOI) Individual Edited Panel, which is a longitudinal dataset drawn from individual income tax returns and information returns.[10] The data comprise a panel of individuals from tax years 1999 to 2010, two more years than were available for our earlier study (Burman et al., forthcoming). The advantage of these data is that they provide an accurate measure of what is reported to the IRS on income tax returns — and thus tax status. They also allow us to study the behavior of self-employed individuals, those who previous research suggests would be the most responsive.

The panel has been augmented by matching all of the primary and secondary SSNs within the panel to the SOI-processed information returns databases for Forms W-2 (information on wages and withholdings), Forms 5498 (contributions to retirement accounts), Forms 1099-SSA (Social Security benefits), and Forms 1099-R (income from retirement accounts and pensions). Separate observations are created for primary and secondary taxpayers who were in the sample in 1999. The panel is a stratified random sample, which oversamples high-income returns. Sampling weights allow estimation of population aggregates.

We use information from several tax forms for the analysis. Our measure of gross Social Security benefits comes from Form 1099-SSA, an information return the Social Security Administration produces to report benefits for each recipient. Tax-exempt interest and the amount of Social Security benefits that are included in AGI come from Form 1040. Our dataset also includes reported self-employment income from Form 1040 Schedule SE.

Administrative data are not immune from measurement error. For example, self-employed taxpayers often misreport their income to the IRS.[11] These data, however, accurately reflect pre-audit information that taxpayers report to the tax authorities, and the resulting tax liability. Therefore, any behavioral response to the taxation of Social Security benefits should be evident on the tax return.

The sample starts with 112,823 records in 1999, but diminishes to 104,194 by 2010 (Table 1). We are primarily interested in the subsample of taxpayers age 62 and over, which includes 23,535 individuals in 1999 and 40,243 in 2010, reflecting an aging sample population. The weighted sample includes 153.6 million individuals in 1999, 28.6 million

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[10] For more information on the SOI Individual Income Tax Return Panel, see Weber and Bryant (2005). Pierce (2011) documents an extended version of the panel (through 2008).

[11] Based on audit data, only 43 percent of nonfarm proprietor income (i.e., small business income) was voluntarily reported on tax returns in 2001 (IRS, 2006).

Table 1

1999 SOI Edited Panel Sample Sizes, 1999–2010

	Total Sample		Subsample with Primary Taxpayer Age 62 or Over	
Tax Year	Unweighted (Thousand)	Weighted (Million)	Unweighted (Thousand)	Weighted (Million)
1999	112.8	153.6	23.5	28.6
2000	112.8	153.9	24.8	29.7
2001	112.8	154.2	26.0	30.6
2002	112.5	154.1	27.3	31.7
2003	112.1	153.6	28.5	32.6
2004	111.1	152.3	30.3	34.1
2005	110.0	150.5	31.9	35.4
2006	108.9	148.8	33.4	36.7
2007	107.8	147.0	34.7	37.8
2008	106.7	145.1	36.5	39.3
2009	105.4	143.3	38.6	41.3
2010	104.2	141.4	40.2	43.0

Note: Total sample excludes returns receiving disability payments and those where the primary taxpayer is younger than age 23.

of whom are age 62 and over. Attrition within the panel is primarily due to death, but taxpayers may also drop out in years in which their income falls below the filing threshold. Because our sample has been supplemented with information returns, particularly earnings from the W-2 and Social Security benefit payments from Form 1099-SSA, we continue to observe almost all individuals who are not required to file an income tax return.

All told, the panel includes 890,279 observations for married individuals and 426,992 for singles, representing multiple annual observations for most individuals (Table 2). Applying sample weights, that represents 1,070 million married filers and 728.1 million single filers. Most of the sample is too young to collect Social Security benefits (Table 1), as only 22.2 percent of married individuals and 19.8 percent of singles have Social Security benefits.[12]

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[12] Younger adults may qualify for Social Security disability benefits, but those individuals have been excluded from our sample.

Table 2

Summary Statistics, Pooled Sample: 1999–2010

	Married		Single	
	Unweighted	Weighted	Unweighted	Weighted
Number of Returns (thousand)	890.3	1,070	427.0	728.1
Self-employed (%)	27.8	18.9	9.5	7.2
With SSB income (%)	24.9	22.2	21.4	19.8
Social Security Benefit ($)	25,331	21,230	15,852	14,287
SSB in AGI ($)	15,398	9,065	5,526	3,051
MAGI ($thousand)	2,981.2	111.8	974.1	37.1
Wage earners				
Wage income ($thousand)	473.6	76.7	103.8	26.6
Self-employed				
Self-employment income ($thousand)	432.1	37.8	332.3	20.1
Wage income ($thousand)	1,016.3	66.2	599.5	17.1

We also use the panel to look at the timing of Social Security claiming. For this exercise, we need to impute the amount of benefits for which taxpayers would be eligible if they first claimed at age x, where $62 \leq x \leq 69$. We select a sample of filers who are observed at ages 62 and 71 (i.e., they turn 71 in 2008, 2009, or 2010). We calculate the primary insurance amount (PIA) based on the actual benefit claimed in their first full year of receiving Social Security by backing out the delayed retirement credit — 8 percent per year — for those who start claiming after age 62 and inflation indexing adjustments. Then we create a predicted Social Security benefit each year by applying the delayed retired credit and the indexing factor. This instrument avoids the problem of endogeneity of benefit levels with the retirement decision and will be an accurate estimate if the PIA does not change much as workers choose to work additional years after age 62, which is equivalent to assuming that additional years' wages are approximately equal to the average indexed monthly earnings (AIME).

VI. EFFECTS ON INCOME

Figure 6 reports the distribution of MAGI relative to the first exempt amount calculated using the IRS Panel. A value of −1,000 on the x-axis means $1,000 below the

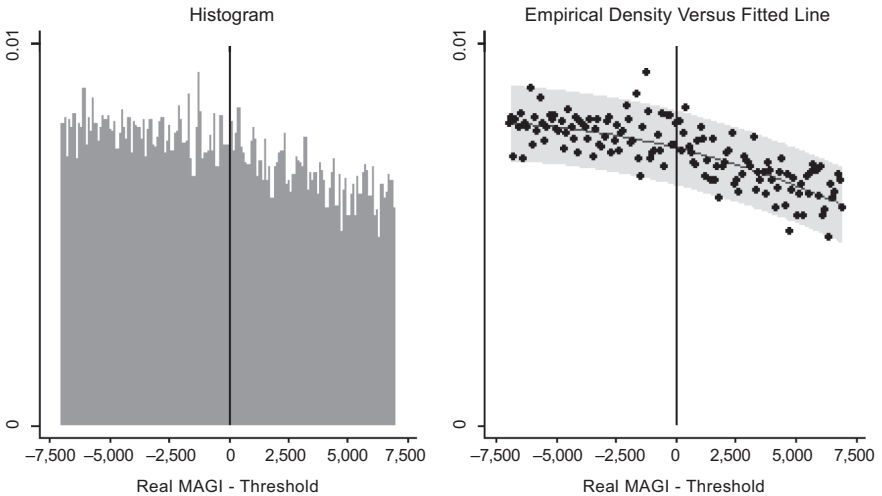## Figure 6

MAGI Distribution Around the First Threshold

All Returns

Histogram | Empirical Density Versus Fitted Line
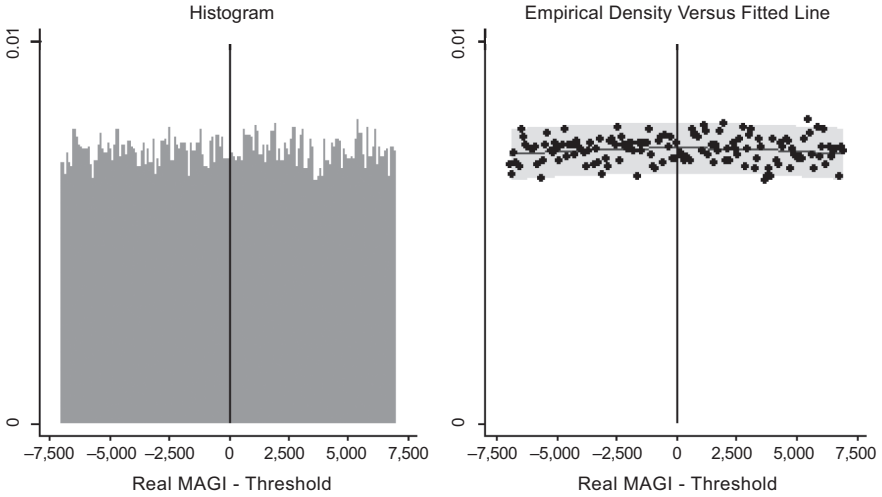
Note: Fitted line and 95% Confidence Interval (CI) based on quadratic function excluding [–1,000, 1,000]
N = 86,271,759, weighted.

All Returns with SSB

Histogram | Empirical Density Versus Fitted Line

Note: Fitted line and 95% CI based on quadratic function excluding [–1,000, 1,000]
N = 197,214,375, weighted.

Figure 6 (Continued)

MAGI Distribution Around the First Threshold

Wage Earners with SSB for more than 1 Year

Histogram

Empirical Density Versus Fitted Line

Real MAGI - Threshold

Real MAGI - Threshold
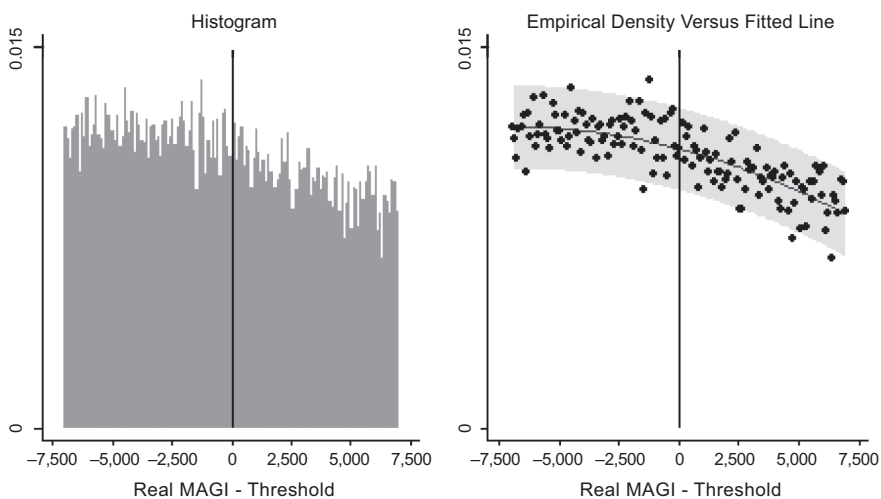
Note: Fitted line and 95% CI based on quadratic function excluding [−1,000, 1,000]
N = 5,518,554, weighted.

Self-Employed with SSB for more than 1 Year

Histogram

Empirical Density Versus Fitted Line

Real MAGI - Threshold

Real MAGI - Threshold
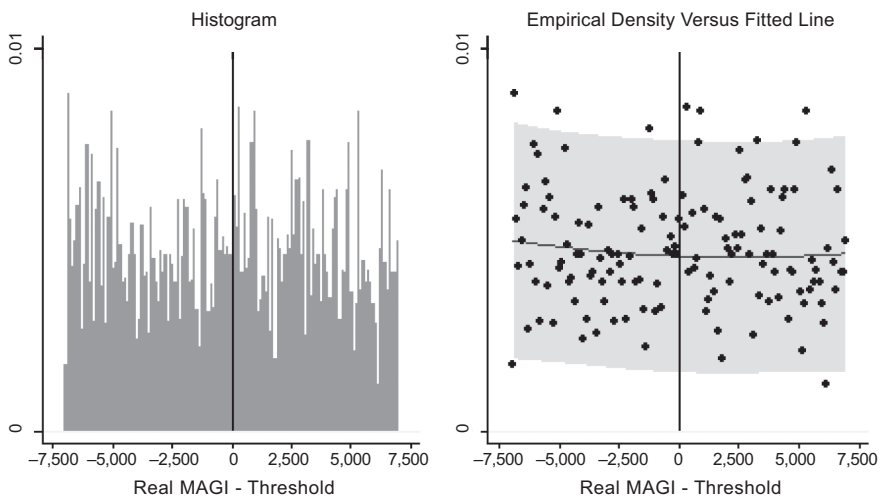
Note: Fitted line and 95% CI based on quadratic function excluding [−1,000, 1,000]
N = 69,912,230, weighted.

Figure 7

MAGI Distribution Around the First Threshold by Marital Status

Single Self-Employed with SSB

Histogram

Empirical Density Versus Fitted Line

Real MAGI - Threshold

Real MAGI - Threshold
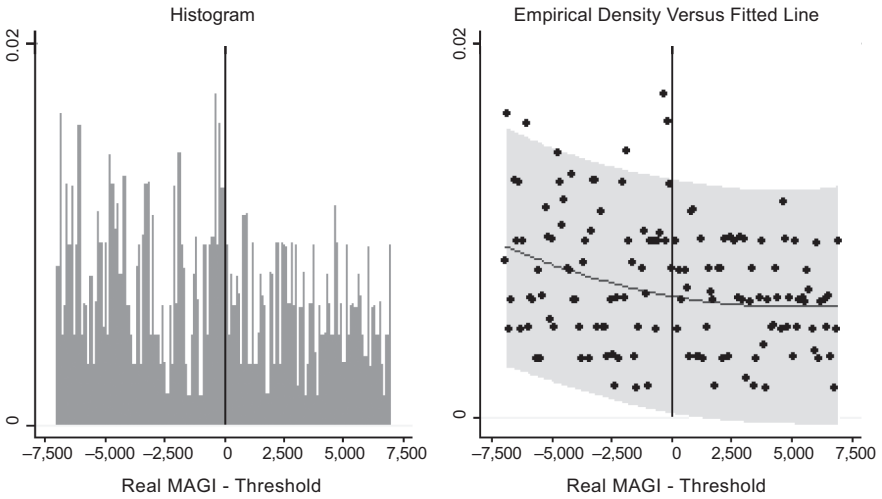
Note: Fitted line and 95% CI based on quadratic function excluding [−1,000, 1,000]
N = 1,273,729, weighted.

Single Wage Earners with SSB

Histogram

Empirical Density Versus Fitted Line

Real MAGI - Threshold

Real MAGI - Threshold
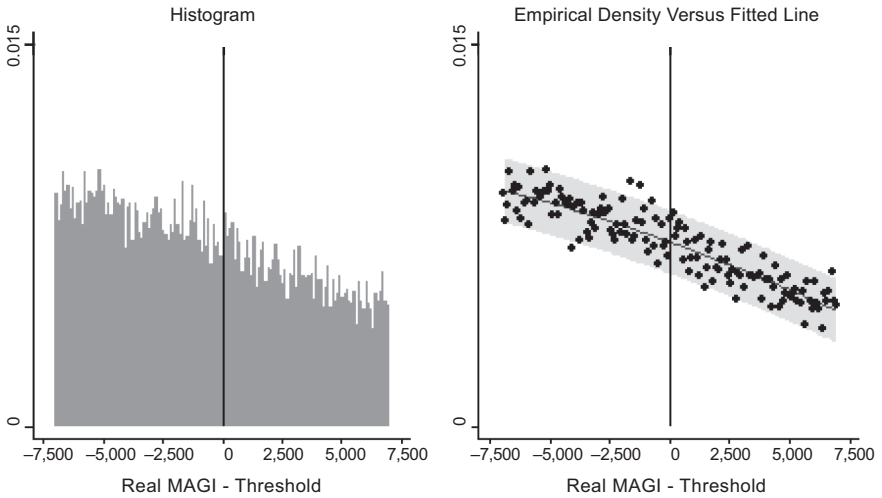
Note: Fitted line and 95% CI based on quadratic function excluding [−1,000, 1,000]
N = 33,761,097, weighted.

Figure 7 (Continued)

MAGI Distribution Around the First Threshold by Marital Status

Married Self-Employed with SSB

Histogram

Empirical Density Versus Fitted Line

Real MAGI - Threshold

Real MAGI - Threshold
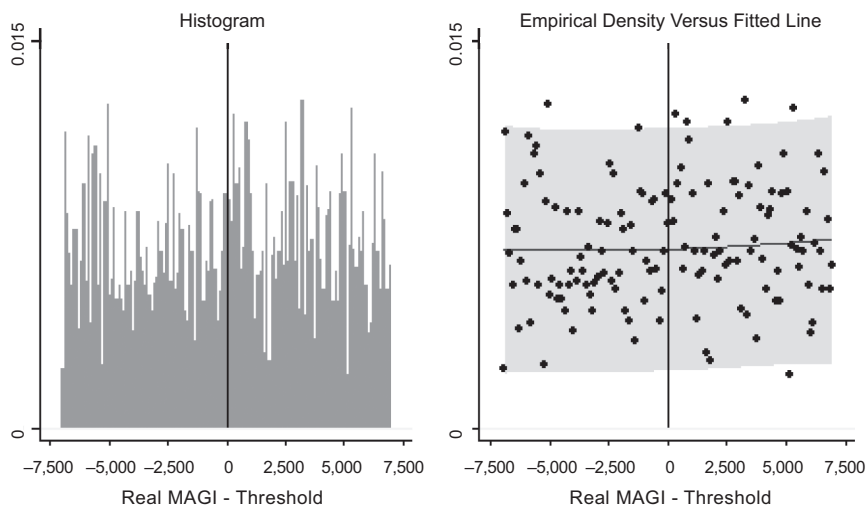
Note: Fitted line and 95% CI based on quadratic function excluding [–1,000, 1,000]
N = 5,289,911, weighted.

Married Wage Earners with SSB

Histogram

Empirical Density Versus Fitted Line

Real MAGI - Threshold

Real MAGI - Threshold
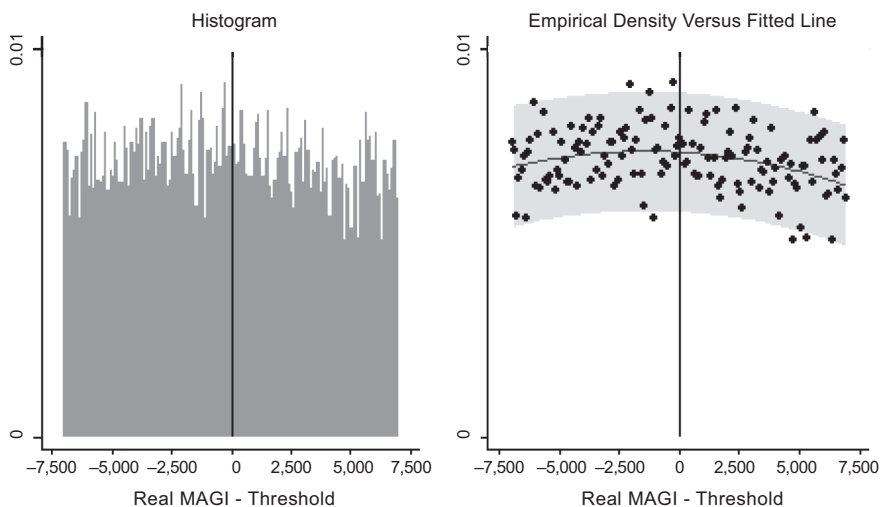
Note: Fitted line and 95% CI based on quadratic function excluding [–1,000, 1,000]
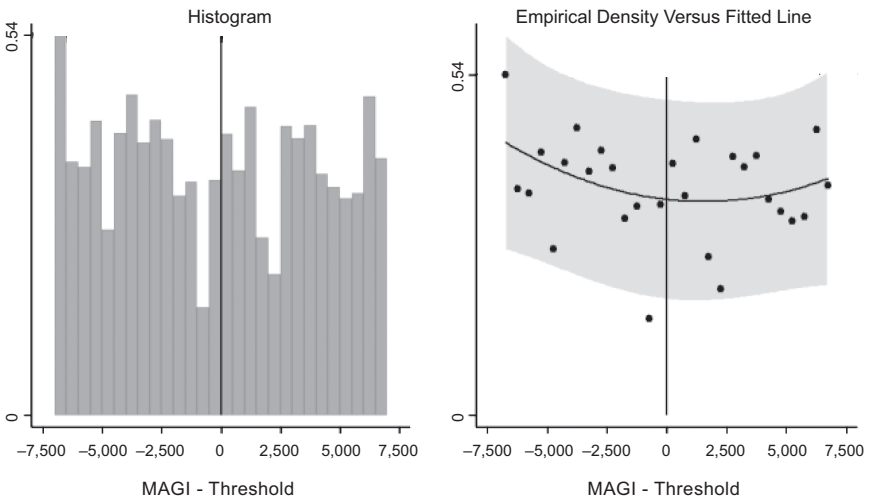N = 45,947,022, weighted.

Figure 8
MAGI with Predicted Social Security Benefits

Overall
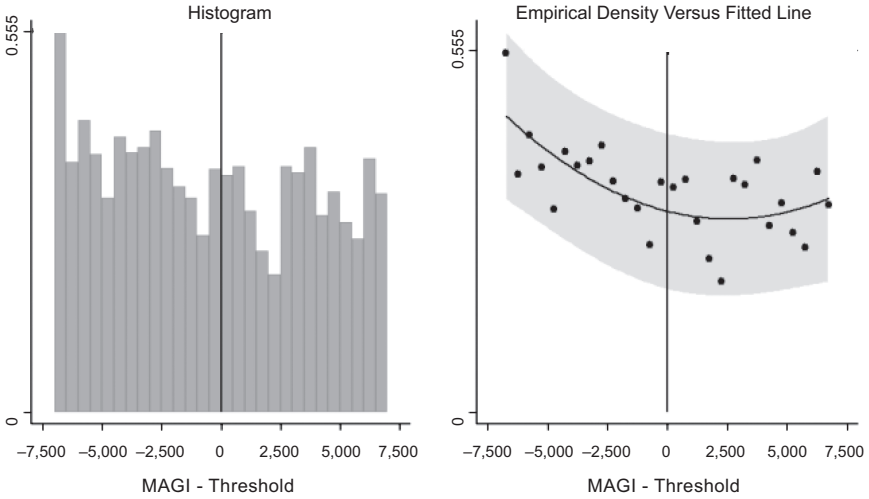
Note: Fitted line and 95% CI based on quadratic function excluding [−1,000, 1,000]

N = 2,638,917, weighted.

Married Filing Jointly

Note: Fitted line and 95% CI based on quadratic function excluding [−1,000, 1,000]

N = 1,632,516, weighted.

Figure 8 (Continued)
MAGI with Predicted Social Security Benefits

Single Taxpayers

Note: Fitted line and 95% CI based on quadratic function excluding [–1,000, 1,000]

N = 1,006,401, weighted.
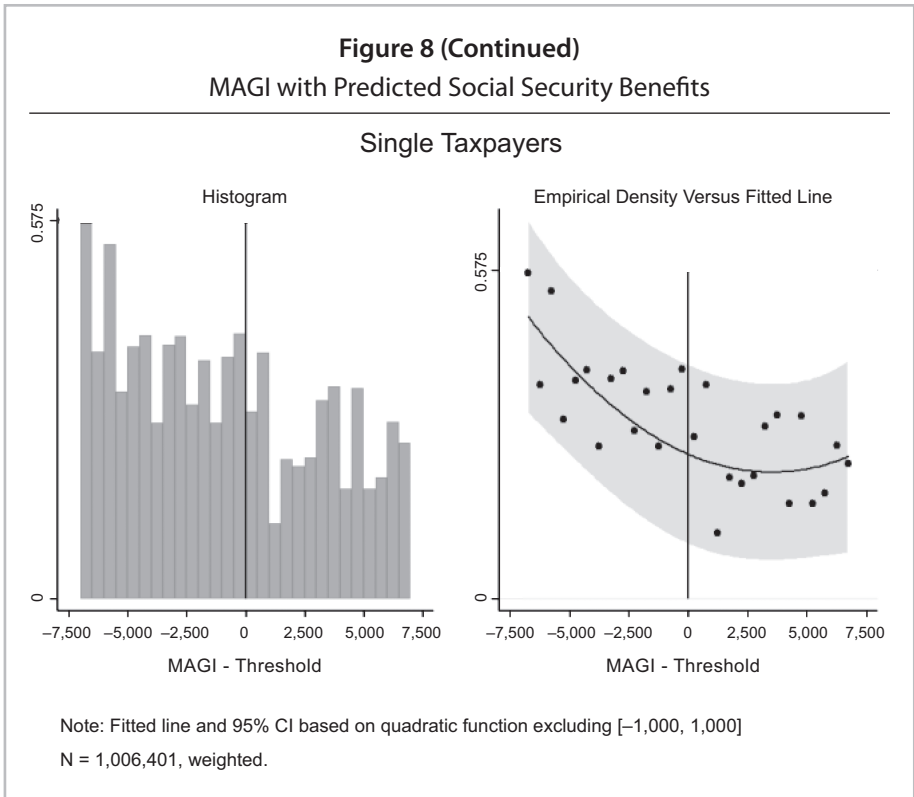
threshold. Most of the panels are restricted to the sample of taxpayers who have been claiming Social Security benefits for at least 1 year under the logic that it may take time to understand the tax rules. Results are very similar if that restriction is lifted, and also are similar at the second threshold for taxation (as shown in the Appendix of Burman et al., forthcoming). Relative MAGI is measured in 2010 dollars. All of the histograms are weighted by population weights; unweighted histograms (not shown) are similar.

To examine evidence of bunching statistically, we compare the empirical density, represented by the dots in the scatter plot, with smoothed distributions, indicated by the solid line, of MAGI in the vicinity of the threshold in the right panel of each figure. The smoothed distribution is fitted by a quadratic form of MAGI, excluding the observations within $1,000 of the threshold. The gray band indicates the 95-percent confidence interval, reflecting the underlying variability of the data. The simple empirical test of bunching examines whether observations near the threshold fall outside the confidence band (reflecting normal sample variability).

Unlike the histograms for the SSET, EITC, or Danish tax system reported in earlier studies, there is no visual evidence of bunching near the MAGI threshold, indicated by the vertical line at zero, either for all taxpayers or for the self-employed subsample.
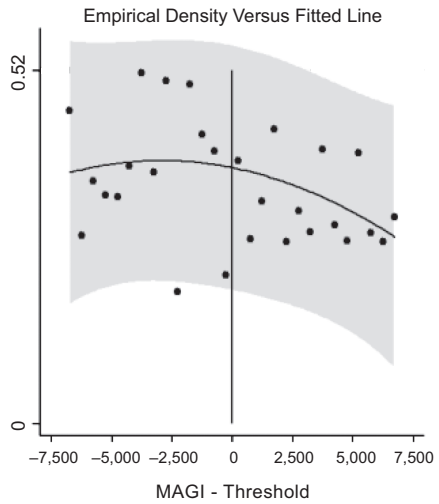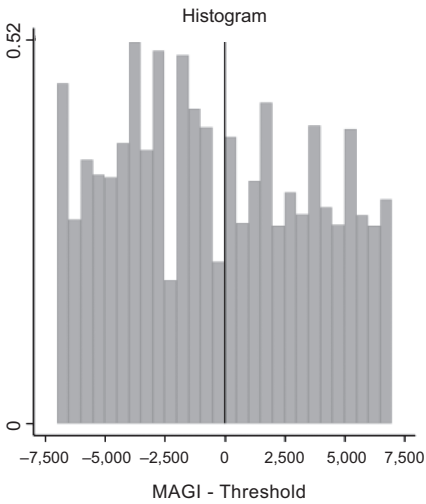
Figure 9
## MAGI Excluding Social Security Benefits

Overall
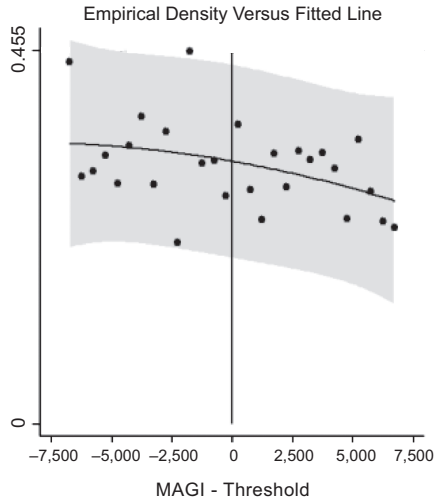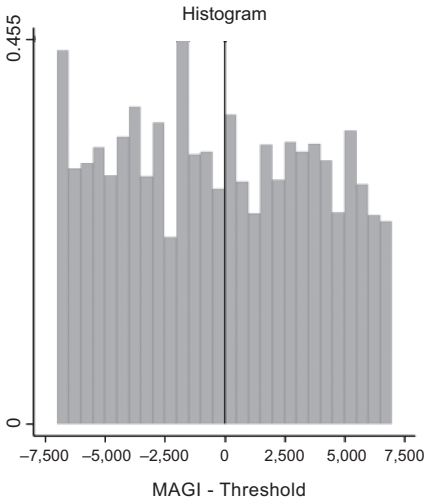
Note: Fitted line and 95% CI based on quadratic function excluding [−1,000, 1,000]

N = 2,890,125, weighted.

Married Filing Jointly

Note: Fitted line and 95% CI based on quadratic function excluding [−1,000, 1,000]

N = 1,766,930, weighted.

Figure 9 (Continued)
MAGI Excluding Social Security Benefits

Single Taxpayers

Note: Fitted line and 95% CI based on quadratic function excluding [−1,000, 1,000]
N = 1,123,195, weighted.
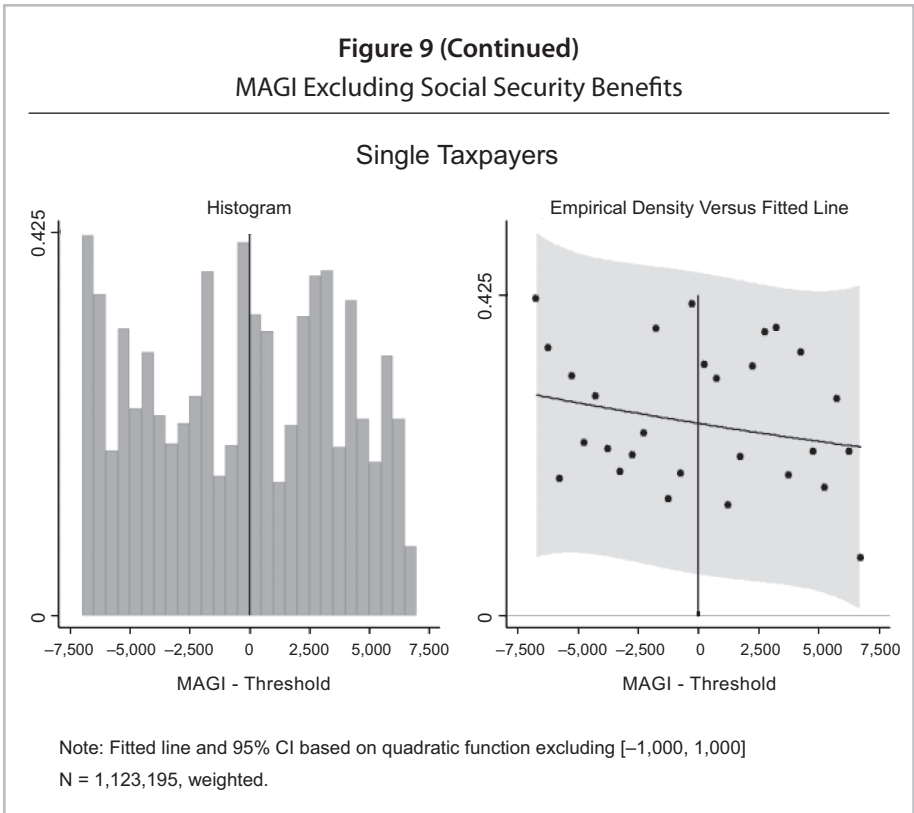
It is possible that married and single taxpayers respond differently to the taxation of benefits. Single taxpayers have an easier optimization problem to solve so this is a cleaner test of the bunching hypothesis. Presumably singles have more control of their own MAGI than individual spouses have in managing joint MAGI. Figure 7 shows the MAGI distribution separately for married and single households. Although there is no evidence of bunching for wage earners, there is a hint of bunching to the left of the threshold for single taxpayers with income from self-employment.

All told, the evidence would seem to allay concerns that taxpayers might be over-reacting to the taxation of Social Security benefits. Responses appear to be modest, at most. There is only weak evidence of response for single taxpayers with self-employment income.

VII. EFFECTS ON THE CLAIMING DECISION

As noted, the taxation of Social Security provides an incentive to delay claiming until age 70 for all people other than those with much shorter than average life expectancies

(and, in some cases, married individuals who can claim spousal benefits).[13] However, notwithstanding those incentives, most workers still claim benefits by the time they reach FRA (Johnson, Smith, and Haaga, 2013). Goodman and Liebman (2008) speculate that misperceptions about the economic incentives could distort behavior.

To examine that possibility, we look at claiming decisions in our panel of older taxpayers. We look at the proportion of individuals who first claim Social Security benefits with MAGIs near the threshold for taxation under two assumptions: Social Security benefits equal to the predicted level, and Social Security benefits equal to zero. Figure 8 shows whether, given other income, the last dollar of Social Security benefits would be subject to tax, and Figure 9 shows whether the taxpayers would have any benefits taxed.

Much like with income, we find little evidence of the taxation of benefits having an effect on the timing of Social Security claiming. Figure 8 illustrates no bunching around the threshold for whether the last dollar of benefits is taxed. This is true for the overall sample as well as for the married and single filer subsamples.

While Figure 8 is the correct model if individuals decide to claim Social Security benefits based on their marginal tax rate, determining one's marginal tax rate is not easy. Individuals may find it is easier to determine if their first dollar of Social Security benefits is subject to taxation, and decide whether to claim benefits based on this proxy for their marginal tax rate. However, Figure 9 again illustrates no bunching of the empirical distribution for the first dollar of Social Security benefits being subject to taxation, overall or by filing status.

VIII. CONCLUSION

The taxation of Social Security benefits creates high effective marginal tax rates, which gives older workers an incentive to reduce their labor and non-labor incomes below the taxable threshold. However, the tax rules are quite complex. While in theory taxpayers have an unambiguous incentive to reduce income in the neighborhood of the threshold, the practical effect of these complex incentives is an empirical question. If taxpayers respond to those incentives, there could be significant efficiency costs as well as implications for Social Security's and the nation's finances as older workers would be paying less income and payroll taxes. Moreover, the issue is important as the nation considers tax reform options, which might include changing the way Social Security is taxed.

This study uses administrative data from tax and information returns to examine the distribution of Social Security recipients in the neighborhood of the taxation thresholds. There is little evidence of a response. We examine married and single individuals with and without self-employment income. Only single, self-employed people show any evidence of reducing income to avoid the tax and the response is much smaller and less

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[13] A lower-earning spouse may often find it advantageous to claim spousal benefits when the spouse reaches FRA while the primary taxpayer suspends claiming and continues to accumulate delayed retirement credits (Shoven and Slavov, 2012).

precisely estimated than the response Saez (2010) found to the kink in the EITC benefit schedule. In addition, we find no direct evidence that taxpayers alter their receipt of Social Security benefits in response to the threshold for taxation of benefits. Overall, the findings suggest that older taxpayers have little understanding of the incentive effects of taxing Social Security.

In some ways, this is an encouraging development as it suggests that the taxation of Social Security benefits may affect behavior similarly to a lump-sum tax. Page and Conway (2011) measure an income effect, which is unavoidable, but we find no evidence of other distortions. However, it is possible that the complex tax regime affects taxpayer welfare by adding to uncertainty. Taxpayers may be surprised when they learn about how the decision to claim benefits affects their tax liability and regret the decision. More generally, by adding uncertainty to tax liabilities, the tax can reduce welfare more than an equivalent (certain) lump-sum tax.

In future work, we plan to look at how taxation affects labor force participation and the timing of capital gains realizations; capital gains face a much larger proportional rise in tax rates than other income does, and the timing of capital gains realization is comparatively easy to manipulate.

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DISCLOSURES

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