

Implicit Taxes on Work from Social Security and Medicare

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Executive Summary

Implicit taxes are present in many government programs and can create substantial work disincentives. Traditionally, attention has focused on implicit taxes that are created when welfare benefits are phased out as income or wealth increases. However, the design of Social Security and Medicare also gives rise to implicit taxes, particularly for older workers.

The implicit tax created by Social Security is the payroll tax minus the present value of the expected incremental benefits associated with the earnings. While the payroll tax to fund the retirement portion of Social Security is 10.6 percent for workers of all ages, the implicit tax varies considerably over a worker's career because additional earnings translate nonlinearly into additional retirement benefits. We demonstrate that workers at the start of their careers experience lower implicit tax rates, as the increase in Social Security benefits as a result of additional work offsets a relatively large fraction of the payroll tax. However, for workers who are closer to retirement, additional work translates into little or no additional benefit, and in many cases, the payroll tax functions as a pure tax on work.

The main implicit tax in Medicare lies in the Medicare as Secondary Payer (MSP) policy, which requires Medicare to be a secondary payer for Medicare-eligible workers who work for an employer with a health plan and twenty or more employees. Medicare's expenses are then effectively reduced by the cost of health care for individuals who have access to employer-sponsored health insurance. Thus, these individuals effectively forego the Medicare benefits that they would have received if they had not been working.

A combination of policies can reduce average implicit tax rates on older workers by as much as 45 percent. These policies include two modifications to the Social Security benefit calculation (using 40 years rather than 35 in calculating Social Security benefits, and distinguishing between workers with high earnings and short careers and low earnings and long careers), exempting workers who have achieved 40 years of covered employment from the Social Security and Medicare payroll tax, and repealing MSP. Given the relatively elastic labor supply of older workers, the efficiency gain from these policies could be considerable.

I. Introduction

The idea of implicit taxes originates from the most basic of economic principles – that marginal effects are often more important determinants of behavior than average effects. Any means-tested benefit involves an implicit tax because it is phased out as income or wealth increases. This point was dramatically emphasized by Aaron (1973), who found that low-income welfare recipients faced the highest marginal implicit tax rates in the economy, sometimes approaching or exceeding one hundred percent, even though the same individuals effectively faced negative average taxes through their receipt of government support. Each means-tested program for the poor (such as Medicaid, public housing, welfare, and food assistance) has its own implicit marginal tax rate on earnings, and adding these various implicit tax rates together can lead to a substantial total effective marginal tax rate (Dickert, Houser, and Scholz 1994). The underlying principle is that it is difficult, if not impossible, to avoid high implicit taxes if the government is generous with the poor and phases out transfers from people with higher incomes. Even today, after the welfare reform of the 1990s, the poor often face the highest marginal tax rates in the economy. This fact has led to substantial interest among the research community in the work disincentive effects of welfare and income support programs (for a survey, see Moffitt 2002).

While the largest literature on implicit taxes involves welfare and income support payments, high implicit tax rates are present even outside of traditional welfare programs. For example, financial aid for college almost always involves an implicit income and wealth tax (Edlin (1993), Dick and Edlin (1997) and Feldstein (1995)) and the earned income tax credit reduces the return to working as the benefits phase out (for a discussion, see Eissa and Hoynes 2006). Our focus in this paper is on implicit tax rates in Social Security and Medicare, which

tend to be particularly high for older workers with long careers. We quantify these implicit tax rates and present evidence that suggests the labor supply of older workers is particularly sensitive to take home pay and therefore may be responsive to these implicit taxes.

Our analysis of Social Security focuses only on the retirement benefit; we ignore survivor and disability benefits. The retirement benefit is financed by a payroll tax of 10.6 percent on the first \$106,800 earned in 2010. Technically, 5.3 percent is paid by the employee and another 5.3 percent is paid by the on the employer, although the true burdens depend on the elasticities of labor supply and demand. A common assumption is that workers bear both halves of the Social Security payroll tax, an assumption that can be justified if labor markets are competitive and labor demand is perfectly elastic. But regardless of the incidence, it is the total tax wedge (employer and employee shares) that determines the disincentive effect and excess burden of the tax. Therefore, we focus on the total tax wedge in this paper.

The implicit taxes of Social Security are relatively easy to describe. The implicit tax created by Social Security is not simply the total payroll tax; it is the payroll tax minus the present value of the expected incremental benefits associated with the earnings. For example, if someone earned \$50,000 in a particular year and paid \$5,300 in Social Security payroll taxes (both halves), but received \$4,300 in incremental present value of future benefits because of these taxes (or “contributions”), we would say that his or her net tax for the year was \$1,000 and the implicit tax on earnings was 2 percent. As we will demonstrate, the incremental benefit that one gets from an extra year of earnings varies enormously, depending on one’s circumstances. For instance, a worker is ineligible to receive retirement benefits until he or she has worked 10 years. Therefore, the incremental benefit of completing the 10th year of work is enormous, and the implicit tax rate is generally negative in that year. However, implicit tax rates are much

higher for workers nearing the end of their careers. Because Social Security only considers the highest 35 years of indexed covered earnings, the incremental benefits for years 36 and beyond are typically relatively low and in many cases zero.

The Medicare program contains two features which lead to a tax wedge for many workers. First, in order to qualify for Medicare at age 65, workers need to have a history of a minimum of 10 years of covered employment. The Medicare payroll tax rate (once again split between employer and employee) is 2.9 percent. Unlike the Social Security payroll tax, Medicare taxes apply to all labor earnings, not just the first \$106,800. Once a worker has enough covered work history to qualify for Medicare, further earnings do not enhance the future Medicare package that he or she will receive, and thus the 2.9 percent tax is a pure tax on work.

Starting at age 65 there is a much bigger implicit tax on working because of legislation known as Medicare as a Secondary Payer (MSP). If a Medicare-eligible worker (i.e., aged 65 or over) works for an employer with twenty or more employees and the employer offers health insurance to any of its workers, then Medicare acts as a secondary payer. Generally, because the employer-sponsored plan is the first payer for all health expenses and most employer-sponsored plans are at least as generous as Medicare, Medicare pays nothing in these situations.

MSP gives rise to an implicit tax because an employee working at a firm which offers health insurance to its employees effectively foregoes benefits that he or she would have received if he or she had not been working. These workers are in exactly the same situation as low-income workers who earn just enough to be disqualified for Medicaid. If labor demand is perfectly elastic, cash compensation is reduced by the cost of the employer-provided health insurance, and wages for many 65 and over workers are reduced by the amount of health insurance coverage even though they are otherwise eligible for Medicare. If labor demand is not

perfectly elastic and the firm bears a portion of the cost of offering health insurance benefits to workers 65 and over, MSP increases the cost of hiring Medicare-eligible workers at these firms. Regardless of who bears the cost of employer-provided health insurance, Medicare as secondary payer amounts to a large implicit tax wedge, one that becomes a larger proportion of total compensation for those with fewer skills who earn lower wages. The implicit taxes of Social Security and Medicare are additive in the sense that many people 65 and over face the full Social Security payroll tax *and* lose their Medicare entitlement if they choose to work.

The outline of the paper is as follows. Section II describes the implicit taxes associated with Social Security and Medicare in more detail. In Section III, we analyze the impact of a set of policies that could potentially reduce the implicit taxes of these two programs. Finally, in Section IV, we present a back-of-the envelope estimate of the impact of the set of policies described in Section III on the labor supply of older workers. Section V concludes.

II. The Implicit Taxes on Social Security and Medicare

A. Social Security

As described above, the implicit tax on earnings created by Social Security depends on the manner in which benefits are determined. Social Security benefits are paid out in the form of an inflation-indexed life annuity. The computation of a worker's initial monthly benefit begins with the worker's entire history of covered earnings. Earnings that occurred prior to age 60 are multiplied by the ratio of the average wage when the participant was 60 to the average wage when the earnings were earned. For example, consider an individual who is age 62 in 2010. This individual's earnings in 1970, at age 22, would be multiplied by 5.7942, the ratio of the average wage in the economy in 2008 to the average wage in 1970. The earnings that occur at

60 or after are not indexed. After the indexing process, the highest 35 years of indexed earnings are identified, totaled and divided by 420, the number of months in 35 years. The result is the participant's average indexed monthly earnings (AIME), a measure of lifetime average real earnings. Importantly, if someone works less than 35 years, some of their highest 35 years of indexed earnings are simply entered as zeros in the calculation.

The next step in computing a person's initial monthly benefit is to calculate the Primary Insurance Amount (PIA), which is the amount that a single person would receive if he or she were to commence benefits at the age of full benefits (currently 66). The formula for determining PIA depends only on the AIME. For 2010, the formula is:

$$\text{PIA} = 90\% \text{ of first } \$761 \text{ of AIME} + 32\% \text{ of AIME between } \$761 \text{ and } \$4,586 + 15\% \text{ of the AIME over } \$4,586$$

The two dollar amounts in the formula (\$761 and \$4,586) are referred to as "bend points" and are indexed annually to changes in average wage rates. If someone retires at an age earlier or later than the age of full benefits, the initial monthly benefit is actuarially adjusted according to a formula.

The three different rates in the PIA formula (90, 32, and 15%) imply that incremental earnings translate into incremental benefits quite differently depending on previous work history. The increase in AIME translates nonlinearly into an increase in PIA, with low-AIME workers receiving the greatest payoff from additional earnings. In their 11th year of work, middle and low-income workers would generally still find themselves in the 90 percent PIA formula bracket. For them, the incremental benefits associated with the earnings in their 11th year of their career have a higher present expected value than their incremental payroll tax, and therefore, the old-age portion of the Social Security system amounts to a work subsidy. With further work, they

will advance to the segment of the PIA formula with a multiplier of 32 percent, meaning incremental AIME only translates to incremental PIA at the 32 percent rate. Changing the multiplier from 90 percent to 32 percent reduces the incremental benefits enough to change the Social Security system from a subsidy to a tax.

Those with sufficiently high earnings and sufficiently long careers will eventually earn income subject to the 15 percent multiplier. Once the translation from AIME to PIA reduces to 15 percent, the connection between additional AIME and additional initial benefits is only one-sixth as strong as it is in the 90 percent segment. Finally, after reaching 35 years of work, additional work only increases the AIME calculation to the extent that earnings are greater than the lowest amount of indexed earnings in the worker's career and therefore may or may not increase the PIA number.

In previous work (Goda, Shoven and Slavov 2008), we captured the pattern of implicit tax rates for workers with stylized careers and earnings patterns. We consider a set of stylized workers who begin working at age 20 and earn either the 10th percentile wage for their cohort, the average wage, the 90th percentile wage, or the maximum amount subject to the Social Security payroll tax. They work without interruption until the age of full benefits, commonly referred to as the normal retirement age. These workers therefore have relatively long work careers of 45 years. They do not experience the kind of work interruptions and wage volatility that impact many actual workers. The implicit tax rate at any given age is defined as the increase in the present value of taxes minus the increase in the present value of benefits, as a fraction of the worker's current salary.¹

Figure 1 shows the pattern of implicit tax rates faced by the stylized workers. Both the low earner and the middle earner are still in the 90 percent segment of the PIA formula when

¹ We refer the reader to Goda, Shoven, and Slavov (2008) for additional details of this computation.

they first appear on the left hand side of the graph after working their 11th year. The Social Security program is actually subsidizing their work while in this PIA segment. The subsidy gets greater as their career lengthens because they are closer to retirement age and receiving their benefits as an indexed life annuity. However, the subsidy from continued work changes to a tax when these workers advance to the 32 percent segment of the PIA formula. The jump in the implicit tax rate is almost precisely 10 percentage points. It occurs at year 14 for the average-earning worker and year 28 for the 10th percentile worker. The top earner, who always makes the maximum amount subject to Social Security payroll taxes, never experiences the 90 percent PIA segment and starts at the 32 percent segment. This worker jumps to the 15 percent segment in the 22nd year of his or her career.

All workers experience an increase in the implicit tax rate at the 36th year of their career, and all face a rate of about 10.6 percent by the 45th year. The reason for the increase in the 36th year is that before a worker has accumulated 35 years of work, a year of covered earnings is replacing a zero in the AIME calculation. Beginning in year 36, the year of covered earnings either may not increase the AIME because it is not one of the highest 35 years of indexed earnings. If it does increase AIME, it only counts fractionally by replacing a non-zero earnings year in the computation. One implication of this is that part-time work beyond year 35 will often not enter the AIME computation, and the Social Security payroll tax is a pure tax in that case. The difference in implicit tax rates for low and middle stylized earners between the early part of their careers and the late part of their careers is approximately 16 percentage points.

[Figure 1 approximately here]

Figure 2 shows the distribution of ages at which women and men reach 35 years of covered earnings and experience this increase in their implicit tax rates. The source of the data is

the Social Security Benefits and Earnings Public Use File, which contains the earnings histories for a one-percent random sample of Social Security recipients in December 2004. The distributions are strikingly different across genders for these cohorts. Due to career interruptions, women accumulate 35 years of experience at a wide range of ages between 53 and 65. On the other hand, the distribution for men has a sharp spike at age 52, 35 years after most people complete high school. Thus, at age 52, the typical male faces high implicit taxes from Social Security.

[Figure 2 approximately here]

In Goda, Shoven, and Slavov (2008), we also calculated the implicit tax rate for actual workers' earnings histories included in the Benefits and Earnings Public Use File. Actual workers experience volatile wages, career interruptions, marriages and divorces, periods of unemployment and periods when they have more than one job. Nonetheless, we found that the average implicit tax rate increases sharply with career length and age, just as the stylized example suggests.

Implicit in what we have just described is that the current Social Security benefit design favors those with short covered careers relative to those with long careers. For example, consider two individuals who earn the average wage in the economy, but one works for 17.5 years and the other for 35 years. With the same earnings level, the worker with the shorter career will pay half the payroll tax relative to the tax payments of the longer career individual. However, the worker with the 17.5 year career will get substantially more than half of the initial benefits of the long career worker. The reason is easy to see from Figure 1. Both workers' AIMEs will take them beyond the 90 percent segment of the PIA formula, but the long career worker's AIME will extend further into the 32 percent segment. While the three segments of the

PIA formula were designed to achieve a degree of progressivity for the program and to give a “better deal” or higher internal rate of return to those with lower lifetime earnings, an unintended consequence of the particular way in which this progressivity was implemented was to extend similar treatment to those with higher earnings but shorter careers.

Our analysis of implicit taxes ignores Social Security spouse and survivors benefits, and disability insurance. While a full analysis is beyond the scope of this paper, survivor and spouse benefits would tend to reduce implicit tax rates for primary earners because working an additional year (as long as the year counts in the benefit computation) results not only in additional benefits for oneself, but also in survivors benefits for one’s spouse and children. However, spouse and survivor benefits can result in high implicit tax rates on secondary earners. A secondary earner who expects to claim spouse and/or survivors benefits based on the primary earner’s record faces the full 10.6 percent tax on all earnings.

Disability insurance imposes an additional 1.8 percent payroll tax on workers’ earnings. A worker is eligible to claim disability benefits if he or she has worked in covered employment for a sufficient amount of time (depending on age), with (for workers aged 31 and older) 5 years of work in the 10 years before becoming disabled. Disability benefits are based on AIME as well. Thus, working an additional year could make an individual eligible for disability insurance, help to maintain the individual’s eligibility in future years, or increase the individual’s AIME. Depending on an individual’s age and work history, the increase in the expected present value of disability benefits would therefore help to offset some or all of the 1.8 percent payroll tax. Cushing (2005) shows that the marginal benefits of an extra dollar of income under the DI program are much higher for younger workers relative to older workers. Therefore, net marginal DI tax rates increase with age. This result is driven by three things: the young have a larger

chance of becoming disabled at some point before retirement, their expected length of disability given a spell occurs is longer, and their earnings have a larger effect on their benefits (because disability benefits are based on a worker's average earnings). In summary, the DI program only reinforces the increasing implicit tax rates from Social Security retirement benefits.

B. Medicare

As mentioned earlier, one tax from the Medicare program arises from the fact that workers become eligible to receive Medicare after 10 years of covered earnings. Beyond these first 10 years, workers who pay Medicare payroll taxes receive no incremental benefit from these additional taxes.

In this section, however, we focus on a more subtle and less well-known implicit tax from the Medicare program. This implicit tax is due to the fact that working for an employer with more than twenty employees and a health care plan causes otherwise Medicare eligible individuals to effectively forego their Medicare benefits. Losing a benefit because of working is the prototypical implicit tax, and as we will document, this one can be very large.

We begin by reviewing the history of Medicare as a Secondary Payer (MSP). The rule was introduced on January 1, 1983, and until that time, Medicare was a near-universal benefit for those over 65. However, there is a significant literature suggesting that government-provided insurance can “crowd out” private insurance, causing individuals who would have had health insurance without Medicare to rely on Medicare instead (Cutler and Gruber 1996; Gruber and Simon 2007). Therefore, it is likely that the purpose of MSP was to reduce Medicare expenditures by better targeting Medicare coverage to people who would otherwise not have health insurance. However, by excluding a large class of workers from Medicare, but providing

Medicare to retirees, our analysis suggests the government effectively began discouraging work and encouraging retirement.

The legislation also extends to spouses of workers who are otherwise Medicare-eligible. As a secondary payer, Medicare only pays expenses that are covered by Medicare and not covered by the employer plan. The employer is required to offer health insurance to its employees over 65 on identical terms as to employees under 65; in particular, 65-and-over employees cannot purchase policies that merely fill in the gaps of Medicare (known as “MediGap” policies). Firms are also not allowed to compensate workers who choose to decline coverage. If a worker chooses to decline their employer-sponsored health insurance, they would be subject to substantial Medicare deductibles and co-payments, and historically, no coverage for pharmaceuticals. Therefore, in most instances, enrolling in the employer-sponsored plan is a superior alternative for these workers. Medicare’s expenses are then effectively reduced by the cost of health care for individuals who have access to employer-sponsored health insurance.

Because workers effectively forego Medicare benefits by working at a firm that offers health insurance to their employees, we can think of the value of average Medicare expenditures for each age and gender as an implicit tax on working. As a result of this implicit tax, workers aged 65 and over earn lower wages or the firm faces higher costs of hiring older workers than they would in the absence of the MSP provision, depending on how the burden of health care costs are shared.

Using data on Medicare costs, we estimate the implicit tax due to the MSP provision by estimating the value of Medicare expenditures for each age and gender as a proportion of total wages. In reality, the average Medicare expenditure for a particular age and gender is a lower

bound for the insurance value that an individual receives from Medicare, as private insurance companies generally include loading and expense charges in their premiums.

We begin with estimates of average real Medicare expenditures by age and gender for 1997-2005.² We then simulate real age-wage profiles for each year from 1997 to 2005 in a similar manner as that used to construct age-wage profiles in the previous section.³ In a given age and gender group, the average Medicare expenditures represent a wedge between the costs to the firm of the worker's total compensation and the compensation the worker receives. Thus, for each age-gender group, the implicit tax rate is equal to average real Medical expenditures divided by the wage.

Figures 3 and 4 summarize our estimates of the implicit tax rate attributable to the MSP provision for average-earning men and women, respectively. Each line in the graph depicts the implicit tax rate by age for a particular year, based on that year's simulated age-wage profile. The tax rate is computed by dividing the relevant year's Medicare expenditures for each age and gender group by the simulated wage. We find that this implicit tax ranges from approximately 15 percent for men age 65, to 45 percent for men age 80. Women face higher implicit taxes from MSP: 20 percent at age 65, growing to almost 70 percent at age 80. While women generally have lower health care costs than men at each age, they also have lower average wages. As shown clearly in the graphs, the implicit tax for all age groups has increased over time because health care expenditures have grown faster than wages over this period.

² We were able to obtain Medicare claims-based data on average Medicare expenditures by age and gender for 1989-1997. However, we do not have similar figures for 1997 onwards. Using the 1989-1997 data, combined with Social Security population figures by age and gender, we determine the ratio of average Medicare expenditures for each gender to average Medicare expenditures for the total Medicare population. We average this ratio over 1989-1997 and apply it to average real Medicare expenditures by age from 1997-2005 to calculate average real Medicare expenditures by age and gender for these years. We are grateful to Tom MaCurdy for providing the Medicare expenditure data from actual Medicare Claims Records for 1989-1997, Felicitie Bell at Social Security for making historical population files available, and Alan Garber for summarizing average Medicare expenditures for 1997-2005.

³ More details are available in Goda, Shoven, and Slavov (2007).

[Figures 3 and 4 approximately here]

Many people 65 and over face higher implicit tax rates than those shown in Figures 3 and 4. The reason for this is that these figures summarize the ratio of the average cost of Medicare to the average annual wage for people 65 and over. Lower skilled and lower wage workers will face an even higher tax rate, both because the denominator will tend to be smaller (because low-skilled workers have lower wages) and because the numerator will tend to be larger (because Medicare costs are likely to be higher for lower skilled workers).

Butrica, Johnson, Smith, and Steuerle (2006) have also performed a similar calculation that takes into account Social Security, Medicare (including the Medicare as secondary payer provision), and other taxes. They reach similar conclusions about the high implicit tax rates on older workers. Our work complements theirs by examining implicit tax rates over a larger span of ages and examining the pattern of implicit tax rates for actual workers.

III. An Alternative Set of Policies Which Reduce the Implicit Taxes from Social Security and Medicare on Older Workers

In the previous section, we described how Social Security and Medicare impose implicit taxes on those with long careers and those 65 and over. In this section, we describe a set of policies that result in substantially lower implicit taxes in both programs. While there may be other policies that would achieve the same results, here we describe four policy changes that offer such implicit tax reductions. The first three refer to Social Security benefit and payroll tax rule changes and the fourth one eliminates Medicare as a Secondary Payer.

1. Use the highest 40 years of earnings in calculating Social Security benefits, instead of the highest 35 years.

2. Establish a new “paid up” category of workers who have achieved 40 years of covered employment for the Social Security and Medicare payroll tax. Additional earnings for workers in the “paid up” category would be exempt from both the employer and the employee portions of the Social Security and Medicare payroll tax.
3. Change the way the average indexed monthly earnings is calculated. The new calculation would add up the highest 40 years of indexed earnings and divide by the number of months of non-zero earnings (instead of the current practice of dividing by 420 regardless of career length). The PIA formula would remain the same, except that when someone retires at the so-called normal retirement age they would receive their PIA prorated by the ratio of the number of months they worked divided by 480 (the number of months in 40 years). This means that someone who works twice as long would receive twice as much, unlike the current practice.
4. Repeal Medicare as a Secondary Payer, and establish Medicare as a primary payer for eligible beneficiaries. Workers who are eligible for Medicare and want to work would already have major medical coverage in Medicare. Employers with health plans could be required to offer workers covered by Medicare a Medigap policy bringing their total coverage up to par with other employees.

The first element of the four alternative policies is rather straightforward. Taken by itself, this policy reduces benefits for everyone, particularly those who work 35 years or less. However, if one wanted to reward longer careers relative to shorter ones without reducing average benefits, the benefit formula could be made more generous in a way that preserved the average monthly benefit. The result of the rule change would be to delay the age at which further work no longer improves Social Security benefits.

The second element of the alternative Social Security rules establishes the “paid up” category of workers. In combination with the first element, it would mean that every year of work either counts towards the determination of benefits or is not subject to the payroll tax. Once a worker has achieved paid up status, working becomes more lucrative in that the full wedge between what the employer pays and what the employee receives is removed. Table 1 shows the percentage of workers who would achieve paid-up status (i.e. 40 years of earnings) under such a provision at several ages based on the Social Security Benefits and Earnings Public-Use File, 2004. It shows that approximately 52 percent of men and 20 percent of women eventually would have achieved paid-up status even in the absence of behavioral response. Of these, the vast majority would achieve paid-up status by the age of 65.

[Table 1 approximately here]

The third element separates the progressive treatment of those with low earnings levels relative to those with high earnings levels from the treatment of those with short and long careers. It would preserve the existing progressivity relative to earnings but eliminate the non-linear treatment of career length.

Taken together, these three Social Security rules result in a benefit cut. However, these policies could be implemented in a way that is cost-neutral to the Social Security program. In order to compensate for the reduction in benefits and keep the reforms benefit-neutral in aggregate, we apply a proportional increase in retirement benefits in order to keep aggregate benefits constant before and after the rule changes in our simulations. Assuming no behavioral changes, the adjustment needed is a 19.4 percent increase in benefits. On the revenue side, introducing the paid-up category of workers constitutes a reduction in the amount of tax revenues the system receives. We estimate that increasing the OASI payroll tax from 10.6 percent to 11.1

percent would keep the total tax revenues roughly equal. These two adjustments would ensure overall benefit- and revenue-neutrality.

The proposals also result in redistribution from those with shorter careers to those with longer ones. Figure 5 illustrates this by depicting our stylized average earner's monthly benefits, as a function of career length, under both the current and the proposed law. Under the proposed law, a worker's PIA would rise more sharply as he or she accumulated years of work – that is, benefits are more responsive to a decision to delay retirement. Workers with fewer than 31 years of covered earnings would receive a smaller monthly benefit than under the current system; however, as their career length extends beyond 31 years, their monthly benefit rises above the current level. A similar result holds for the low and high earners. Higher benefits for long careers and lower benefits for short careers would be likely to encourage later retirement.

[Figure 5 approximately here]

Figure 6 illustrates how the three Social Security rule changes would eliminate the step function pattern of Figure 1. The four stylized careers in Figure 6 are the same as those in Figure 1, but the pattern of implicit tax rates is dramatically different under policies 1-3 outlined above. The large jumps that come from the switching across segments of the PIA formula are gone. Each of the four stylized workers experiences a gradual decline in implicit tax rates as their career lengthens rather than an uneven increase. The gradual decline is simply due to the fact that the life annuity benefit becomes closer as the career gets longer and therefore the incremental benefits have a higher present value. The Social Security system would always subsidize low earners and would impose modest taxes on middle and upper earners. Even the top earners would only face an implicit tax of approximately five percent rather than current system which imposes taxes of 10.6 percent for earnings late in a long career (or earlier for high

earners). The contrast between Figures 1 and 6 illustrate the power of the alternative rules in reducing the tax on work for those with long careers.

[Figure 6 approximately here]

Rule 4, establishing Medicare as a primary payer for all eligible beneficiaries, would most likely add to the costs of the Medicare system because Medicare would pay for services currently covered by their employers plan. In Goda, Shoven, and Slavov (2007), we estimated that Medicare costs would increase by at most 4.4 percent. This number was generated by using the existing labor force participation rates for people 65 and over, multiplying those numbers by the fraction covered by employer-sponsored health insurance and multiplying that by the average age and gender specific costs of Medicare benefits. It is an upper bound for several reasons, including that workers are generally healthier on average than their retired counterparts and not everyone is working for firms with more than twenty employees who comply with the MSP rule. In the following section, we show how, under certain assumptions, this increase in costs may be partially or completely offset by an increase in federal tax revenues from additional work.

We reiterate that these policies are only one set of possible actions that may reverse the pattern of implicit tax rates from Social Security and Medicare, and we do not specifically advocate their adoption. We describe them mainly to show that such policies do in fact exist, and can be enacted in ways that do not adversely affect the finances of either program.

IV. Estimating Labor Market Consequences of Reducing Implicit Taxes from Social Security and Medicare on Older Workers

In our previous discussion, we described the implicit taxes arising from Social Security and Medicare. These costs create a tax wedge which has distortionary effects, resulting in

changes in the equilibrium quantity of labor. This argument is valid regardless of whether the employer or the employee bears the costs of this distortion. Depending on assumptions regarding the elasticities of labor supply and labor demand, the costs may be borne by either party. Laws prohibiting age discrimination may also shift the burden of the tax towards employers, or spread it more broadly across workers of all ages, if they prevent employers from paying older workers lower wages than similarly qualified younger workers.

For simplicity however, in this section, we assume that labor demand is perfectly elastic, and we ignore legal constraints on wages paid to older workers. That is, we assume that as the implicit costs from Social Security and Medicare increase, the burden falls completely on the worker in the form of lower wages. Likewise, if the wedge from these implicit costs reduces, workers would enjoy higher returns to working in the form of higher wages. This assumption, along with estimates in the literature of labor supply elasticities, allows us to develop a back-of-the-envelope estimate of the labor supply responses to the four policies described in Section III.

While most 45-year old workers are not sensitive to tax rates, the high implicit tax due to MSP and Social Security applies to an age range of Americans who are particularly sensitive to work incentives. French (2005) develops a life cycle model in which individuals choose their consumption, labor supply, and retirement age; they face a fixed cost of working, borrowing constraints, and uncertainty regarding health status and wages. French calibrates the parameters of the model by matching its predictions to life cycle profiles of labor force participation, hours worked, and assets from the Panel Study of Income Dynamics.

Table 2 summarizes the labor supply responses simulated from a permanent change in wages at several different ages.⁴ The impact of a permanent wage change at relatively young ages (e.g., age 30) is low because saving rates also adjust. The higher accumulated savings near retirement

⁴ We are grateful to Eric French for carrying out this simulation and providing us with the results.

may actually cause people to retire earlier through a wealth effect, dampening the overall response in total lifetime labor supply. Note that a permanent wage change at age 55 leads to the highest overall effect on lifetime labor supply, with an elasticity of 0.16021. This elasticity implies that a doubling of wages at age 55 would increase the total lifetime labor supply by approximately 16 percent.

[Table 2 approximately here]

The lifetime labor supply elasticity for a permanent change in wages at age 65, relevant for our analysis, is 0.04208, indicating that a doubling of wages at age 65 would increase the total lifetime labor supply by approximately 4 percent. This change can be decomposed into two effects: a slight reduction in labor supply from ages 30 to 64 in anticipation of higher wages at age 65 and beyond, and a very large increase in the labor supply during the years of higher wages (65+). The reduction before age 65 represents a partial reallocation of labor supply to ages where wages are higher. To the extent that the permanent wage change is unanticipated, perhaps during a transition period, the reallocation effect would be small and the total lifetime labor supply response would be even greater. Even in the case that the permanent wage change is fully anticipated, the labor supply response after the permanent wage change more than makes up for the reallocation effect, resulting in higher lifetime labor supply.

Other studies which examine the incentives in Social Security also indicate that labor supply is sensitive to the return from working. Laitner and Silverman (2008) simulate the behavioral impact of a reform similar to the “paid-up” policy that we consider, and they find that exempting workers from payroll taxes after 39 years may increase the average retirement age by more than 7 months. In addition, Liebman, Luttmer and Seif (2009) show that a 10 percent

increase in the after-tax earnings reduces the two-year retirement hazard by 2 percentage points off of a base rate of 15 percent.

Suppose the four policies we described in Section III reduce implicit taxes by 45 percent relative to current practice for all workers age 65 and over.⁵ Under the assumption of perfectly elastic labor demand, the reduction in implicit taxes results in a one-for-one increase in after-tax wages for these workers, implying an increase of after-tax wages of approximately 80 percent.⁶ Applying the age-specific labor supply elasticities from Table 2, an 80 percent increase in wages at age 65 would lead to an increase in lifetime labor supply of $0.80 \times 0.042 = 3.36$ percent. This estimate of the overall increase is driven by an increase in the labor supplied while the worker is 65 or older of $0.80 \times 2.69 = 215$ percent. We emphasize that this is a back-of-the-envelope calculation. To the extent that labor demand is less than perfectly elastic, this calculation overestimates the labor supply response.

In 2008, aggregate wage and salary accruals amounted to \$6,540.8 billion.⁷ An increase in lifetime labor supply of 3.36 percent would then increase total wages by \$219.77 billion and this amount would be subject to federal income taxes. If 20 percent of these additional wages were captured by the federal tax system, the increase in tax revenue for the government would be approximately \$44 billion.

As mentioned in the previous section, the policies related to Social Security are assumed to be cost-neutral, while removing MSP would increase Medicare costs by approximately 4.4 percent. Medicare expenditures in 2008 were approximately \$469.2 billion; therefore, the

⁵ This reduction assumes that the removal of MSP would eliminate the implicit tax from Medicare of approximately 30 percent, and that the worker would fall in the “paid up” category of workers and therefore not be subject to the total Medicare and Social Security payroll tax rate of 15.3 percent.

⁶ The elimination of a 45 percent tax is equivalent to an increase in after-tax wages of $1/(1-0.45) - 1 = 0.81$.

⁷ National Income and Product Accounts Table 1.12, Line 3, obtained from <http://bea.gov/national/nipaweb/SelectTable.asp> on July 13, 2010.

increase in Medicare costs from removing MSP would be approximately \$20.6 billion.⁸ This estimate is roughly the same order of magnitude as the estimate of the additional tax revenue of \$44 billion, suggesting that the additional costs to Medicare of providing benefits to workers at firms who are offered health insurance by their employers may be offset by additional tax revenues. While these estimates make a number of simplifying assumptions, they provide a back-of-the-envelope approximation of the costs and benefits of adjusting the Social Security and Medicare programs to encourage older workers to remain in the workforce.

V. Conclusions

It is likely that the work discouragement of older Americans was not fully appreciated in the original design of these programs. However, given the long-term budget issues facing the U.S. economy (primarily caused by the cost of health care), policies which discourage older individuals from working need to be reexamined. Our work suggests that there are changes to the Social Security benefit formula – increasing the number of years upon which benefits are based, disentangling career-length from progressivity, and exempting workers from payroll taxes after 40 years of work – that could flatten the age profile of implicit tax rates and reduce the disincentive to work at older ages. Eliminating Medicare as Secondary Payer would also remove a substantial work disincentive for individuals over the age of 65, who often effectively forego Medicare coverage if they enter the labor force. Reducing implicit tax rates through these policies or others could potentially result in a large increase in labor supply among older workers. We emphasize that our estimates of labor supply responses are back-of-the-envelope, but given the relatively elastic labor supply of older workers, the efficiency gain from reducing

⁸ National Health Expenditures Web Table 3, obtained from https://www.cms.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp on July 13, 2010.

these implicit taxes could be considerable.

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Figure 1: Implicit Tax Rates of Social Security under Current Rules

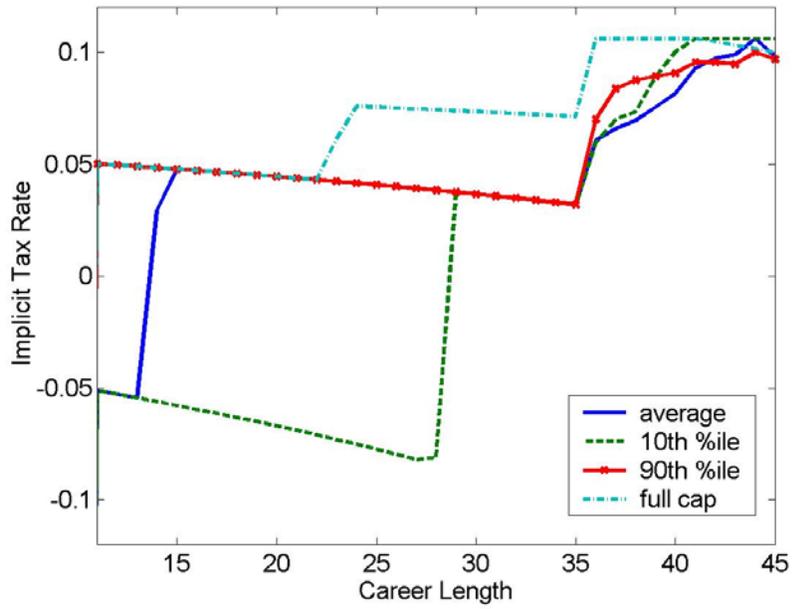
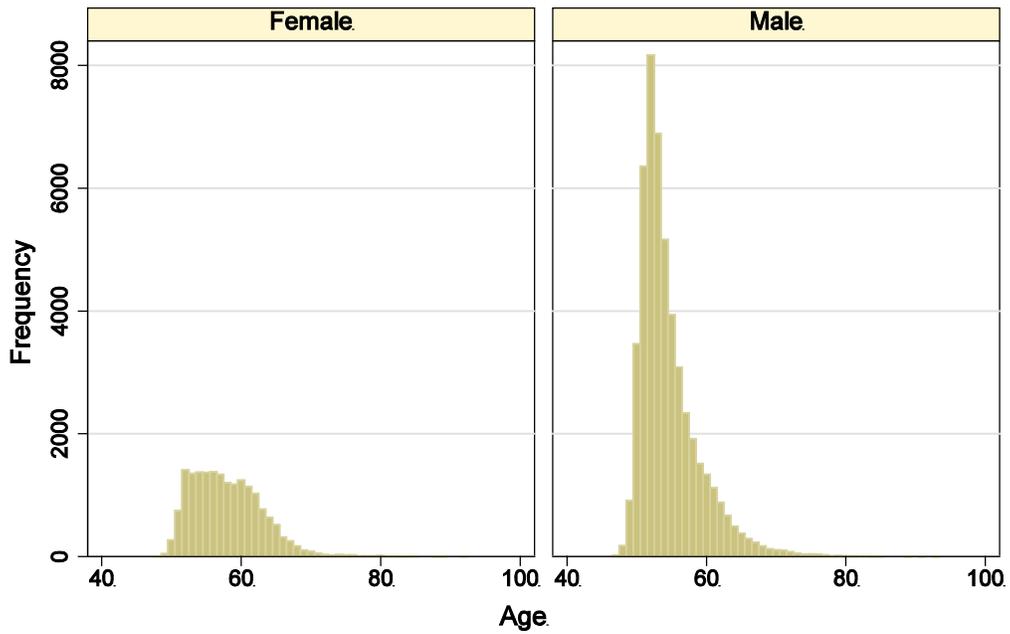


Figure 2: Distribution of 35-Year Career Age



Graphs by gender.

Figure 3: Implicit Tax from MSP for Men

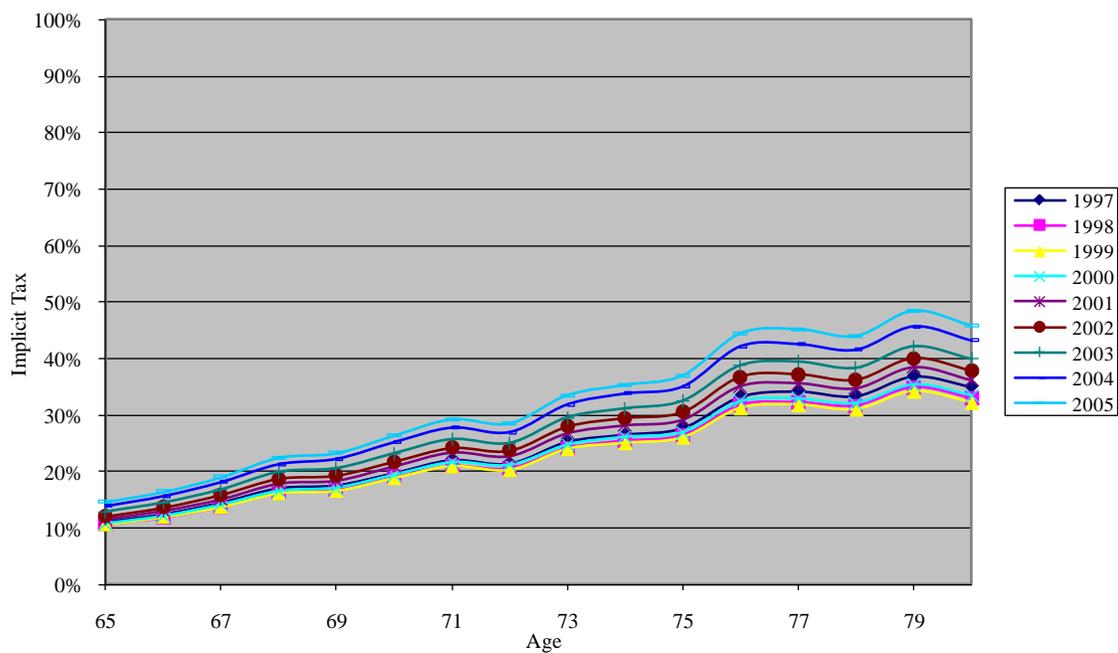


Figure 4: Implicit Tax from MSP for Women

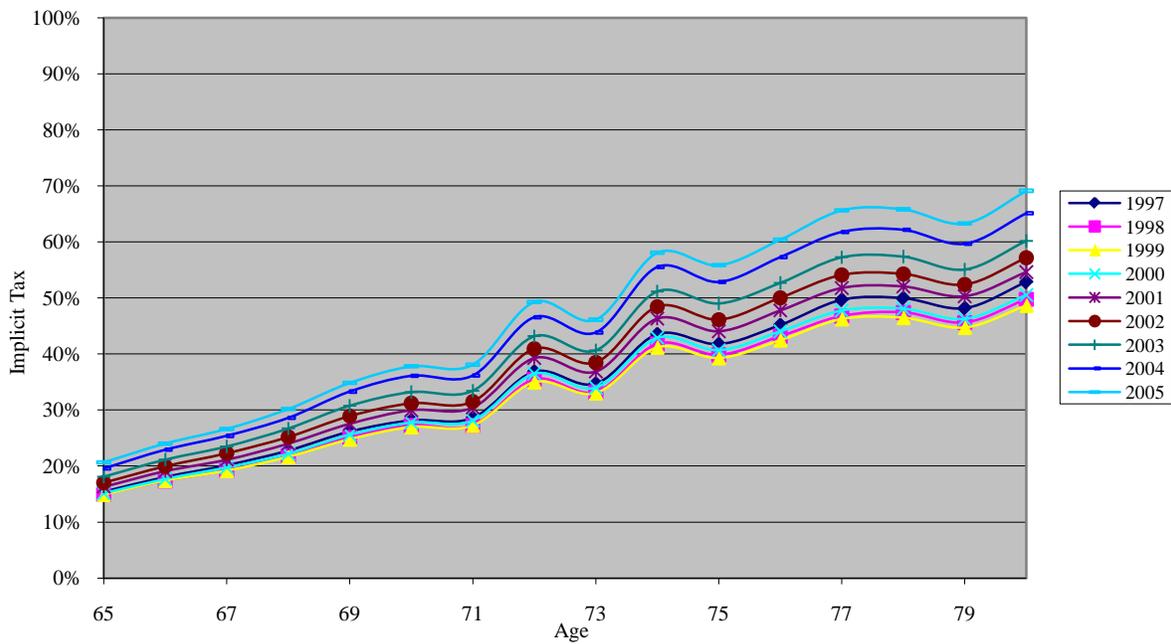


Figure 5: PIA Under Current and Proposed Law by Career Length

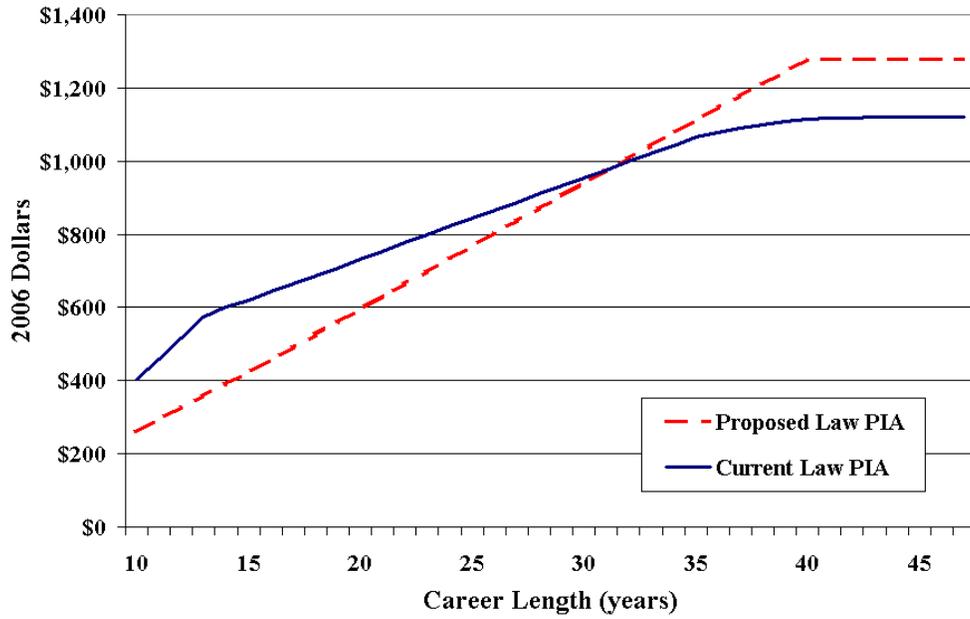


Figure 6: Implicit Tax Rates of Social Security with Alternative Rules 1-3

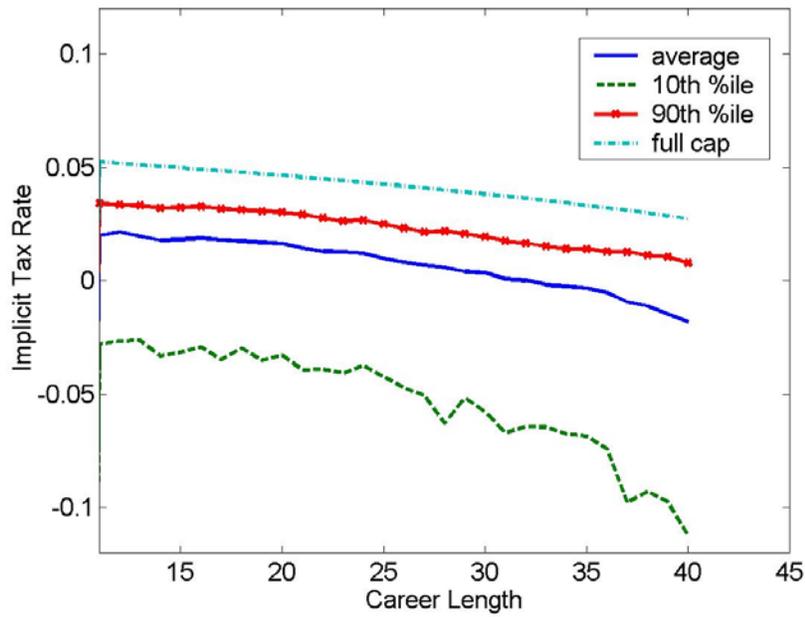


Table 1: Cumulative Probability that Worker Has Accrued 40 Years of Earnings

Age	Men	Women	Total
55	5.4%	0.6%	3.5%
60	40.1%	10.8%	28.7%
65	49.5%	17.9%	37.2%
70	51.3%	19.5%	38.9%
75	51.7%	19.7%	39.2%
80	51.9%	19.8%	39.4%
85	51.9%	19.8%	39.4%
90	51.9%	19.9%	39.4%

Source: Benefits and Earnings Public-Use File, 2004

Table 2: Labor Supply Elasticities for Permanent Wage Changes at Different Ages

Permanent Change in Wage	Total lifetime labor supply elasticity from permanent wage change	Labor supply elasticity from age 30 until permanent change	Labor supply elasticity for ages after permanent change
at age 30	0.03045		0.03045
at age 40	0.10303	-0.21736	0.24397
at age 50	0.15836	-0.09508	0.54428
at age 55	0.16021	-0.06728	0.82345
at age 60	0.13620	-0.04228	1.41884
at age 61	0.12262	-0.03719	1.59665
at age 62	0.10668	-0.03215	1.83915
at age 63	0.08847	-0.02743	2.08358
at age 64	0.06656	-0.02540	2.31745
at age 65	0.04208	-0.02669	2.68932

Source: Communication with Eric French, Federal Reserve Board of Chicago, simulated as described in French (2003)