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A TAX ON WORK FOR THE ELDERLY: MEDICARE AS A SECONDARY
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ABSTRACT

Medicare as a Secondary Payer (MSP) legislation requires employer-sponsored health insurance to be a primary payer for Medicare-eligible workers at firms with 20 or more employees. While the legislation was developed to better target Medicare services to individuals without access to employer-sponsored insurance, MSP creates a significant implicit tax on working beyond age 65. This implicit tax is approximately 15-20 percent at age 65 and increases to 45-70 percent by age 80. Eliminating this implicit tax by making Medicare a primary payer for all Medicare-eligible individuals could significantly increase lifetime labor supply due to the high labor supply elasticities of older workers. The extra income tax receipts from such a policy would likely offset a large percentage of the estimated costs of making Medicare a primary payer.

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1. Introduction

It is well known that several European countries have pursued policies to get older workers to leave the workforce in the hope that this will give more job opportunities to younger workers. On the surface of it, this so-called “lump of labor” policy has been a failure since youth unemployment remains very high in most of Europe. Less well known is that the U.S. has a set of policies, whether intentional or not, that similarly discourage older workers from working by disproportionately taxing their earnings. Given the demographic trends in the country and the long-term budgetary pressures faced by the federal government, it is important to evaluate the possibilities of removing these disincentives for long careers. If these policies effectively discourage work by older workers, they reduce GDP and the government’s tax receipts.

In previous work, we examined how the structure of Social Security tends to discourage long careers (Goda, Shoven, Slavov 2006). In this paper, we focus on another federal policy that creates disincentives towards working long careers or at least working beyond age 65. The policy is known as Medicare as a Secondary Payer (MSP). Medicare adopted its MSP policy in 1982, effective January 1, 1983. This legislation states that for individuals working at firms with 20 or more employees, and otherwise eligible for Medicare benefits, Medicare serves as a secondary payer for health care expenses. The employer’s health insurance is the first payer. Because employer-sponsored health plans tend to be more comprehensive than Medicare, these workers are effectively foregoing their Medicare benefits by working. If these same individuals were not working, they would receive Medicare as their primary health insurance.

The incidence of the MSP policy would be a worthy research topic in its own right. While many people would argue that the policy makes hiring workers over the age of 65 more expensive, this is not necessarily the case. What is clear is that the policy creates a gap between the cost of employing 65+ workers and their after-health-benefits salary for firms with employer-sponsored health insurance plans. What is not clear is whether this policy increases the cost of older workers or decreases their take-home pay. For the rest of this paper, we assume that the incidence of employer-sponsored health insurance falls on workers. That means that we are assuming that MSP depresses the net wages of working at sizable firms with health insurance plans for those otherwise eligible for Medicare. Effectively, workers who are 65 and over and employed by the relevant employers have incentives to buy the associated employer-sponsored health insurance plan even though they would otherwise be eligible for Medicare.

In this paper, we examine a change in policy whereby Medicare would be the primary insurance provider for all age-eligible people whether they work or not, which we call Medicare as a Primary Payer (or MPP). With the shift from MSP to MPP, wages for individuals 65 and older would rise (at least for those working for large employers with health insurance), causing them to increase both labor force participation and hours worked. We estimate the wage increase that would arise from an MPP policy. Using estimates of labor supply elasticities by age, we then estimate the impact of an MPP policy on labor supply, both alone and in conjunction with reforms to Social Security that reduce the penalties for long careers. We also estimate the net cost of switching from MSP to MPP.

We attempt to examine the historical impact of the MSP policy on the labor supply and work incentives of Medicare-eligible individuals. It is difficult to identify the impact of the MSP legislation, as it went into effect at a time that the Social Security earnings test was liberalized

substantially. These two policy changes tend to work in the opposite direction in terms of work incentives for individuals aged 65 and older. We investigate the response to MSP by looking at the labor force participation behavior and health insurance availability of individuals most affected by the MSP provision relative to a control group of non-Medicare eligible individuals. We examine the effects at two different points in time: 1983, when the policy was implemented, and 1995, when numerous steps were taken to increase the enforcement of the provision. Our results show that labor supply actually increased in the treatment group relative to the control group, a finding that is most likely caused by roughly simultaneous changes to the Social Security earnings test.

This paper is organized as follows. Section II describes the history behind Medicare as a Secondary Payer, and the existing literature on the impact of this policy. Section III investigates the change in work incentives and the economy that would result from a switch to a MPP policy. Section IV discusses the changes in labor force participation and health insurance availability that has occurred since MSP was instituted, and Section V concludes.

2. History of Medicare as a Secondary Payer

There has been evidence that as public insurance programs expand, private insurance purchases are substituted with public insurance coverage. The extent to which private insurance coverage is reduced is known as “crowd-out,” and estimates suggest that the crowd-out rate was approximately 60 percent for Medicaid expansions (Gruber and Simon (2007), Cutler and Gruber (1996)). In other words, the number of privately insured fell by 60 people for every additional 100 people covered by public insurance.

For the population over 65, Medicare was essentially a universal insurance program. As such, it crowded out private coverage for anyone who would have had private coverage in its absence. This means that Medicare was providing health insurance for lots of people who would have had health insurance anyway. One possible way to reduce crowd-out is to provide coverage or a higher subsidization of costs to targeted groups who are in greater need of coverage. Medicare as a Secondary Payer attempted to do this by essentially limiting benefits for individuals who had opportunities to obtain insurance through their employers. The legislation, which took effect on January 1, 1983, stated that Medicare would be a secondary payer for individuals who carried employer-sponsored health insurance at firms with 20 or more employees. The legislation also extends to spouses of workers who are otherwise Medicare-eligible. As a secondary payer, Medicare would only pay 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 was a superior alternative for these workers. Medicare’s expenses are then essentially reduced by the cost of health care for individuals who have access to employer-sponsored health insurance.

However, a major concern of anti-crowd-out measures such as MSP is that incentives may change in a way that distorts labor market behavior. Butrica, Johnson, Smith and Steuerle (2004) found that because of this policy, Medicare significantly increases the effective tax rate on

working beyond age 65. The study finds that a middle income worker in their early 50s faces an effective tax rate of roughly 15 percent but that this tax rate approaches 50 percent by age 70 due to policies that discourage older individuals from working and having a longer career. The MSP policy is a big part of this jump.

Johnson (2003) makes a back of the envelope estimate of how much the cost of hiring older workers would be reduced if the MSP policy were dropped. He guesses that if Medicare were the primary payer for working individuals over age 65, the costs of hiring older workers would reduce by approximately 4 percent of their salary. He was not explicit about his incidence assumption, but it clearly was different than ours. In our approach, the cost of hiring older workers does not change; the impact of the policy switch is the supply response to higher take-home pay. Our estimates of the wage increase from the switch are far higher than 4 percent and more in line with Butrica et al. (2004). The discrepancy is largely because Johnson (2003) assumes that employed older adults are generally in better-than-average health and use relatively few health services.

Glied and Stabile (2001) showed that there had been no significant changes in wages or employment due to the secondary payer mandate. However, their period of analysis was 1977 to 1987, and they assert that compliance appeared to be low immediately following the 1983 introduction of the legislation. The Centers for Medicare and Medicaid Services (CMS) changed its procedures in 1995 in order to tighten enforcement of MSP. In particular, CMS has contracted with a firm to survey beneficiaries three months before they are scheduled to be entitled to Medicare benefits regarding their and their spouse's employment status and other health insurance they are receiving. If the questionnaire is not returned within 45 days, the beneficiaries are provided with a follow-up survey. Non-responses are followed up with a

telephone call. Seventy percent of the initial surveys are returned, and the response rate increases to 79 percent after the follow-up. CMS uses the surveys to determine whether the beneficiary has coverage that is primary to Medicare. In 1997, it was estimated that this process saved Medicare an extra \$425 million. Other initiatives, such as the sharing of data between CMS, private insurers, the IRS, and the Social Security Administration, have also led to increased compliance with MSP. According to a Department of Health and Human Services report in June 2000, only 0.43 percent of beneficiaries with primary health insurance coverage in 1997 were not identified by Medicare (Brown 2000). In Section IV, we take another look at Glied and Stabile's analysis, examining the effects in both 1983 and 1995 when Medicare as a Secondary Payer was better enforced.

3. The Effects of Medicare as a Primary Payer

To determine the effect of the MSP provision, one could look at its historical impact in 1983 (when it was introduced) or 1995 (when enforcement was ratcheted up). The associated reductions in labor supply and wages can provide an estimate of the policy's impact. However, as will be shown in the following section, it is difficult to identify the historical impact of the MSP provision. This problem occurs because, during the same period, the Social Security earning's test was liberalized, which had an opposite effect on labor supply. The earnings test liberalization impacted exactly the same workers (those 65 or over) as the MSP policy. Even if identification were possible, it is unlikely to provide a good estimate of the impact of MSP today. Health care costs have risen substantially in recent years, making the added "tax" attributable to MSP larger. This would result in a larger impact on the wage of individuals aged 65 and older, and a greater decline in labor force participation and hours worked.

Therefore, in this section, we follow an alternative approach. Because workers essentially 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 a tax on working. As a result of this implicit tax, workers aged 65 and over earn lower wages than they would in the absence of the MSP provision. Using data on Medicare costs, we estimate the implicit tax due to the MSP provision. If the MSP provision were removed, we would expect wages to rise by the amount of the implicit tax. Combined with estimates of labor supply elasticity for older workers, we can determine the increase in labor supply that would result from making Medicare a primary payer for all beneficiaries. 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 by estimating average real Medicare expenditures by age and gender for 1997-2005. 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.¹

The average Medicare expenditures represent the total tax on workers in a given age and gender group. To compute the implicit tax rate, we simulate real age-wage profiles for each year

¹ 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.

from 1997 to 2005. To construct these age-wage profiles, we compute the average wage for each age and gender using the Outgoing Rotation Groups from the 2005 and 2006 Current Population Survey (CPS). Then we compute the ratio of each age and gender group's wage to the entire sample's average wage. We apply these ratios to the time series of nationwide average wages published by the Bureau of Labor Statistics to find the age- and gender-specific wage for each year. For example, consider an average male 65-year-old worker in 2000. The national average annual wage in 2000 was \$24,667.76. Based on the CPS surveys, male 65-year-old workers earn approximately 1.098 times the national average; therefore, a 65-year-old male worker's simulated nominal wage in 2000 would be $\$24,667.76 \times 1.098 = \$27,085.20$.

Figures 1 and 2 summarize our estimates of the added tax attributable to the MSP provision for 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.

Figure 1: Implicit Tax from MSP for Men

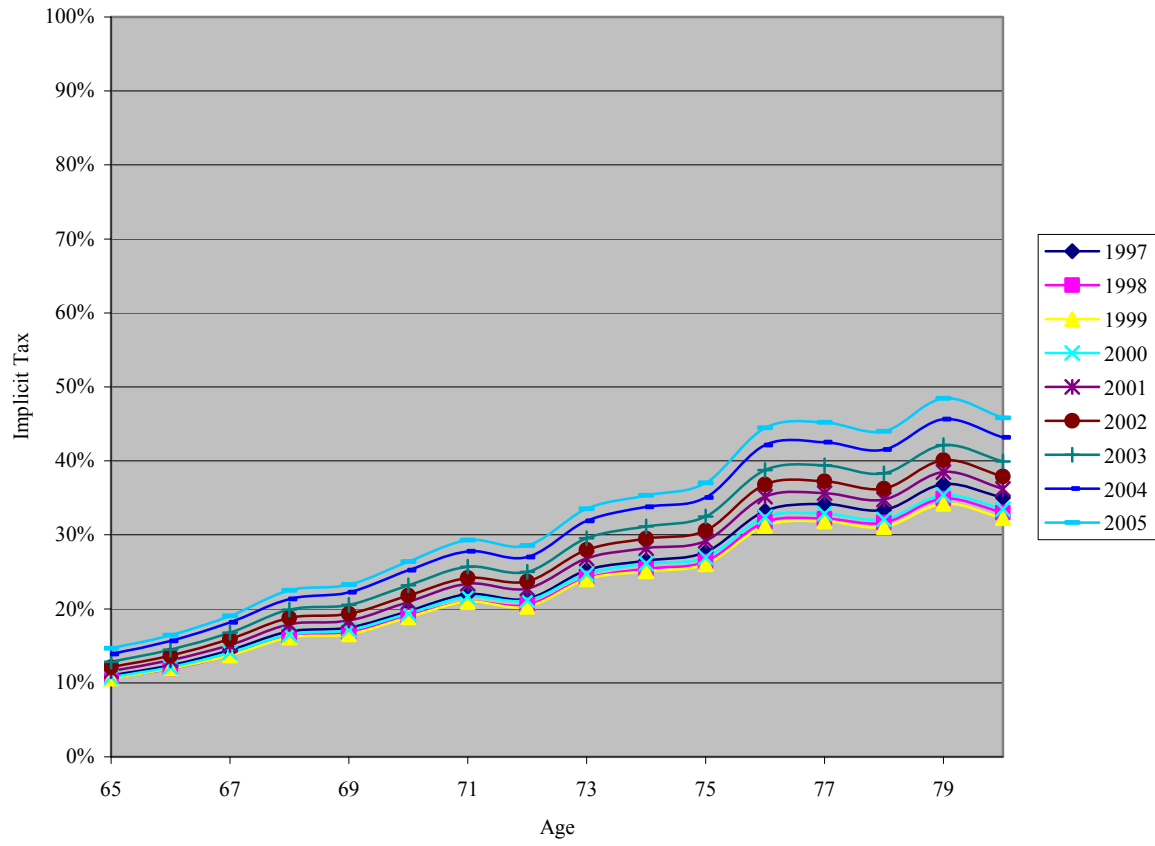
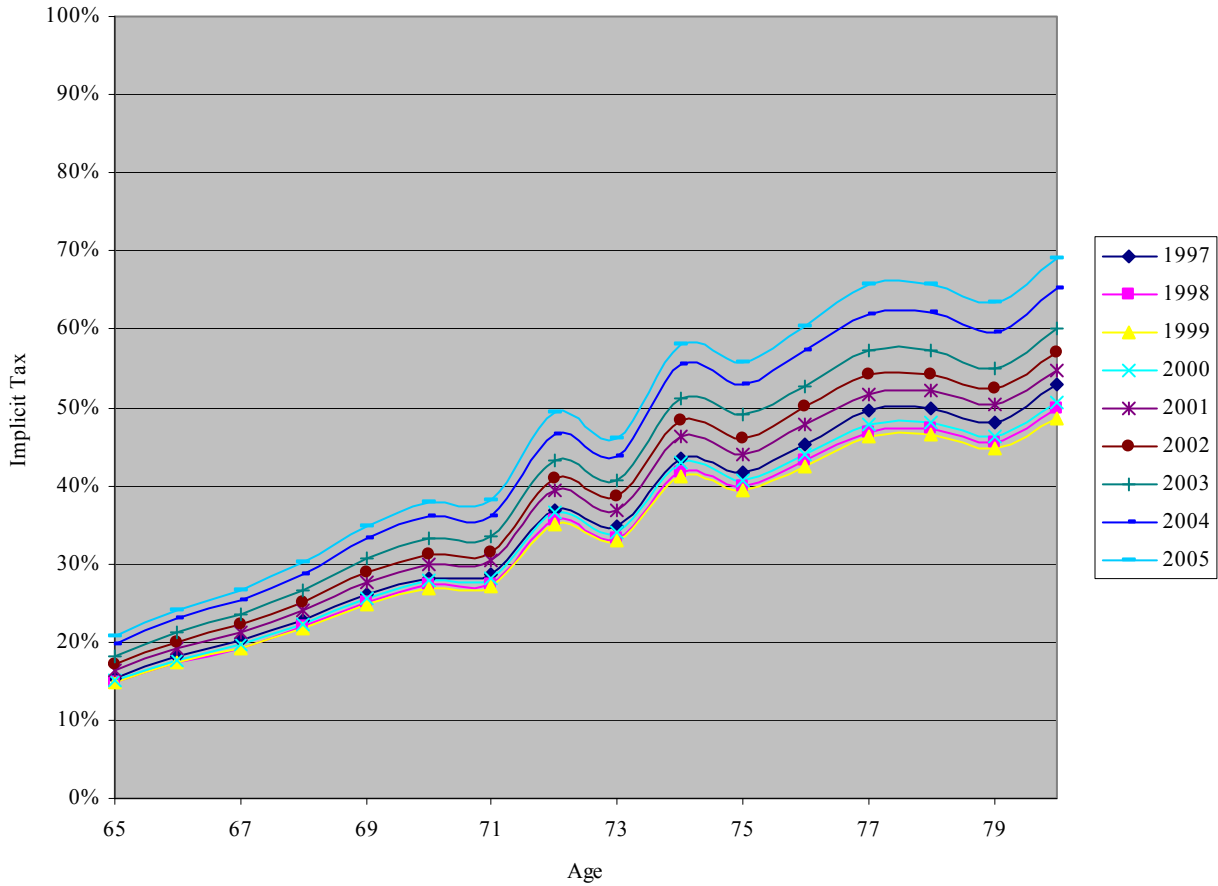


Figure 2: Implicit Tax from MSP for Women



Medicare is not the only program that discourages work among older individuals. Social Security also contains a number of provisions that create high marginal tax rates on older workers. In previous work (Goda, Shoven, and Slavov 2006), we identify some of these features. The Social Security benefit computation is based on the highest 35 years of indexed earnings. If an individual works for fewer than 35 years, zeros are averaged in for the remaining years. For a career that is shorter than 35 years, working an additional year increases Social Security benefits considerably, as the earnings from that year replace a zero in the benefit computation. A year of work beyond 35 years has a significantly lower payoff: at best, it

replaces a positive (but lower) value in the benefit computation. Moreover, the benefit computation makes no distinction between short careers and low wages. An individual who works for 40 or more years at a low wage may have the same average indexed earnings as an individual who works for less than 20 years at a high wage. The individual with the short career appears to have a low income because zeros are averaged in for the remaining 15 years. The progressivity of the benefit formula implies that the short-careered individual receives a relatively high rate of return intended for lower-income workers.

In our earlier work, we examined policies that would make Social Security more neutral with respect to career length. These policies are (1) changing the number of years of earnings used in the calculation of Social Security benefits from 35 to 40, so that it uses the highest 40 years of indexed earnings; (2) establishing a new “paid-up” category of workers who have 40 years of covered earnings above a set threshold (e.g. five percent of the earnings cap) who would then be exempt from both the employer and employee portion of the payroll tax; and (3) using a new method of calculating benefits that would allow low income workers to be treated differently from workers with short careers, separating the progressivity of the system from the treatment of career length. We show that, taken together, these three policies reduce the large disincentives towards working at older ages.

The “paid-up” concept can also be extended to Medicare, so that those who work longer than 40 years would face no payroll tax at all. That alone would remove a 15.3 percent wedge between what employers pay and what senior workers receive. The current policy is that these long-career employees are subject to the payroll tax, but many receive no extra benefits from their additional contributions. The combination of the paid-up concept and the MPP policy

could remove a 30 to 60 percent wedge in the labor market for men over the age of 65, and a 35 to 85 percent wedge for women over age 65.

Eliminating the MSP in isolation or in combination with the paid-up concept results in a permanent increase in the wage for individuals aged 65 and above. The impact of these policy changes depends on the elasticity of labor supply among older individuals. 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 estimates 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 1 summarizes the labor supply responses simulated from a permanent change in wages at several different ages.² The impact of a permanent wage change at relatively young ages (e.g., age 30) are low because as labor supply increases beginning at age 30, savings are also increased. The higher accumulated savings near retirement 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. For the MSP policy, the relevant figure is the lifetime labor supply elasticity for a permanent change in wages at age 65. This elasticity 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. The reduction before age 65 represents a partial reallocation of labor supply to ages where wages are higher. To the extent

² We are grateful to Eric French for carrying out this simulation and providing us with the results.

that the permanent wage change is unanticipated, perhaps during a transition to the MPP policy, 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.

Table 1

| 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 |

Combining the estimates of the taxes created by MSP and the elasticities summarized above indicates that switching to an MPP policy could increase total lifetime labor supply by 0.15 x 0.04208, or approximately 0.6 percent. This estimate is a lower bound that assumes that MPP would cause wages to increase by 15 percent beginning at age 65. Because health care expenditures rise with age, the actual wage increase at higher ages is much larger. If the paid-up concept were instituted as well, the lower bound on the effect on total lifetime labor supply would double to 1.2 percent. Table 2 shows the percentage of workers achieving paid-up status (i.e. 40 years of earnings) at several ages based on the Benefits and Earnings Public-Use File, 2004. This dataset contains earnings histories for a one percent sample of Social Security

beneficiaries in December 2004. It shows that approximately 52 percent of men and 20 percent of women eventually do achieve paid-up status. Of these, the vast majority achieve paid-up status by the age of 65. This suggests that almost half of workers would be paid-up and therefore experience the additional 15.3 percent wage increase at age 65.

Table 2: 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

What are the costs to the federal government of switching to an MPP policy? To determine Medicare’s potential savings from the current MSP policy, we estimate the amount of Medicare expenditures that are borne by the population of older workers covered by employer-sponsored health insurance in 2002:

$$MSPSavings_{2002} = \sum_{a,g} LFP_{a,g} \cdot Pop_{a,g} \cdot ERHI_{a,g} \cdot MedExp_{a,g}$$

We first arrive at the number of workers by using 2002 labor force participation rates by age and gender, $LFP_{a,g}$, calculated from the CPS, and population estimates, $Pop_{a,g}$, from the Social Security Administration as of July 1, 2002.³ Because not all workers are covered by a primary health insurance plan provided by their employer, we then multiply by the percent of workers who have employer-sponsored health insurance, denoted by $ERHI_{a,g}$. In 2002, this value was 54.7 percent for men age 65 and above, and 50.9 percent for women age 65 and above. Note that

³ The authors would like to thank Steve Haugen from BLS for providing the labor force participation data.

this value is only a proxy for those likely to be covered by MSP legislation; it is possible that the proportion covered by MSP is smaller due to its exception of firms with 20 or fewer employees.

Once we have the number of individuals likely foregoing Medicare benefits due to MSP for each age and gender, we multiply by the average Medicare expenditures in the respective cell, $MedExp_{a,g}$, to arrive at an upper bound of the Medicare expenditures borne by the population of older workers covered by MSP of approximately \$11.6 billion. This represents an upper bound of the extra expenditures that Medicare would be responsible for if it switched to a policy of being the primary payer for all individuals over age 65.⁴ This value compares to total Medicare expenditures for HI and SMI of \$265.7 billion for that year, and indicates that dropping the secondary payer provisions and adopting a primary payer policy could increase Medicare's costs by at most 4.4 percent.

Suppose the MPP policy were instituted alone (i.e. without the accompanying paid-up concept). If we take into account the labor supply response that would occur if we moved to an MPP policy, the federal government unified budget deficit would not worsen by exactly that amount. This is because of the additional personal income and payroll taxes that would be generated by removing the disincentives for people to work long careers. According to the National Income and Product Accounts, aggregate wage and salary disbursements totaled \$4,942.8 billion in 2002. If we assume that aggregate wages would increase by 0.6 percent from making Medicare a primary payer of health benefits (a reasonable estimate given the elasticities above), an extra \$29.7 billion in income would be subject to federal income taxes. This means that if 25 percent of this extra income was captured by the federal tax system and funneled into

⁴ The 2004 House Ways and Means Committee Green Book (Table 2-44) estimates that Medicare saved just under \$2 billion in 2002 from the secondary payer provisions. The Green Book gives no description of how the \$2 billion is calculated. The discrepancy may be due to the fact that not all workers with employer-sponsored health insurance are covered by MSP (e.g. if they work at firms with 20 or fewer employees), and also that workers may have lower than average Medicare expenditures, leading to a lower "savings" from MSP.

Medicare finances, the additional \$11.6 billion that Medicare would be paying as a primary payer would be offset by \$7.4 billion in additional revenue to the government. Additionally, the extra income would be subject to payroll taxes, channeling an extra \$4.5 billion (15.4 percent x \$29.7 billion) directly into Social Security and Medicare.

If the MPP policy were instituted in combination with the paid-up concept, aggregate wages could increase by 1.2 percent, generating \$59.3 billion in income that would be subject to federal income taxes (but not payroll taxes). If the average marginal income tax rate were 25 percent, this extra income would in turn divert \$14.8 billion in additional revenue to the government. This revenue would more than offset the additional cost of the MPP policy if it were redirected to Medicare, and would partially offset the costs of the paid-up policy change.

4. The Historical Impact of MSP

Identifying the impact of the MSP requirement is tricky because of an important confounding factor: the Social Security earnings test. Under the earnings test, Social Security recipients who earn income above a certain threshold are subject to reductions in their Social Security benefits. As documented by Gruber and Orszag (2000), the earnings test threshold for individuals aged 65-69 increased in real terms between 1978 and 2000 (when it was eliminated). There was a particularly sharp increase starting in 1996 and coinciding with the period of increased enforcement for the MSP requirement. There were also increases in the early 1980s. Both the earnings test and the MSP requirement work in opposite directions, which would make it difficult to identify the labor supply response to the law changes.

Nonetheless, we attempt an analysis along the lines of Glied and Stabile (2001). We use a difference-in-difference approach to evaluate the impact of labor market incentives before and

after MSP. However, we look at both at the original implementation of the policy in 1983, as well as the increase in enforcement efforts in 1995. The possible effects on the supply of older workers include switching into employment not under the provisions of MSP, or stopping participation in the labor force completely. Employment not under the provisions of MSP may include firms that do not offer health insurance, or positions that are not eligible for health insurance benefits, such as part-time or consultant status.

Our data come from the March supplement of the Current Population Survey (CPS) from 1980-2006.⁵ The sample includes individuals aged 60-69 who are not employed in the armed forces. The treatment group consists of individuals aged 66-69, who are affected by the MSP policy; the control group consists of individuals aged 60-64, who are not affected by the policy.⁶ Our basic strategy is to look at a set of labor supply variables for the treatment group relative to the control group. The labor supply variables we consider include indicators for labor force participation and full-time employment. We would expect to see a decline in both of these for the treatment group relative to the control group after MSP went into effect. We also look at whether the individual holds an employer-provided health insurance policy, and whether the individual is covered by an employer-provided health insurance policy (regardless of whether they are the policy holder). Again, we would expect to see a relative decline in both of these characteristics among the treatment group, as they are likely to shift from employers who offer health insurance to ones who do not. Determining the effective date for MSP is somewhat tricky. While it went into effect in 1983, it was not widely enforced until 1995. To deal with this, we consider two separate “after” time periods: 1984-1994 and 1996-2006. In the former

⁵ King et al. (2004)

⁶ We do not include 65-year-olds. Since it is possible for a person to be surveyed in adjacent March CPSs, we want to avoid the problem of someone switching from the control group to the treatment group.

period, the MSP policy was in effect but not enforced. In the latter period, the MSP policy was widely enforced.

Our regression model is as follows:

$$Y_{it} = \beta X_i + \alpha D + \gamma T_i + \delta_{84-94} T_i * d_{84-94} + \delta_{96-06} T_i * d_{96-06} \quad (1)$$

Here, Y_{it} is our indicator of labor supply or health insurance coverage for individual i in year t , X_i is a vector of individual characteristics (we use race and education), D is a vector of year dummies, d_{84-94} and d_{96-06} are dummy variables equal to 1 during the periods 1984-1994 (when MSP was in effect but not widely enforced) and 1996-2006 (when MSP was enforced), and T_i is a dummy variable equal to 1 if individual i is in the treatment group. The key parameters are δ_{84-94} and δ_{96-06} , the coefficients of the interaction terms, which measure the differences between the treatment and control groups after MSP went into effect and began to be enforced. Their predicted signs are negative. We would also expect δ_{96-06} to be larger in magnitude than δ_{84-94} as a result of increased enforcement.

We estimate (1) for men and women separately. We initially include all individuals in the sample, whether or not they participate in the labor force. Our dependent variables in this case are labor force participation and insurance coverage indicators. We then restrict the sample to individuals in the labor force. Our dependent variables for this restricted sample are indicators for full-time employment and health insurance coverage. Finally, we restrict the sample further to individuals who work full time. The restricted samples are intended to capture shifts in employment from full-time to part-time work, or from employers that provide health coverage to ones who do not.

Table 3

| | Dependent variable | Males | | Females | |
|---|--|-----------------------|-----------------------|-----------------------|-----------------------|
| | | δ_{84-94} | δ_{96-06} | δ_{84-94} | δ_{96-06} |
| Sample: All individuals | Labor force Participation | 0.0436 [0.0269] | 0.1132*** [0.0272] | -0.0220 [0.0265] | -0.0021 [0.0266] |
| | Employer-provided coverage | 0.3843*** [0.0287] | 0.4902*** [0.0292] | 0.3485*** [0.0278] | 0.3909*** [0.0283] |
| | Policy-holder for employer-provided coverage | 0.4773*** [0.0298] | 0.6261*** [0.0302] | 0.3360*** [0.0321] | 0.3628*** [0.0324] |
| Sample: Individuals in the labor force over the entire period | Full-time employment | 0.1496*** [0.0477] | 0.2893*** [0.0480] | 0.1267** [0.0534] | 0.1422*** [0.0531] |
| | Employer-provided coverage | 0.2021*** [0.0460] | 0.3164*** [0.0463] | 0.0676 [0.0547] | 0.1095** [0.0544] |
| | Policy-holder for employer-provided coverage | 0.2713*** [0.0457] | 0.4125*** [0.0460] | 0.1207** [0.0547] | 0.1513*** [0.0543] |
| Sample: Individuals working full time over the entire period | Employer-provided coverage | 0.0972* [0.0587] | 0.1992*** [0.0586] | 0.0432 [0.0822] | 0.0544 [0.0812] |
| | Policy-holder for employer-provided coverage | 0.1324** [0.0578] | 0.2660*** [0.0577] | 0.0864 [0.0810] | 0.1268 [0.0798] |

* Statistically significant at the 10% level.

** Statistically significant at the 5% level.

*** Statistically significant at the 1% level.

Probit estimates of the key parameters of (1) are presented in Table 3.⁷ Our estimates of δ_{84-94} and δ_{96-06} are generally positive and statistically significant, and δ_{96-06} is generally larger in magnitude than δ_{84-94} . This is, of course, inconsistent with our prediction. As discussed

⁷ The results are not substantially different if we use a logit or linear probability model instead. They also do not change if we exclude the controls for individual characteristics and the time dummies.

above, these results are explained by the relaxation of the Social Security earnings test that occurred in these periods. In addition, the current Medicare treatment of workers and non-workers may blunt the impact of raising the Social Security normal retirement age (NRA) on retirement age. The NRA will soon be 66 and will advance to 67 by 2022. However, the age of eligibility for Medicare is scheduled to remain 65. If someone works between 65 and 67, they effectively give up their Medicare entitlement. Of course, their opportunity to work and their net wage from working is reduced by the current Medicare treatment. One policy (advancing the NRA) tends to encourage working to older ages while the other (Medicare's coverage being contingent on not working for an employer with health benefits) discourages it.

5. Conclusion

Medicare as a Secondary Payer legislation was developed to better target health insurance for the elderly to individuals who did not have access to insurance from their employer. However, anti-crowd out measures often distort labor market behavior, and given high health care expenditures among the elderly, MSP creates a significant implicit tax on working beyond the age of Medicare eligibility. By working at a firm that offers health insurance to its employees, workers are effectively foregoing their Medicare benefits. We find that this creates a 15 to 70 percent implicit tax on working beyond age 65. Eliminating this implicit tax by making Medicare a primary payer regardless of an individual's employment status, along with eliminating other provisions that discourage long careers, could have a significant effect on lifetime labor supply. In addition, increased personal income tax revenues would likely offset the additional cost of providing Medicare benefits to the working population that is currently covered primarily by private health insurance from their employers. The effect of the provision

thus far is difficult to determine given periods of less stringent enforcement and the concurrent easing of the Social Security earnings test. However, given the high labor supply elasticities of older workers, eliminating the large tax on working that is created by MSP could potentially have a significant effect.

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