

Tax Elasticity of Labor Earnings for Older Individuals

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14th Annual Joint Conference of the Retirement Research Consortium

August 2-3, 2012
Washington D.C.

This research was supported by a grant from the U.S. Social Security Administration (SSA) as a part of the Retirement Research Consortium (RRC). The findings and conclusions are solely those of the authors and do not represent the views of the SSA, any agency of the Federal Government, the NBER Retirement Research Center, CRR, or MRRC. We would like to thank Dan Feenberg for assistance with the NBER Taxsim program and Susan Rohwedder for providing RAND HRS input data files for Taxsim.

Taxes impact individual labor supply decisions. A vast literature studies the ramifications of income taxes on hours worked, occupational choice, and labor force participation for the working age population. There is little work, however, on the tax responsiveness of labor supply decisions for older individuals. In much of the labor supply literature on the effects of taxes, older people are excluded from the analysis. Consequently, we have little evidence about the importance of income and payroll taxes on the labor supply of this population. However, this is a group that is potentially very responsive to the incentives generated by the tax schedule. Our work fills a major gap in the tax and labor supply literatures by studying the effect that taxes have on both the intensive and extensive labor supply decisions of older workers.

The labor earnings of older workers are an important policy concern as they can supplement savings and compensate for potential reductions in Social Security benefits. Policymakers are frequently interested in mechanisms which can increase the labor earnings of older individuals in the United States by encouraging work or delaying retirement. There are many incentives to retire or work less at older ages due to Medicare, pensions, and Social Security. Income and payroll taxes have only rarely been considered as a means of incentivizing people to delay retirement or work more. The United States tax code generally treats older and younger individuals in a similar manner, with a few small exceptions such as the age 65+ deduction and elimination of the EITC.

However, the tax code could be more actively used to encourage older people to earn more and remain in the labor force. Age is an observable variable which likely proxies for different levels of productivity and attachment to the labor market (see Banks and Diamond 2010). Age-specific taxes could target incentives to encourage work and labor force participation for older people.

The payroll tax is an example of tax which could easily be altered to exclude people eligible for Social Security. Social Security taxes can imperfectly be viewed as a forced savings mechanism for most of the population. However, Social Security recipients cannot increase their benefits through additional labor income, converting the payroll tax into a pure tax. Elimination of the payroll tax at certain ages or after Social Security receipt could drastically change the incentives for individuals to remain in the workforce or retire. For most of the population in our data, the payroll tax reduces an

individual's labor earnings by 15.3%, assuming that workers bear the burden of the employee and employer portion of the payroll tax. If older workers are especially responsive to taxes, then a reduction in taxes equal to the size of the payroll tax - or only the employee portion of the payroll tax – could have economically important effects on labor earnings, labor force participation, and retirement decisions.

Data and Empirical Approach

Our analysis utilizes the 2000-2008 Health and Retirement Study (HRS), a longitudinal data set of people ages 55 and above. We use the demographic and detailed income information in these data to derive tax variables with the NBER Taxsim program.

Studying the impact of taxes on an older population faces an empirical challenge beyond those found in the previous tax literature. This is a population in which the decision to participate in the labor force or retire is an important component. Thus, it is critical to model and estimate the impact of taxes on both the intensive and extensive margins of labor supply. Individuals who are not working are likely different from individuals who are working and not accounting for their differences could bias our estimation of the impact of taxes. The literature on labor supply has developed methods for addressing this issue in the case of secondary earners and we extend and improve on these methods for our population (Eissa and Hoynes 2004; Eissa, et al. 2008).

Our paper models intensive labor earnings as a function of the marginal net-of-tax rate – the fraction of an additional dollar in earnings that the individual keeps – and after-tax income. This is a standard approach in the tax and labor supply literatures (Gruber and Saez 2002). We model the decision to participate in the labor force or retire as a function of the individual's potential labor earnings net of the additional taxes that the individual would pay due to those labor earnings (i.e. the after-tax labor earnings). Understanding both of these dimensions of labor supply is critical for our estimates. Simply excluding non-workers from the intensive labor supply analysis assumes that the non-workers are not working for reasons unrelated to taxes. Similarly, estimating the impact of taxes on the decision to work requires knowledge of the amount that individuals would earn and pay in taxes if they participated in the labor force.

In any analysis of the effect of taxes on individual behavior, researchers must also account for the mechanical relationship between taxes and earnings since a person's tax

rates and tax liability, in general, increase with earnings. We predict changes in taxes using legislative tax schedule changes (Auten and Carroll 1999; Gruber and Saez 2002) and predictable income shocks due to spousal retirement which shift individuals' marginal tax rates and tax liability independently from their labor supply decisions. During the time period of our analysis, there were two major tax changes – the Economic Growth and Tax Reconciliation of 2001 and the Jobs and Growth Tax Relief Reconciliation Act of 2003. Also, as shown in Table 1, a spouse's retirement generates a large shock to marginal tax rates for the working spouse.

Table 1: Own Marginal Tax Rates and Spousal Retirement between Periods t and $t+2$ among Dual Earner Couples, Ages 60-70

	Spouse Does Not Retire in Next Period	Spouse Retires in Next Period
	(1)	(2)
<u>Panel A: Women</u>		
MTR (year t)	30.8	30.1
MTR (year $t+2$)	28.5	19.0
Predicted MTR (year $t+2$)	29.3	22.6
<u>Panel B: Men</u>		
MTR (year t)	30.3	28.0
MTR (year $t+2$)	27.7	18.1
Predicted MTR (year $t+2$)	28.7	23.7

The tax reforms and spousal retirement shocks have differential effects throughout our sample and we compare people with similar characteristics facing relatively large changes in their taxes to those facing relatively small ones.

Results

Our empirical analysis finds potentially large effects on the intensive margin for workers aged 55 and over. However, due to the statistical imprecision of these estimates, we also cannot reject the absence of an effect. Thus, we find only suggestive evidence that older workers respond to the marginal tax rate when making decisions affecting labor earnings. On the other hand, we find that these individuals are very responsive on the extensive margin in both a statistically and economically meaningful way. We estimate that older individuals respond to tax-driven changes in the amount that they would earn in after-tax labor earnings if they worked. Table 2 shows our main results. These estimates suggest that an increase in an individual's potential after-tax labor income increases

likelihood of working for men and women. For men, we see similar but opposite effects on the probability of retiring.

Table 2: Extensive Margin Labor Supply Responses to Taxes

Dependent Variable:	Employed		Retired	
	Women	Men	Women	Men
	(1)	(2)	(3)	(4)
Log After-Tax Labor Income	0.143*** (0.051)	0.186*** (0.054)	-0.021 (0.040)	-0.091*** (0.032)
Observations	8,411	7,571	8,411	7,571

Notes: Significance levels: *10%, **5%, ***1%; control variables are also included.

To ease the interpretation of these results, our paper simulates the ramifications of an age-specific elimination of the employee portion of the payroll tax, a policy previously considered in a more structural lifecycle framework in Laitner and Silverman (2012). In our sample, 25% of working women and 26.2% of working men are no longer working 2 years later. The elimination of the employee portion of the payroll tax would reduce each of these exit probabilities by 1.8 percentage points, a 7% decrease in the proportion of workers exiting the labor force. These results suggest that tax policy can have economically important ramifications on the labor supply decisions of older individuals and that this is a fruitful avenue for future research and policy considerations.

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