



# The responsiveness of self-employment income to tax rate changes

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## ABSTRACT

This paper estimates the extent to which self-employment income responds to changes in the net-of-tax share using a panel of tax returns that spans 1987–1996. The results suggest that the elasticity of reported self-employment income to the net-of-tax share is approximately .9, implying a real elasticity (net of any reporting response) of around .4. Estimated elasticities tend to be larger for higher income taxpayers, married males, and females. In addition, the elasticity of self-employment income is considerably larger than the elasticity wage and salary income estimated using the same methodology.

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## 1. Introduction

Knowledge of the extent to which the work behavior of taxpayers responds to changes in tax rates is a vital element in understanding the efficiency costs of raising revenue and the revenue effects of changes in tax rates. As a result, numerous studies have examined the effect of changes in tax rates on labor supply behavior. Further, a sizable literature has developed attempting to estimate a parameter that reflects the responsiveness of all sources of income together (or of taxable income, which comprises income less deductions and exclusions) to changes in tax rates.<sup>1</sup> This paper adds to both of these literatures by using a panel of tax returns to examine the extent to which the income of a particular segment of the population, the self-employed, responds to changes in tax rates.

Numerous studies have estimated the responsiveness of wage and salary workers' labor supplies to changes in wages and nonlabor income. This is likely due to the fact that the vast majority of individuals are wage and salary employees, and as [Blow and Preston \(2002\)](#) note, the hours and participation margins are the predominant margins along which work behavior of these individuals are likely to respond.<sup>2</sup> This literature has tended to find very small hours elasticities for men and larger though still modest hours elasticities for women, with participation elasticities for women that tend to be larger than the hours elasticities.<sup>3</sup>

Much less attention has focused on the behavior of the self-employed, even though the self-employed are not a trivial share of workers in the United States. As an illustration, the Internal Revenue Service (IRS) reported that 12.7 million tax returns in 1994 paid some amount of self-employment tax, which amounted to 11% of all returns filed that year.<sup>4</sup> In addition, the Small Business Administration reports that 60–80% of net new jobs are created by small businesses, and that small businesses create more than half of the non-farm private gross domestic product.<sup>5</sup> As a result, small businesses are often viewed as the engines of innovation, job creation, and future growth in the economy.

Despite this, papers that study labor supply tend to exclude the self-employed, and most of the papers that have examined self-employment behavior have limited their focus to whether tax rates affect the decision of whether or not to be self-employed.<sup>6</sup> Several of these papers, including [Long \(1982\)](#), [Moore \(1983\)](#), [Blau \(1987\)](#), [Parker \(1996\)](#), and [Scheutze \(1998\)](#) find that higher marginal tax rates lead to self-employment. However, [Fairlie and Meyer \(1999\)](#) find that levels of self-employment are unrelated to marginal tax rates over the period 1910–90, and [Moore \(2003\)](#) finds that tax changes in the late 1980s and 1990s do not appear to have had a consistent significant effect on the self-employment decision. [Gentry and Hubbard \(2000\)](#) find that the level of marginal tax rates does not have a consistent effect on entry into self-employment, but that more progressive taxation tends to decrease entry into self-employment. In two papers, [Bruce \(2000, 2001\)](#) examines the response of entering into and exiting out of self-employment to differences in the tax rates that would be faced in wage work and self-employment, and finds

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<sup>1</sup> For a recent comprehensive survey of this literature, see [Saez et al. \(2009\)](#). See also surveys in [Gruber and Saez \(2002\)](#) and [Giertz \(2004\)](#).

<sup>2</sup> Other possible responses include changes in jobs and changes in the form of compensation between taxable wages and nontaxable fringe benefits.

<sup>3</sup> For good surveys of this literature, see [Hausman \(1985\)](#), [Killingsworth and Heckman \(1986\)](#), [Pencavel \(1986\)](#), and [Blundell and MaCurdy \(1999\)](#).

<sup>4</sup> See [Internal Revenue Service, Statistics of Income Division \(1994\)](#), Table A.

<sup>5</sup> See <http://www.sba.gov/advo/stats/sbfaq.pdf>.

<sup>6</sup> For a survey of studies that have examined other determinants of self-employment in several countries, see [Le \(1999\)](#).

that workers who switched into self-employment tended to be those who faced higher tax rates in self-employment than they would at a wage earning job.

Compared to the large literature estimating the responsiveness of self-employment to taxes on the extensive margin, relatively little is known about the extent to which the incomes of self-employed individuals respond to changes in tax rates on the intensive margin.

The responsiveness of self-employment income to marginal tax rates could take several forms. First and most importantly, there could be a real effect, in that higher tax rates might induce the self-employed to consumer more leisure and work fewer hours, exert less effort within a given set of hours, and invest less in their business given that the after-tax return to earning the marginal dollar has gone down. Second, there could be a reporting effect, in that the gap between the income of the self-employed individual (net of expenses) and the amount reported to the Internal Revenue Service may increase when tax rates are higher and the payoff from such tax avoidance is greater. Third, there could be a tax base effect, in which higher tax rates might lead a self-employed person to change their business form to a corporation (that is subject to the corporate income tax) if the resulting taxes would be lower.<sup>7</sup>

Recent papers that have examined the behavior of the self-employed have generally focused on one of these margins in isolation. In two papers, Carroll et al. (2000a,b), find that a higher net-of-tax share (one minus the marginal tax rate) increases the probability that an entrepreneur invests, the probability of hiring of outside help, and the total wage payments to workers. Carroll et al. (2001) find that a higher net-of-tax share increases the growth rate of gross receipts. Clotfelter (1983) and Joulfaian and Rider (1998) examine the extent to which higher marginal tax rates increase the underreporting of self-employment income. This study attempts to synthesize this literature by examining the extent to which the response along these and other margins aggregate up to an overall effect on reported self-employment income.

Most closely related to this study are those of Blow and Preston (2002) and Wu (2005). Blow and Preston (2002) use a grouping estimator on repeated cross-sectional tax return data from the 1985–86 and 1995–96 UK Surveys of Personal Incomes to examine the responsiveness of self-employment income to tax rates. In OLS regressions, they find a negative effect of the net-of-tax share on self-employment income, but this turns positive and significant when instrumental variables are used. Wu (2005) uses data from the 1983 and 1989 Survey of Consumer Finances to estimate the responsiveness of rates of return to changes in tax rates, and estimates an elasticity in excess of 5. In contrast to these studies, this paper uses panel data, making it possible to include fixed effects to control for unobserved characteristics of individuals (such as tolerance for risk) that might affect both the amount of self-employment income and the marginal tax rate. In addition, those papers examined the effect of income tax rate decreases, whereas the major policy changes during the sample period in this paper (the Omnibus Budget Reconciliation Acts of 1990 and 1993) involved tax rate increases.

Though estimates of the taxable income elasticity implicitly incorporate within them the responsiveness of the self-employment income to changes in tax rates, policymakers are interested in the extent to which entrepreneurial behavior in particular is affected by taxation. The estimation of an overall elasticity of self-employment income to marginal tax rates provides policymakers with a useful summary parameter to evaluate the effects of potential tax changes on all of the margins on which the self-employed can respond.

<sup>7</sup> This is related to a point made in Slemrod and Kopczuk (2002), that the elasticity of taxable income is a function of institutional features of the tax code. Because different tax rates are levied on different bases of income, the elasticity of self-employment income may be higher because of the ability to shift income to (or from) bases with lower (or higher) tax rates.

Using a panel of tax returns that spans 1987–96, this paper applies estimation methods that have been used in estimating the overall elasticity of taxable income to the estimation of self-employment income in particular. The results suggest that the elasticity of reported self-employment income to the net-of-tax share is approximately .9, implying a real elasticity (net of any reporting response) of around .4. The results suggest that the responsiveness to taxes tends to be larger for higher income taxpayers, married males, and females. In addition, the elasticity of self-employment income is considerably larger than the elasticity of wage and salary income estimated using the same methodology.

The paper proceeds as follow. Section 2 describes tax policy in the United States toward self-employment income. Section 3 presents the estimation methodology, Section 4 describes the dataset used, and Section 5 presents the estimation results. Section 6 concludes.

## 2. Tax policy toward self-employment income

In the United States, a tax unit may consist of an individual or a married couple, along with any dependents. Married couples may file jointly or separately, but the vast majority of married couples file jointly. For married taxpayers filing jointly, the first person listed on the tax return is called the primary filer, while the second person is called the secondary filer. All single taxpayers are considered to be primary filers.

Income from a self-employed individual's business is reported on the form that corresponds to their type of business. Sole proprietorships report business income on Schedule C, partnerships and S corporations<sup>8</sup> report income on Schedule E, and farms report income on schedule F. Income from each of these types of business are then added to income from other sources (such as from wages and salaries) on a taxpayer's Form 1040, and are subject to individual income tax.<sup>9</sup>

During the period examined in this study, three major federal tax law changes, including the Tax Reform Act of 1986 (TRA86) and the Omnibus Budget Reconciliation Acts of 1990 and 1993 (OBRA90 and OBRA93) altered the tax rates that applied to individual income. In 1987 and 1988, TRA86 was phasing in, so that in 1987, there were five brackets with rates increasing from 11% to 38.5%, while in 1988 there were effectively four tax brackets with rates increasing from 15% to 33% and then decreasing to 28% in the highest income bracket. OBRA90 effectively increased the top bracket to 31% in 1990, and then combined the 33% and 31% brackets into a 31% bracket in 1991. Finally, OBRA93 broke the previous 31% bracket into three brackets in 1993, with rates of 31%, 36%, and 39.6%. Federal tax rates remained at this level through the rest of the sample period. During the sample period, there were also a number of tax changes at the state level.

Income from self-employment is also subject to Self-Employment Contributions Act (SECA) taxes, which are calculated on Schedule SE. These constitute a self-employed individual's contributions to the Social Security and Medicare programs, and are similar to Federal Insurance Contributions Act (FICA) taxes that are paid on wage and salary income (which are also contributions for Social Security and Medicare), with two differences. First, the SECA tax rate of 15.3% is levied on 92.35% of self-employment income,<sup>10</sup> while for FICA taxes the employee and employer each pay 7.65% of the employee's wages

<sup>8</sup> The IRS defines an S corporation as a corporation that elects to pass corporate income, losses, deductions and credit through to their shareholders for federal tax purposes. An S corporation must have only one class of stock and must have less than 100 shareholders.

<sup>9</sup> A taxpayer may also elect to incorporate their business as a C corporation, in which case the income from the corporation would be taxed at the corporate level, and any wages from the corporation would be subject to individual income tax.

<sup>10</sup> Up to a threshold, beyond which the rate was 0% in 1993 and before and 2.9% starting in 1994.

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