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The Response of the Self-employed to the Tax Reform Act of 1986

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THE RESPONSE OF THE SELF-EMPLOYED TO THE TAX REFORM ACT
OF 1986

by

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A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Business Economics
in the College of Business Administration
and in The Burnett Honors College
at the University of Central Florida
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Thesis Chair: Dr. Melanie Guldi

Abstract

The decisions of the self-employed are of empirical interest because these individuals report their income under the personal income tax system. The U.S. Bureau of Economic Analysis estimates that the personal income tax system is the biggest source of revenue for the government. In this paper I use data from the Panel Study of Income Dynamics (PSID) to analyze the effect that The Tax Reform Act of 1986 had on the decision to become or remain self-employed. To accomplish this I will use a simple difference method that compares the movement between employment groups in the aftermath of The Tax Reform Act of 1986 (treatment period) to the movement between employment groups before this tax legislation was enacted (control period). I find that The Tax Reform Act of 1986 (TRA86) had an adverse effect on self-employment and actually caused more unemployment.

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Table of Contents

List of Figures	v
Introduction	1
The Tax Reform Act of 1986.....	4
The Labor/Leisure Tradeoff	6
Empirical Studies	11
Labor Supply	11
Taxable Income	13
Data and Methodology	18
Results	21
Conclusion	25
Appendix A: Marginal Tax Rates in 1985 and 1988	27
Appendix B: Data Validation	29
Appendix C: Results	35
References	39

List of Figures

Figure 1.....	7
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Introduction

In 1913 congress passed a constitutional amendment that allowed the government to tax citizens' income. At the time this decision was quite controversial (Goolsbee, 1999). Today, although most Americans will agree that some form of tax system is needed to fund the social programs and public goods and services that are intended to benefit citizens, the tax debate is ongoing. When the tax system is changed congressional legislation is required. This means that elected officials will ultimately decide the future of the tax system.

According to data from the U.S. Bureau of Economic Analysis, in 2005, the personal income tax was the biggest source of revenue for the government (Slemrod & Bakija, 2008). Small businesses account for 93 percent of all business entities in the United States and their income is taxed at the personal level (Slemrod & Bakija, 2008). A small business is defined by The U.S. Small Business Administration (SBA) as an independent business having fewer than 500 employees (Monthly Labor Review [MLR], 2007). These firms are responsible for more than half of the non-farm private Gross Domestic Product (GDP) (Heim, 2009). Furthermore, the Bureau of Labor Statistics estimates that small businesses were responsible for 63.7 percent of the net job gains during the period of June 1990 to September 2005 while retaining only 56.7 percent of the economy wide employment (MLR, 2007). Looking at these statistics it is easy to see that small businesses are a vital part of the American economy.

The owner of a small business can be considered self-employed. A self-employed person works for the profit derived from their business, profession, or farm. Carroll et al. (2001) classifies tax filers that report schedule C income as entrepreneurs. An individual who files a

schedule C is a sole proprietor and is also considered to be a self-employed person.

Entrepreneurs are known for their risky and innovative behavior as it relates to business. The self-employed need not always have innovative business ideas, but there is always an inherent risk to self-employment. In this thesis I will use the terms self-employment and entrepreneurship interchangeably.

Research has shown that there is more variance in the earnings of entrepreneurs when compared to wage and salary workers as well as a positive skew (Åstebro and Chen, 2012). This suggests that the returns to entrepreneurship are relatively more uncertain and it is most likely that an individual will receive below average returns in their tenure as an entrepreneur. This is in spite of the fact that entrepreneurs generally work more hours relative to wage and salary workers (Åstebro and Chen, 2012). However, many individuals still aspire to run their own business.

In the next section, I will summarize the Tax Reform Act of 1986 and the setting in which it was enacted. Section III discusses the microeconomic thinking behind labor supply and its implications on government tax revenue. Section IV will review the literature in a way that builds upon the previous section and will conclude with empirical studies that are similar to mine. Section V introduces the data and the methods that I will use. I create two time periods, one time period will occur before the variation in marginal tax rates and the other will encompass the tax legislation. Then, I compute the difference in the change and percentage change between these two periods for the various employment groups. I interpret these results as the change in

employment groups after The Tax Reform Act of 1986. My results will be detailed in section VI, and in section VII I will conclude the paper.

The Tax Reform Act of 1986

The Tax Reform Act of 1986 (TRA86) was enacted in October 1986. During this year the civilian unemployment rate ranged between 6.6 percent and 7.2 percent, with a yearly average of 7.0 percent. According to the National Bureau of Economic Research's (NBER) definition of recessionary and expansionary periods, this legislation was enacted during an expansionary period. The most recent recession prior to the enactment of the Tax Reform Act of 1986 began during the second half of 1981 and continued throughout most of 1982. The president at the time was Ronald Reagan and there was a federal budget deficit of about \$2.2 billion. President Reagan believed that lower marginal tax rates would provide individuals with an incentive to work and produce more (Perloff, 2008). He predicted that this would cause government tax revenue to increase despite the lower tax rates (Perloff, 2008). This ideology is based on the implications of the downward sloping section of the Laffer Curve.

TRA86 reduced the highest marginal tax rate from 50 percent to 33 percent and increased the lowest marginal tax rate from 11 percent to 15 percent. Thus, this tax legislation decreased the highest marginal tax rate by 34 percent while increasing the lowest marginal tax rate by approximately 36 percent. Although the lowest marginal tax rate was increased, TRA86 increased the dependent exemption and the standard deduction (Feldstein, 1995). For example, the dependent exemption and standard deduction for taxpayers filing as head of household increased from \$1,086 to \$1,950 and \$2,480 to \$4,400, respectively (Eissa, 1996). This removed an estimated 6 million low income taxpayers from the tax system (Eissa, 1996).

To account for the lost revenue due to less taxpayers being subject to taxation and lower marginal tax rates the tax base was widened and the effective tax rate paid by corporations was increased. One way the tax base can be widened is when specific tax deductions are eliminated causing more income to be subject to taxation. The Tax Reform Act of 1986 disallowed the use of real estate partnership investment losses greater than \$25,000 to offset other income (Feldstein, 1995). TRA86 actually reduced corporate tax rates, but increased the effective tax rate paid by corporations by eliminating the investment credit and scaling back depreciation allowances (Bosworth and Burtless, 1992). The increase in effective tax rates will make corporations a less attractive type of business. This may cause a decrease in the rate at which individuals exit self-employment and increase the rate at which individuals enter self-employment. All other things being equal, I expect there to be an increase in the number of self-employed persons after TRA86. The change in the structure of the corporate income tax system is beyond the scope of this paper, but I include details of this change because it was a contributing factor that allowed TRA86 to be deemed revenue neutral.

The Bush era tax legislations led to temporary changes in marginal tax rates, but the Tax Reform Act of 1986 is the most recent attempt at a *permanent* reduction in marginal tax rates and a simplification of the tax system. Before the passage of TRA86 there were over a dozen different marginal tax rates ranging from 11 percent to 50 percent (Appendix A). This tax legislation reduced the number of income tax brackets to four with only three different marginal tax rates. In what follows, I describe the relationship between the income tax system and the supply of labor.

The Labor/Leisure Tradeoff

A labor supply curve shows the number of hours an individual would like to work as a function of the wage earned (Perloff, 2008). Every individual is bound by a 24 hour time constraint and must choose how to spend their time between labor and leisure. Labor is defined as time spent earning a wage and leisure is defined as time spent not earning a wage. By definition, labor and leisure are perfect substitutes and any time that is spent on leisure cannot be spent earning a wage. For this reason, the cost of leisure is the wage that a worker could have earned working (Perloff, 2008).

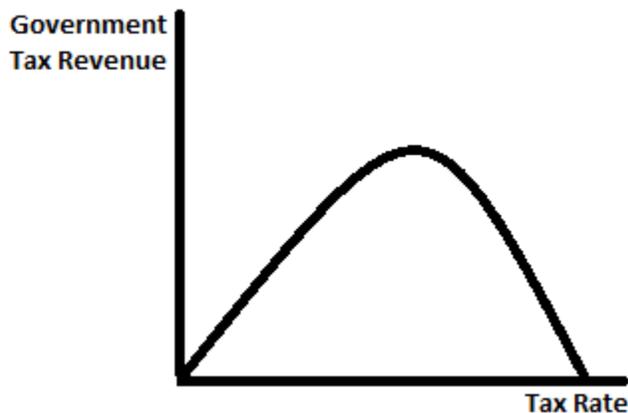
When a worker's wage increases leisure will become more expensive than it once was (Perloff, 2008). The substitution effect states that when the price of leisure rises a worker will demand less leisure and supply more labor. Simultaneously, there is an income effect taking place. If leisure is a normal good the income effect will work in the opposite direction of the substitution effect and when wage increases so will the quantity of leisure demanded. The dominating effect will determine the outcome of this interaction. Conversely, if leisure is an inferior good the income effect will work in the same direction as the substitution effect and an increase in wage will cause less leisure to be demanded and more labor to be supplied.

The Laffer curve depicts the relationship between tax rates and tax revenue where tax revenue is graphed on the vertical axis and the tax rate is graphed on the horizontal axis. Although no one knows the true shape of the Laffer Curve, it is generally accepted in economics that there is a tax revenue maximizing tax rate. The Laffer effect is a concept that is commonly associated with supply-side economics (Hailstones, 1982). This effect occurs when the tax rate is

in the downward sloping section of the Laffer Curve. In the downward sloping section of the Laffer Curve, decreasing the tax rate will actually increase tax revenue.

Figure 1

The Laffer Curve



The theory behind the Laffer Curve can be described more thoroughly when the principles of labor supply are applied. Consider a reduction in tax rates which effectively increases wage when leisure is a normal good. If wage lies in the upward sloping section of the labor supply curve, an increase in wage will cause less leisure to be demanded and more labor to be supplied. Therefore, the substitution effect dominates the income effect. In contrast, when wage is in the backward-bending section of the labor supply curve an increase in wage will lead to a decrease in labor supply and consequently an increase in leisure demand. Here the income effect dominates the substitution effect.

When leisure is considered an inferior good a reduction in tax rates will cause more labor to be supplied and less leisure to be demanded. This result is analogous to the result when leisure

is considered a normal good and the substitution effect dominates the income effect. This means that in the upward sloping section of the labor supply curve leisure can be considered a normal or an inferior good. However, in the backward-bending section of the labor supply curve leisure can only be considered a normal good.

The substitution and income effects from above work in the opposite directions when dealing with a tax increase. An interesting implication of the Laffer Curve is that increasing tax rates above a certain rate will have an adverse effect on tax revenue. The work of Feldstein and Feenberg (1996) is related to the theory of the Laffer Curve because they estimate the projected tax revenue gains and observe the real tax revenue gains that can be attributed to the Omnibus Budget Reconciliation Act of 1993 (OBRA93). OBRA93 raised the marginal rates for taxable income over \$140,000 (Feldstein and Feenberg, 1996). If there are no behavioral responses to OBRA93 they estimate that government tax revenue should increase by \$19.3 billion.

Feldstein and Feenberg (1996) find that OBRA93 generated an additional \$8.4 billion in government tax revenue. They conclude that because OBRA93 failed to raise the projected additional tax revenue that would have been raised in the absence of any behavioral responses that there is deadweight loss. This may be true; however, the theory of the Laffer Curve does not take efficiency into account. The fact that OBRA93 raised additional tax revenue suggests that tax rates are not high enough to be in the downward sloping section of the Laffer Curve.

The equation to compute tax revenue is

$$R=(t \cdot \hat{w}) * S(w) \text{ (Perloff, 2008).}$$

Where t is equal to the tax rate, \hat{w} is equal to the before-tax wage, and $S(w)$ is equal to the labor supplied as a function of the after-tax wage ($S((1-t)\hat{w})$). $S(w)$ will be referred to as labor supply hereafter. If the tax rate is zero, the first term in the equation is zero and tax revenue is also zero. If the tax rate is 1, workers will pay their entire wage in tax and no one will be willing to supply labor (Hailstones, 1982). The Laffer Curve explores the change in tax revenue in response to a change in the tax rate, $\frac{dR}{dt}$. This is equal to

$$\hat{w}[S(w) - t \frac{dS(w)}{dw} \cdot \hat{w}]. \quad (1)$$

When (1) is negative tax revenue will decline. Since the before-tax wage and labor supply will never be negative, (1) can only be negative when

$$\frac{dS(w)}{dw} > 0.$$

This inequality is true when wage is in the upward sloping section of the labor supply curve and is false when wage is in the backward-bending section of the labor supply curve. In other words, tax revenue can only decrease in response to a change in the tax rate when the change in wage and the change in labor supply are positively correlated.

Using algebra we can rewrite (1) as

$$\frac{dS(w)}{dw} \frac{w}{S(w)} > \frac{1-t}{t} \text{ (Perloff, 2008)}. \quad (2)$$

If (2) holds then the Laffer effect will occur (Perloff, 2008). The term on the left hand side of (2) is the elasticity of labor supply. This is why labor economists focus on labor supply elasticities when analyzing the Laffer Curve. The size of labor supply elasticities can be used to indicate how responsive workers are to changes in their wage. The sign of labor supply elasticities

indicate the direction of the change in labor supply. Positive elasticities indicate that an increase in wage will lead to an increase in labor supply and suggests an upward sloping labor supply curve. While negative elasticities imply that an increase in wage will lead to a decrease in labor supply and are associated with a backward-bending labor supply curve.

Empirical Studies

Labor Supply

Labor economists have examined data to estimate the effects that taxes have on labor supply. In 1990, Triest used data from 1984 to estimate the effect that income taxation has on male and female labor supply. His results show that male labor supply is inelastic. He finds that females have larger elasticities than men, but the size of the elasticity decreases when women who do not work are removed from the sample. A caveat to the female labor supply elasticities reported in Triest (1990) is that he assumes that wives take their husband's labor decisions as given when making their labor decisions. Also, in his sample the self-employed are eliminated.

Bosworth and Burtless (1992) and Eissa (1996) build upon the results of Triest (1990) by analyzing labor supply in response to the tax rate changes of the 1980s. Individuals in different parts of the income distribution are treated differently based upon their income and filing status. The Economic Recovery Tax Act of 1981 (ERTA81) and TRA86 significantly reduced marginal tax rates on the highest incomes. Therefore, the largest response to these tax rate changes should be at the upper tail of the income distribution if taxes affect an individual's labor supply (Bosworth & Burtless, 1992).

Although there were two tax legislations that were enacted in the 1980s, Bosworth and Burtless (1992) do not attempt to disentangle the effects of one from the other. However, Eissa (1996) does attempt to separate the effects. The results from Bosworth and Burtless (1992) show

that the labor supplied by males and females in 1989 were 6 percent and 5.4 percent above their predicted levels, respectively.¹

Eissa (1996) uses a data set from the March Current Population Survey that includes several years after the Omnibus Budget Reconciliation Act of 1990 (OBRA90) was enacted. The variation in labor supply that occurred between 1987 and 1993 is attributed to TRA86. It is possible that some of the effects from OBRA90 are included in the reported effect from TRA86. The possibility of a lagged effect is mentioned, but it is primarily used to state that the TRA86 effect could include a lagged effect from ERTA81. It should be noted that the tax rate increases from OBRA90 were small relative to ERTA81 and TRA86.

The results of Eissa (1996) show that in the TRA86 period (1987-1993) all measures of male labor supply increased with respect to the ERTA81 period (1982-1986).² However, the levels of the TRA86 period were still below those of the pre-tax reform period (1976-1981). This may indicate that the economy was still recovering from the 1981 recession. When a regression is run using time trends the trend of decline in all measures is reversed after the enactment of the tax legislations of the 1980s.

Eissa (1996) separates her sample by educational attainment while Bosworth and Burtless (1992) use the income distribution. The results in Eissa (1996) indicate that males with less than a high school education had the largest response to the changes in tax rates that transpired during the 1980s. Bosworth and Burtless (1992) find that the lowest quintile increased their labor supply the most for both men and women. These results are in agreement because a low level of

¹The predicted levels were calculated using the trend from the 1970s.

² The measures are annual participation, percent of weeks worked, and annual hours worked.

education is often associated with a low income level. Bosworth and Burtless (1992) conclude that because the lowest quintile's marginal tax rates were not significantly affected by the tax rate changes of the 1980s the increase in labor supply that occurred during this period is due to factors other than the tax reforms.

The labor supply literature I reviewed suggests positive labor supply elasticities. Therefore, when wage increases the supply of labor will increase and vice versa. As stated earlier, positive elasticities are indicative of an upward sloping labor supply curve. An upward sloping labor supply curve is necessary but not sufficient for the Laffer effect to take place. Using (2) and the marginal tax rates post-TRA86 I compute the labor supply elasticities that would allow the Laffer effect to take place. I find that at tax rates of 15 percent, 28 percent, and 33 percent labor supply elasticities must be greater than 5.6, 2.57, and 2.03 respectively. So, even though estimated labor supply elasticities are positive, the labor supply literature I reviewed does not provide elasticities that are large enough to support the Laffer effect at these marginal tax rates.

Taxable Income

Although the labor supply literature does not indicate that tax rates are in the downward sloping section of the Laffer Curve, the literature estimating the elasticity of taxable income may suggest otherwise. It is common in this literature to calculate the elasticity of taxable income (z) with respect to the net-of-tax share ($1-t$),

$$\frac{dz}{d(1-t)} \frac{(1-t)}{z}$$

This will be referred to as the elasticity of taxable income hereafter. The net-of-tax share is the percentage of earnings that a taxpayer will retain after taxes.

The results of Feldstein (1995) suggest that there is a large response in taxable income to changes in the net-of-tax share. He reports elasticity of taxable income estimates that range from 1.04 to 3.05. Before accepting this conclusion some cautions need to be mentioned. All taxpayers that incurred a highest marginal tax rate of less than 22 percent were excluded in this study. As a result, this paper includes only the highest income earners. A problem with Feldstein's method is that he computes the relative elasticity of taxable income between groups. The fact that the tax system does not treat all individuals the same presents a problem when comparing responses of different groups. It is preferred that a control group is used that experiences little or no change. A control group will better account for omitted variables, mismeasurements, and trends. In addition to this, the methodology does not produce standard errors.

In response to Feldstein (1995), Goolsbee (1999) uses the same methodology to compute the relative elasticity of taxable income. The results of Goolsbee (1999) are lower than those of Feldstein (1995) and range from -0.22 to 2.07. The fact that Goolsbee (1999) uses income in 1985 to divide taxpayers and Feldstein (1995) uses marginal tax rates in 1985 could be a reason the results differ. Goolsbee (1999) builds upon these results by using a regression analysis to obtain standard errors and to include all income groups. The result is an elasticity of taxable income of about 1. I believe that omitted variables bias may be present. Omitted variables bias occurs when relevant independent variables are excluded that are correlated with the included independent variables and the dependent variable. In this analysis the only independent variable

used in the regression is the change in log net-of-tax share. This implicitly states that all of the variation in the dependent variable, the change in the log of income, can be explained by the change in the log net-of-tax share. Goolsbee's (1999) estimate of the elasticity of taxable income may be biased upward as a result.

Goolsbee (1999) suggests that looking at a single tax reform in isolation may not be valid. Instead he suggests that many tax reforms should be analyzed to observe the effects of variations in tax rates on taxable income across multiple generations. Looking at the tax rate changes over several decades Goolsbee (1999) finds that the behavioral responses to TRA86 are greater than those of any other income tax reform in U.S. history.

Gruber and Saez (2000) adhere to Goolsbee's suggestion and use data from 1979-1990 to estimate the elasticity of taxable income. They define income in two ways, broad income and taxable income. Broad income is defined as the total income reported on a Form 1040. Taxable income is the amount of income that is actually taxed. The estimates they report may be biased because some income may be reported as corporate income in subsequent years (Gruber and Saez, 2000).

Gruber and Saez (2000) report an elasticity of taxable income of 0.4.³ The results are lower when the broad income definition is used. They believe that their results are primarily due to the response of taxpayers with very high broad income because their income is more readily manipulated. For instance, individuals with broad income above \$100,000 have an elasticity of taxable income of 0.66. When the income distribution is divided by taxable income instead of

³This elasticity comes from the most complete specification using taxable income.

broad income the responses of taxable income are more equally distributed among income groups. This is because a high broad income does not necessarily mean that an individual will have a high taxable income (Gruber and Saez, 2000).

The larger the elasticity of taxable income the more likely it is that the Laffer effect will occur. If a tax increase leads people to shift their income out of taxable form then the implications of the Laffer Curve are still valid (Goolsbee, 1999). Goolsbee (1999) believes that the elasticity of taxable income is interchangeable with the labor supply elasticity in (2). If this is true the majority of the elasticities reported in the taxable income literature are not large enough to be in the prohibitive range of the Laffer Curve. Whether or not the U.S. is above or below the revenue maximizing marginal tax rate is still the topic of many academic debates.

The literature pertaining to taxable income from Feldstein (1995), Goolsbee (1999), and Gruber and Saez (2000) include self-employment income within their calculations of taxable income. Carroll et al. (2001) analyzes the effects of TRA86 while Heim (2009) focuses on the tax increases of the 1990s (Omnibus Budget Reconciliation Acts of 1990 and 1993). If a change in tax rates results in more people entering a specific business type estimates are overstated and they are understated if they lead people to exit a business type (Heim, 2009).

Carroll et al. (2001) analyses the effect that taxes have on the growth rate of sole proprietors' businesses. He assumes that the change in a business's gross receipts is a measure of growth. Gross receipts are defined as the total amount of income reported on a Schedule C. Capital gains are excluded because less than half of sole proprietors invest in capital assets

(Carroll et al., 2001). Also, capital gains are not taxed until they are realized or are free from taxation entirely if they are held until the proprietor's death (Carroll et al., 2001).

The results of this paper suggest that an increase in a sole proprietors' net-of-tax share $(1-t)$ will cause the gross receipts of a sole proprietor's business to increase. The elasticity of receipts with respect to the net-of-tax share is 0.84. This suggests that if the highest marginal tax rate decreases from 50 percent to 28 percent (the net-of-tax share increases from 0.5 to 0.72) as it did after TRA86, a sole proprietor's gross receipts should increase by about 37 percent.

Heim (2009) analyzed the effect of taxes on not only sole proprietors but also partnerships and farms. He describes three ways taxes might affect self-employment income. Taxes may entice the self-employed to consume more leisure, under report their income, or change the form of their business (Heim, 2009). The elasticity of reported self-employment income with respect to the net-of tax share is 0.9 (Heim, 2009). When reporting responses are taking into account the elasticity falls to 0.4. Carroll et al. (2001) does not account for reporting responses. Besides the studies by Carroll et al. (2001) and Heim (2009) there are no other empirical studies that analyze how taxes affect self-employment income in the United States.

Data and Methodology

My data are drawn from the Panel Study of Income Dynamics (PSID) from years 1984, 1986 and 1989. These files are available to the public through the PSID website, which is maintained and updated by The University of Michigan.⁴ These data report information pertaining to the previous year, so the years under analysis are 1983, 1985, and 1988. These are the years that Feldstein (1995) and Carroll et al. (2001) use when analyzing the effects of TRA86 and an additional year, 1983. The period 1985 – 1988 will be referred to as the TRA86 period. I have added an additional year, 1983, in order to determine if TRA86, and more importantly the reduction of marginal tax rates, has caused movement at the extensive and/or intensive margins of self-employment.

When this year is added another time period can be created, 1983 – 1985. This time period will be referred to as the pre-TRA86 period and will be used to compute the simple difference between both time periods. The simple difference method I use assumes that the trends of exit from and entry into self-employment in the pre-TRA86 period will continue throughout the TRA86 period. My results will be downward biased if the actual trend of movement at the margins of self-employment in the TRA86 period is lesser than the trend in the pre-TRA86. My results are upward biased if the trend is greater in the TRA86 period than the trend in the pre-tax reform period.

⁴ <http://psidonline.isr.umich.edu/>

Pre-TRA86 Period

- (1) Individuals in employment group (1985) – Individuals in employment group (1983)
- (2) (Individuals in employment group (1985) – Individuals in employment group (1983))/Individuals in employment group (1983)

TRA86 Period

- (1) Individuals in employment group (1988) – Individuals in employment group (1985)
- (2) (Individuals in employment group (1988) – Individuals in employment group (1985))/Individuals in employment group (1985)

Simple Difference

- (1) Δ in TRA86 Period – Δ in Pre-TRA86 Period
- (2) $\Delta\%$ in TRA86 Period – $\Delta\%$ in Pre-TRA86 Period

To begin, I obtained data from the Statistics of Income (SOI) Individual Reports for the years under analysis. These reports contain aggregated data on the number of returns and the total amount of self-employment income reported within various adjusted gross income brackets. The PSID data can be manipulated to resemble that of the SOI. Using the total taxable income and the amount of self-employment income reported by the “head” of the family I can compare the two. Although the PSID uses coding that causes negative income to be reported as zero income and a top code of \$99,999, I find that the mean self-employment income and the distribution of returns for each income bracket are comparable (Appendix B).

Now that I have confirmed that the entrepreneurs in the PSID sample are comparable to the population I must uncover the movement that occurred in response to TRA86. The PSID allows one to clearly identify five types of employment statuses. In this paper individuals are grouped by employment status as: employed by someone else only; unincorporated self-employed only; incorporated self-employed only; employed by someone else as well as unincorporated self-employed; employed by someone else as well as incorporated self-employed; or not currently working. This study focuses on the entry into and exit from the pure form of unincorporated self-employment with no other employment. This will be referred to as simply self-employment or entrepreneurship moving forward.

Results

The Tax Reform Act of 1986 not only reduced marginal tax rates in the personal income tax system, but also increased the effective tax rates paid by corporations. These two facts should at the very least provide an incentive for individuals to report their income under the personal income tax system rather than the corporate tax system, if possible. Therefore, people have an incentive to remain and become self-employed. All other things being equal, there should be more individuals reporting a self-employed status after the enactment of TRA86. If this occurs then it may be an accurate statement that individuals take marginal tax rates into account when making decisions about the form of their business.

My sample consists of 58,996 individuals that were classified as a “head” of the household in all three years of data. Although there may have been individuals who were classified as a “head” in one year and not others, I have chosen to focus on the movement of individuals that were classified as a “head” at all three data points. As stated above there are six different employment groups individuals can be classified as. One group that needs further explanation is that of the unemployed.

It is important that I do not over-represent the unemployed group with individuals that are not in the actual labor force. The actual labor force consists of individuals that are age eligible to work and are either employed or unemployed and actively seeking a job (McConnell et al., 2010). Anyone that is institutionalized is also excluded. For this reason I have excluded individuals that report they are retired, disabled, or institutionalized in 1983, 1985, or 1988. I

have excluded students from my sample. This leaves me with a sample that is comprised of household heads that are in the labor force at all three data points.

My data shows that the number of individuals that report self-employment is increasing at a decreasing rate (Appendix C). In my sample the number of self-employed persons increased by 28 percent in the pre-TRA86 period, but only 17 percent in the TRA86 period. It follows that because my data set observes the same group of “heads” from 1983 until 1988 the percentage of my sample that is self-employed increases throughout my analysis. The percentage of my sample that reports self-employment in 1983, 1985, and 1988 is 6 percent, 7 percent, and 9 percent respectively.

Using my simple difference equations from above I find that TRA86 has caused 63 more individuals to become self-employed in my sample. The number of individuals reporting self-employment is increasing at a decreasing rate and therefore this group experiences a negative 2 percent change in self-employment in response to lower marginal tax rates. The employment group consisting of individuals that work for someone else and partake in self-employment experienced a 260 percent increase. In my sample this is equivalent to 603 individuals.

The fact that income earned from working for someone else and from self-employment are both taxed under the personal income tax system and subject to the same marginal tax rates could cause individuals to choose working for someone else over self-employment. However, in my sample I find that 1,947 less individuals reported that they worked for someone else only after the enactment of TRA86. This employment group is the largest of the employment groups that I have created so this accounted for only negative 4 percent change.

When looking at the corporate income tax system there were 263 less people reporting incorporated self-employment in the aftermath of TRA86. Similarly, 35 less people reported that they were working for someone else and owned an incorporated business. The aforementioned change in individuals only holds for my sample because I have not been extrapolated for the population. These groups experienced a negative 17 percent and a negative 12 percent change, respectively. In order to more accurately analyze TRA86 I must uncover how unemployment was affected.

My results show that 1,581 more people were unemployed after the enactment of TRA86. This is equivalent to a 70 percent change in that employment group. These results are not what one expects to see when dealing with a reduction in marginal tax rates especially if the implications of the Laffer Curve are valid. Due to the inherent risk of self-employment it is understandable that there will be some attrition in my self-employment group. The fact that there are more self-employed persons in 1985 than in 1983 forces me to present my results of the exit from self-employment in percentage form in what follows.

Inconsistent with the theory that lower marginal tax rates cause self-employment to become more attractive, I find that in the TRA86 period a lower percentage of people remained self-employed. Only 76 percent of self-employed persons in 1985 were self-employed in 1988. Whereas, 78 percent of the self-employment group in 1983 was still self-employed in 1985. Despite the larger percentage of exit from self-employment in the TRA86 period, a lower percentage of the formerly self-employed switched to the employment group that reported income under the corporate income tax system. This confirms the fact that TRA86 has made the

corporate tax system less attractive relative to the personal income tax system. The employment groups, working for someone else and unemployment, experience a higher percentage of entry from the formerly self-employed in the TRA86 period when compared to the pre-TRA86 period.

As I have previously stated, the income derived from working for someone else is taxed at the same marginal tax rates as self-employment income. In my sample 93 percent of wage earners in 1983 were still wage earners in 1985. This percentage dropped to 90 after TRA86 was enacted. It is interesting that the employment group that experienced the largest percent of entry from wage earners was unemployment in both periods.

Conclusion

While researching supply-side economics I discovered the theory of the Laffer Curve. The Laffer Curve hypothesizes that when tax rates are too high a reduction in tax rates can increase government tax revenue. It is possible that government tax revenue will increase if individuals increase their labor supply, earn more income, or report more income. This paper attempts to answer the question of whether or not the decision to remain, become, or leave self-employment is affected by marginal tax rates.

My results suggest that the lower marginal tax rates associated with TRA86 have not caused self-employment to become a more attractive employment type. In fact, I find that TRA86 has had a minimal adverse effect on the self-employed. Still, I can clearly show after the reduction in marginal tax rates from TRA86 there is a smaller percentage of entrepreneurs that remain self-employed. Also, it is evident that there is more unemployment after the enactment of TRA86 which was not an intended effect.

I must caution readers that my results are likely to suffer from a bias due to economic trends and possible lagged effect from ERTA81. Specifically, this tax legislation was enacted during an expansionary period. These periods are defined as periods when GDP is increasing. My results show that unemployment is increasing which indicates that the individuals that remained employed produced more. Assuming this trend continues throughout the TRA86 period will bias my results downwards because the actual trend of an increase in employment in the TRA86 period is probably not as strong. Also, the portion of my results that can be considered lagged effects from ERTA81 is an unknown factor. To further test the hypothesis that marginal

tax rates have an effect on the decision to be an entrepreneur more periods of data should be analyzed and even a tax increase.

This research was performed using the Panel Study of Income Dynamics. This is not the ideal data set for a paper on this topic. It would be ideal to use the actual tax filings of individuals. It is likely that there are some discrepancies between the information individuals reported to the Internal Revenue Service and how they answered questions in the PSID. If I were to continue this research at a later date, with more time, a higher level of education, and more resources I would obtain these tax filings to have the most powerful and accurate data for statistical testing.

Appendix A: Marginal Tax Rates in 1985 and 1988

Marginal Tax Rates in 1985 and 1988

Married Filing Jointly

1985		1988	
Marginal Tax Rate	Income Over	Marginal Tax Rate	Income Over
11%	\$3,540	15%	\$0
12%	\$5,720	28%	\$29,750
14%	\$7,910	33%	\$71,900
16%	\$12,390	28%	\$149,250
18%	\$16,650		
22%	\$21,020		
25%	\$25,600		
28%	\$31,120		
33%	\$36,630		
38%	\$47,670		
42%	\$62,450		
45%	\$89,090		
49%	\$113,860		
50%	\$169,020		

Source: The Statistics of Income Individual Tax Return Reports from 1985 and 1988

Appendix B: Data Validation

Validation of the Panel Study of Income Dynamics' data with the Statistics of Income for Year 1983

Statistics of Income Individual Returns

Panel Study of Income Dynamics (PSID)

top code: 99999

Adjusted Gross Income	Number of Returns	Amount	Proportion of Returns	Mean Income	Total Number of Individuals	Proportion of Returns	Mean Income
All Returns, Total	10,682,124	96,877,666,000		9,069.14			13,611.15 (792.64)
Under \$10,000	2,928,342	17,210,783,000	0.2741	5,877.31	1,278 (320)	0.0771 (0.0188)	1,423.52 (392.89)
\$10,000 under \$20,000	2,464,753	14,901,967,000	0.2307	6,046.03	2,497 (470)	0.1505 (0.0255)	5,414.73 (624.78)
\$20,000 under \$30,000	2,003,592	14,037,773,000	0.1876	7,006.30	3,150 (487)	0.1899 (0.0247)	7,993.29 (652.18)
\$30,000 under \$40,000	1,440,072	1,592,743,000	0.1348	1,106.02	2,586 (509)	0.1560 (0.0287)	12,901.58 (1,104.68)
\$40,000 under \$50,000	753,865	8,625,328,000	0.0706	11,441.48	2,233 (536)	0.1346 (0.0276)	12,916.58 (1,688.32)
\$50,000 under \$75,000	677,030	12,142,156,000	0.0634	17,934.44	3,096 (571)	0.1867 (0.0352)	19,819.50 (1,707.30)
\$75,000 under \$100,000	195,957	6,572,716,000	0.0183	33,541.62	1,119 (254)	0.0675 (0.0153)	30,737.87 (4,420.02)
\$100,000 under \$200,000	162,788	6,823,698,000	0.0152	41,917.70	372 (163)	0.0224 (0.0100)	49,910.88 (7,600.97)
\$200,000 under \$500,000	43,799	2,999,907,000	0.0041	68,492.59	253 (163)	0.0152 (0.0095)	34,362.29 (29,301.36)
\$500,000 under \$1,000,000	8,239	1,005,517,000	0.0008	122,043.57	0	0.0000	0.00
\$1,000,000 or more	3,687	1,460,822,000	0.0003	396,208.84	0	0.0000	0.00

Sources: Statistics of Income Individual Tax Returns 1983 and Panel Study of Income Dynamics (1984 Survey)

Validation of the Panel Study of Income Dynamics' data with the Statistics of Income for Year 1985

Statistics of Income Individual Returns

Panel Study of Income Dynamics (PSID)

top code: 99999

Adjusted Gross Income	Number of Returns	Amount	Proportion of Returns	Mean Income	Total Number of Individuals	Proportion of Returns	Mean Income
All Returns, Total	11900000	78773000000		6,619.58			8,437.76 (596.21)
Under \$10,000	2897000	-153000000	0.2434	-52.81	6,076.10 805.57	0.2262 (0.0265)	900.02 (210.11)
\$10,000 under \$20,000	2517000	11439000000	0.2115	4,544.70	4,252.60 624.35	0.1583 (0.0217)	2,387.15 (392.11)
\$20,000 under \$30,000	2167000	11686000000	0.1821	5,392.71	3,965.10 635.77	0.1476 (0.0209)	5,952.15 (609.68)
\$30,000 under \$40,000	1656000	9990000000	0.1392	6,032.61	3,849.40 609.80	0.1433 (0.0200)	8,506.71 (1,356.58)
\$40,000 under \$50,000	1023000	8903000000	0.0860	8,702.83	2,445.80 353.56	0.0910 (0.0122)	12,598.15 (1,308.01)
\$50,000 under \$60,000	570000	6658000000	0.0479	11,680.70	2,878.00 501.03	0.1071 (0.0153)	15,801.92 (1,705.75)
\$60,000 under \$70,000	316000	5951000000	0.0266	18,832.28	1,021.00 301.86	0.0380 (0.0105)	16,834.73 (4,357.75)
\$70,000 under \$80,000	206000	4455000000	0.0173	21,626.21	752.50 289.48	0.0280 (0.0109)	28,348.58 (2,991.13)
\$80,000 under \$90,000	125000	3238000000	0.0105	25,904.00	475.10 198.60	0.0177 (0.0076)	15,878.69 (6,352.31)

Sources: Statistics of Income Individual Tax Returns 1985 and Panel Study of Income Dynamics (1986 Survey)

Validation of the Panel Study of Income Dynamics' data with the Statistics of Income for Year 1985 (Cont'd)

Statistics of Income Individual Returns

Adjusted Gross Income	Number of Returns	Amount	Proportion of Returns	Mean Income
\$90,000 under \$100,000	84000	2610000000	0.0071	31,071.43
\$100,000 under \$125,000	135000	4275000000	0.0113	31,666.67
\$125,000 under \$150,000	67000	2163000000	0.0056	32,283.58
\$150,000 under \$175,000	38000	1467000000	0.0032	38,605.26
\$175,000 under \$200,000	20000	982000000	0.0017	49,100.00
\$200,000 under \$300,000	39000	1879000000	0.0033	48,179.49
\$300,000 under \$400,000	17000	755000000	0.0014	44,411.76
\$400,000 under \$500,000	6000	402000000	0.0005	67,000.00
\$500,000 under \$1,000,000	14000	1146000000	0.0012	81,857.14
\$1,000,000 or more	6000	926000000	0.0005	154,333.33

Panel Study of Income Dynamics (PSID)

top code: 99999

Total Number of Individuals	Proportion of Returns	Mean Income
266.50	0.0099	37,056.21
101.77	(0.0038)	(4,748.40)
600.70	0.0224	21,351.47
277.46	(0.0107)	(9,915.87)
72.80	0.0027	22,991.59
51.84	(0.0019)	(14,336.98)
0.00	0.0000	0.00
63.00	0.0023	49,685.00
63.00	(0.0024)	
147.30	0.0055	33,000.41
108.06	(0.0039)	(29,782.38)
0.00	0.0000	0.00
0.00	0.0000	0.00
0.00	0.0000	0.00
0.00	0.0000	0.00

Sources: Statistics of Income Individual Tax Returns 1985 and Panel Study of Income Dynamics (1986 Survey)

Validation of the Panel Study of Income Dynamics' data with the Statistics of Income for Year 1988

Statistics of Income Individual Returns

Panel Study of Income Dynamics (PSID)

top code: 99999

Adjusted Gross Income	Number of Returns	Amount	Proportion of Returns	Mean Income	Total Number of Individuals	Proportion of Returns	Mean Income
All Returns, Total	13,571,000.00	126,323,000,000.00		9,308.30			10,320.84 (866.33)
Under \$10,000	2,873,000.00	1,839,000,000.00	0.2117	640.10	5,539.00 (683.78)	0.1790 (0.0164)	736.42 (227.77)
\$10,000 under \$20,000	2,577,000.00	13,956,000,000.00	0.1899	5,415.60	4,741.80 (575.73)	0.1532 (0.0175)	2,739.69 (473.42)
\$20,000 under \$30,000	2,207,000.00	14,245,000,000.00	0.1626	6,454.46	4,451.70 (633.00)	0.1438 (0.0158)	5,247.22 (752.09)
\$30,000 under \$40,000	1,737,000.00	12,018,000,000.00	0.1280	6,918.83	3,554.50 (407.67)	0.1148 (0.0101)	9,811.13 (1,059.40)
\$40,000 under \$50,000	1,300,000.00	10,588,000,000.00	0.0958	8,144.62	3,167.10 (648.18)	0.1023 (0.0175)	8,964.07 (1,481.94)
\$50,000 under \$60,000	857,000.00	10,479,000,000.00	0.0631	12,227.54	2,181.10 (507.72)	0.0705 (0.0145)	13,636.58 (1,354.86)
\$60,000 under \$70,000	528,000.00	7,139,000,000.00	0.0389	13,520.83	2,175.50 (440.76)	0.0703 (0.0137)	15,028.34 (2,282.57)
\$70,000 under \$80,000	369,000.00	7,121,000,000.00	0.0272	19,298.10	1,026.20 (266.36)	0.0332 (0.0083)	16,739.53 (3,169.58)
\$80,000 under \$90,000	244,000.00	5,774,000,000.00	0.0180	23,663.93	855.70 (268.70)	0.0276 (0.0088)	21,099.53 (5,460.69)

Sources: Statistics of Income Individual Tax Returns 1988 and Panel Study of Income Dynamics (1989 Survey)

Validation of the Panel Study of Income Dynamics' data with the Statistics of Income for Year 1988 (cont'd)

Statistics of Income Individual Returns

Panel Study of Income Dynamics (PSID)

top code: 99999

Adjusted Gross Income	Number of Returns	Amount	Proportion of Returns	Mean Income	Total Number of Individuals	Proportion of Returns	Mean Income
\$90,000 under \$100,000	160,000.00	4,483,000,000.00	0.0118	28,018.75	952.30 (268.27)	0.0308 (0.0088)	28,115.05 (8,123.67)
\$100,000 under \$125,000	249,000.00	8,016,000,000.00	0.0183	32,192.77	752.30 (227.89)	0.0243 (0.0073)	33,385.18 (5,774.66)
\$125,000 under \$150,000	127,000.00	6,135,000,000.00	0.0094	48,307.09	613.10 (217.27)	0.0198 (0.0068)	32,305.26 (12,052.35)
\$150,000 under \$175,000	84,000.00	3,828,000,000.00	0.0062	45,571.43	409.00 (212.29)	0.0132 (0.0071)	49,945.33 (14,295.05)
\$175,000 under \$200,000	54,000.00	2,756,000,000.00	0.0040	51,037.04	222.90 (138.52)	0.0072 (0.0043)	36,489.12 (23,698.55)
\$200,000 under \$300,000	96,000.00	6,187,000,000.00	0.0071	64,447.92	123.30 (81.03)	0.0040 (0.0026)	47,069.77 (21,064.36)
\$300,000 under \$400,000	41,000.00	2,775,000,000.00	0.0030	67,682.93	0.00	0.0000	0.00
\$400,000 under \$500,000	19,000.00	1,687,000,000.00	0.0014	88,789.47	0.00	0.0000	0.00
\$500,000 under \$1,000,000	33,000.00	3,167,000,000.00	0.0024	95,969.70	0.00	0.0000	0.00
\$1,000,000 or more	19,000.00	4,131,000,000.00	0.0014	217,421.05	185.80 (136.94)	0.0060 (0.0044)	64,692.57 (32,301.86)

Sources: Statistics of Income Individual Tax Returns 1988 and Panel Study of Income Dynamics (1989 Survey)

Appendix C: Results

Breakdown of My Sample by Employment Group

	1983	1985	1988
Number of heads	58,996	58,996	58,996
Number of self-employed	3,622	4,322	5,085
Number of wage earners	49,948	49,619	47,343
Number of wage & self-employed	557	64	174
Number of self-employed (incorporated)	1,953	2,543	2,868
Number of wage & self-employed (incorporated)	302	294	251
Number of unemployed	2,614	2,154	3,275

Simple Difference Results

	1983-1985	1985-1988	Simple Difference
Change in number of self-employed	700	763	63
Change in number of wage earners	-329	-2,276	-1,947
Change in number of wage & self-employed	-493	110	603
Change in number of self-employed (incorporated)	590	325	-265
Change in number of wage & self-employed (incorporated)	-8	-43	-35
Change in number of unemployed	-460	1,121	1,581
	0.19	0.18	-0.02
Percentage change in number of wage earners	-0.01	-0.05	-0.04
Percentage change in number of wage & self-employed	-0.89	1.72	2.60
Percentage change in number of self-employed (incorporated)	0.30	0.13	-0.17
Percentage change in number of wage & self-employed (incorporated)	-0.03	-0.15	-0.12
Percentage change in number of unemployed	-0.18	0.52	0.70

Self Employed in 1983, Status in 1985

	Number	Percentage
Self-Employed	2,824	0.78
Wage Earners	436	0.12
Wage & Self-Employed	0	0.00
Self-Employed (Incorporated)	248	0.07
Wage & Self-Employed (Incorporated)	20	0.01
Unemployed	94	0.03
	Number Self-Employed in 1983	Percent of Total Heads Self-Employed in 1983
	3,622	0.06

Self Employed in 1985, Status in 1988

	Number	Percentage
Self-Employed	3,273	0.76
Wage Earners	671	0.16
Wage & Self-Employed	0	0.00
Self-Employed (Incorporated)	250	0.06
Wage & Self-Employed (Incorporated)	17	0.00
Unemployed	111	0.03
	Number Self-Employed in 1985	Percent of Total Heads Self-Employed in 1985
	4,322	0.07

Wage Earners in 1983, Status in 1985

	Number	Percentage
wage earners	46,493	0.93
self-employed	1,185	0.02
wage & self-employed	59	0.00
self-employed (incorporated)	537	0.01
wage & self-employed (incorporated)	145	0.00
unemployed	1,529	0.03
	Number of Wage Earners in 1983	Percent of Total Heads Earning a Wage in 1983
	49,948	0.85

Wage Earners in 1985, Status in 1988

	Number	Percentage
wage earners	44,648	0.90
self-employed	1,441	0.03
wage & self-employed	156	0.00
self-employed (incorporated)	609	0.01
wage & self-employed (incorporated)	84	0.00
unemployed	2,681	0.05
	Number of Wage Earners in 1985	Percent of Total Heads Earning a Wage in 1985
	49,619	0.84

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