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KAUFFMAN DISSERTATION EXECUTIVE SUMMARY

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Abstract

I use a twelve-year panel of tax return data to assess whether or not taxes affect entrepreneurship. Beyond assessing possible distortions in entrepreneurial activities created by the tax system, this research provides information to policymakers on the effectiveness of tax policy in influencing entrepreneurial activity. The extent of entrepreneurial activity in the economy is a vital policy concern as entrepreneurs are thought to contribute to economic growth by creating jobs and producing innovations.

Past theoretical and empirical studies examining the effects of taxes on entrepreneurship produced ambiguous results creating the need for further study. Toward this end, I investigate the effects of tax rates on entrepreneurial entry and survival as well as the effects of health insurance deductibility on exits from an entrepreneurial activity. My contributions to the current literature include developing a model combining the two past theoretical approaches, using a panel of tax return data, and examining an aspect of the tax system (health insurance deductibility) beyond the tax rates typically studied.

I find convincing evidence that marginal tax rates and health insurance deductibility have important effects on entrepreneurial decisions. Results show that increases in marginal tax rates on wage income increase the probability of entry, increase the duration of entrepreneurial activities, and decrease the probability of exit. Increases in marginal tax rates on entrepreneurship income decrease the probability of entry, shorten entrepreneurial spells, and increase the probability of exit. The effects from changes in the entrepreneurial marginal tax rate are larger than those from the marginal tax rate on wages suggesting that an across the board tax cut would increase

entrepreneurship by increasing entry, decreasing exit, and enhancing survival. Additionally, the availability of a health insurance deduction from income tax calculations enhances entrepreneurial survival.

Taken together, the results indicate that tax policy is a potentially effective tool for influencing levels of entrepreneurship in the economy. More broadly, these results provide evidence that multiple aspects of the tax code, including but not limited to tax rates, are relevant for assessing behavioral responses.

Executive Summary

Tax Policies and Entrepreneurship:

Relative Tax Rates and Health Insurance Deductibility

A Dissertation
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Degree
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Executive Summary

Entrepreneurs are thought to play a vital role in the economy, providing much of the energy behind job creation, technological advancement and overall economic growth. For this reason, researchers have long been interested in the factors that encourage or deter entrepreneurial activity. My research asks the question of whether aspects of the tax code, namely tax rates and the deductibility of health insurance premiums, affect an individual's decision to start or remain in an entrepreneurial activity. I use a simple theoretical model and twelve years (1979 to 1990) of U.S. federal individual income tax returns to examine the effects of taxes on entrepreneurial activity.

Every individual likely has some element of the entrepreneurial spirit within but entrepreneurship as a concept cannot actually be directly measured. Like all earlier studies, then, I must resort to a measurable proxy for entrepreneurship. Most studies have examined individual responses on surveys to questions regarding self-employment activity. I take an innovative approach by using federal individual income tax return data to identify entrepreneurs by the presence of one or more forms of entrepreneurial income, such as income from a sole proprietorship, partnership, or small business corporation, as described in more detail below. Henceforth, the use of the terms "entrepreneur," "entrepreneurship," and "entrepreneurial activity" refer to this more limited but measurable concept rather than more general notions of entrepreneurship.

To see how taxes might affect entrepreneurial decisions, consider a person who is considering whether to stay in her wage and salary job or to start a new business. As she weighs her options, she is likely to consider factors such as lifestyle, including flexibility and the work

and family balance, income, resource availability, and job satisfaction. Taxes enter into the equation because they affect her take-home income. If the tax code treated wage and salary workers and entrepreneurs identically, it would have no impact on the decision. However, there are several important differences in the relative tax treatment of wage and salary income and entrepreneurial income.

Two examples of these differences were noted by Goode (1949). First, many expenses related to the entrepreneurial venture are deductible in calculating taxable income. Further, business deductions for goods such as automobiles and computer equipment are likely to have consumption benefits outside of business use. Alternatively, the inability of certain entrepreneurs—namely the self-employed—to deduct expenses on services (such as health insurance prior to 1987), generally paid out of pre-tax dollars for wage and salary workers, might either deter entrepreneurial entry or expedite exit. Entrepreneurs might also be affected by other aspects of the tax system. For instance, the costs of complying with the tax code are likely to be relatively higher for entrepreneurs who run small businesses,[1] leading to lower levels of entrepreneurship.

Second, the taxation of many forms of entrepreneurial income depends upon voluntary compliance, while most wage-and-salary tax payments are withheld by employers. This allows relative tax burdens to vary even when entrepreneurs and wage and salary workers face the same tax rates. Given the complexity of the tax code and the significant compliance burden on entrepreneurs and small businesses noted above, the necessity of self-reported entrepreneurial income can reduce the effective tax burden of entrepreneurs relative to wage and salary workers

[1] Crain and Hopkins (2001) estimate that tax compliance costs per employee in small businesses range from 1.8 times greater than large firms in the service industry to 4.5 times greater than large firms in the manufacturing industry. Also see Hopkins (1995).

in three ways. First, entrepreneurs might not be aware of their actual tax burden and might mistakenly underreport their income or neglect to report certain information. Second, they might be prompted to seek professional assistance with their taxes, thereby increasing the likelihood that they learn about legal ways to reduce their tax burden. Finally, some entrepreneurs might attempt to engage in tax evasion by willfully misreporting income or expenses or simply failing to file a tax return.

Whether the tax code alters entrepreneurial behavior is important from a policy perspective for at least two key reasons: economic distortions and policy effectiveness. Specifically, if the tax code results in either more or less entrepreneurial activity than would otherwise exist, it is said that the economy has been distorted away from its most efficient outcome. Such distortions reduce economic efficiency, as economic inputs (e.g., land, labor, capital, and entrepreneurship) are allocated toward less productive uses. Alternatively, if it can be shown that entrepreneurs are not sensitive to taxes in their decisions to start or maintain small businesses, then tax reform measures can be designed to achieve goals such as greater overall equity or simplicity without the fear of altering entrepreneurial decisions.

Leaving aside the question of economic distortions, if tax policies have predictable effects on entrepreneurial decisions, taxes can potentially be used by policymakers to achieve goals such as increasing the level of entrepreneurship. Whether or not such a goal would be justified on economic grounds depends on the relative benefits of using resources for entrepreneurship versus other uses, such as the growth of more established firms. For instance, if entrepreneurship provides benefits to society, such as increased knowledge, that the potential entrepreneur does not take into account when deciding whether or not to pursue an

entrepreneurial activity, then tax policies that encourage entrepreneurial activities could increase social well-being.

My examination of the effects of taxes on entrepreneurial activity first focuses on the effects of federal income and payroll taxes and state income taxes and then examines the effects of health insurance deductibility. This research contains a characterization of the major changes in the tax treatment of wage and salary workers and entrepreneurs, focusing on changes occurring during the time period of my data (1979 through 1990), a summary of the prior theoretical and empirical literature, presentation of a simple theoretical model, a description of the data and estimation methods used, a presentation of the results, and concluding remarks. A brief summary of these sections is presented in the remainder of this executive summary.

Since its inception, the U.S. tax system has treated income from wage-and-salary employment and entrepreneurship (mainly sole-proprietorship) differently. This distinction has been necessary due to the lack of a third party—the firm—in the tax collection process for many entrepreneurs. While wage-and-salary workers have income and payroll taxes withheld by their employers, entrepreneurs must remit their own taxes. Further, income from wage-and-salary employment has been subject to a payroll tax since 1937 (its proceeds serving as the primary funding for the Social Security and Medicare systems) while the only form of entrepreneurial income that is explicitly subject to payroll taxation is self-employment income, which was not subject to a payroll tax until 1951. Entrepreneurs historically faced lower payroll tax rates[2] until an effort to equalize the treatment began in 1984, when the statutory self-employment payroll tax rate was set equal to two times the wage-and-salary rate.

Major federal tax reforms in 1981 and 1986 further altered tax liabilities for both wage

[2] This assessment assumes that workers, both wage and salary and entrepreneurs, ultimately bear both the worker and employer portions of the payroll tax.

workers and entrepreneurs as tax rates were reduced and the tax base was broadened. Toward this general end, a number of limitations on deductible business expenses were passed. The payroll and income tax changes during the 1980s rendered entrepreneurship significantly less tax-advantaged relative to wage-and-salary employment. Indeed, the overall theme of the 1980s tax changes and most notably the Tax Reform Act of 1986 was to level the playing field for various types of taxpayers.

Despite the general roll-back of tax advantages for entrepreneurs during the 1980's, the self-employed and their families did receive a small incentive in terms of health insurance premiums. Prior to 1987, the self-employed were not able to deduct health insurance premiums when calculating income tax or payroll tax liabilities. A temporary, 25 percent deduction of self-employed health insurance premiums from the calculation of income taxes was implemented in 1987. The temporary deduction was made permanent and increased to 40 percent in 1997 and premiums were made fully deductible from the calculation of income taxes in 2003. However, the 100-percent income tax deduction did not equalize the tax treatment of self-employed health insurance premiums as the income used by the self-employed to pay health insurance premiums is still subject to the payroll tax.

Prior theoretical models have focused on two different dimensions of the tax system, namely (a) the effects of tax policies on the relative risk of the entrepreneurial sector through loss offsets and (b) the opportunities for and benefits of evasion. Results of the theoretical literature are ambiguous, and have not been resolved by the inconsistent empirical findings. In the case of relative risk models, a higher tax rate translates into lower after-tax returns from an entrepreneurial venture, making entrepreneurship less attractive. On the other hand, higher tax rates reduce the inherent riskiness of a new enterprise by reducing the maximum after-tax losses.

This implicit insurance aspect of the tax code can increase the likelihood of a small business start-up or prolong an existing entrepreneurial activity. According to these models, the overall effect of taxes on entrepreneurship is, in the end, an empirical question.

Given this theoretical ambiguity, it is perhaps not surprising that the related empirical literature has not yielded a consensus regarding the effects of tax rates on entrepreneurship. Many studies have found that higher tax rates lead to higher rates of entrepreneurial activity, while a number of more recent studies have called this general finding into question. More research on this topic is needed, such that policy makers might be better positioned to design and defend effective, efficient, and equitable tax rules.

I contribute to the existing theoretical research by developing a model that combines the relative risk framework with evasion opportunities. The model provides two clear hypotheses regarding the effects of tax rates on entrepreneurship observed in the tax return data. First, it predicts a positive relationship between entrepreneurship and the marginal tax rate and individual expects to face on wage and salary income. Second, the relationship between entrepreneurship and the expected marginal tax rate on entrepreneurial income is predicted to be negative.

My research makes use of a rich panel of individual tax return data. The data span 1979 to 1990 and contain data from more than 200,000 tax returns, representing the best publicly-available longitudinal tax return data set. It also encompasses a number of significant tax policy changes and directly overlaps the time period of data used in the most similar prior study, allowing for important comparisons to be made. One of the most important advantages of using tax return data is that they provide a number of categories of entrepreneurial activity at the individual level including sole proprietorships, partnerships, and subchapter S corporations.

I begin by estimating the effects of taxes on decisions to start an entrepreneurial activity.

Using a random effects model, I estimate whether the tax rates a filer expects to face in the next year affect the probability that they decide to enter an entrepreneurial activity in the next year. I predict the tax rates the filer would face both as a wage and salary worker and as an entrepreneur, taking into account that most entrepreneurial households also have wage and salary income, and include these expected tax rates in the model. I use the information available in the tax return data to control for age, household size, risk attitudes, regional effects, the possibility that a household may not be able to borrow funds for an entrepreneurial activity, and individual-specific characteristics that do not vary over time (e.g. race and education). The potential endogeniety of tax rates is addressed using a method employed in the previous literature. Tax rates are endogenous if the decision of whether or not an individual moves from wage-and-salary employment to entrepreneurship has any effect on calculated tax rates.

To examine the effects of tax rates on exits from entrepreneurial activities, I employ state-of-the-art duration modeling techniques in addition to the discrete choice model used in the entry analysis. Duration modeling allows me to examine the effects of taxes on entrepreneurial exits, given that exit has not yet occurred. In other words, duration modeling takes into account the entire *spell* of entrepreneurship. This is possible because I observe many entire spells of entrepreneurship as the panel of data is 12 years long and the median length of an entrepreneurial activity is between 3 and 4 years.

I find convincing evidence that tax rates have important effects on entrepreneurial entry and survival. Decreases in expected marginal tax rates in the wage sector decrease the probability of entrepreneurial entry, diminish the survival of existing entrepreneurs, and increase the probability of entrepreneurial exit. Decreases in expected tax rates on entrepreneurs have the opposite effects. These findings are consistent with the predictions of my theoretical model.

For example, a one percentage-point decrease in the expected marginal tax rate facing wage workers would shorten an entrepreneurial spell by 16.1 percent for single filers and 12.7 percent for married filers. A similar decrease in the marginal tax rate facing entrepreneurs would lengthen an entrepreneurial spell by 32.5 percent for single filers and 44.8 percent for married filers. Note that a one-third increase in spell length simply indicates that the median entrepreneur would remain in the entrepreneurial activity about one year longer.

The effects of the expected marginal tax rates on entrepreneurship are much larger than the effects from changes in the expected tax rates in the wage sector. This means that across-the-board tax cuts, or those that equally reduce tax rates on both sectors (appropriate from a policy perspective given that marginal tax rates are generally blind to the source of income) would lead to higher levels of entrepreneurship than otherwise would have been observed, due both to increased entry and decreased entrepreneurial exit. In the case of entry, a one-percentage-point rate cut would have the combined effect of increasing the probability of entrepreneurial entry by 0.84 percentage points (-0.58 in response to the decrease in the expected wage and salary marginal tax rate plus 1.42 in response to the analogous decrease in the expected entrepreneurial marginal tax rate) among single filers and 1.49 percentage points (-0.51 plus 2.00) among married filers. These effects are quite large when compared to the average entry rates of 1.6 percent for single filers and 4.2 percent for married filers.

Aspects of tax policy outside of tax rates are rarely examined in the literature. I assess the effects of one of these additional aspects, namely the effects of health insurance deductibility on exits from entrepreneurial activities. This analysis makes use of a sub-set of the tax return data as deductions for health insurance premiums were not made available to the self-employed until 1987. In addition, I limit the analysis to sole proprietors (filers with a Schedule C) as sole

proprietors represent the largest portion of entrepreneurs eligible for health insurance deductions.

Once again, I employ a discrete choice analysis with the same set of control variables as in the tax rate analysis. Additionally, the expected wage and salary and entrepreneurial tax rates are included as control variables to assess the effects of changing health insurance deductibility without a change in tax rates. Two methods are used to measure health insurance deductibility. In some of the models, I include a dummy variable for the presence of a health insurance deduction. In other models, I include the dollar value of the health insurance deduction.

I find compelling and consistent evidence that the deductibility of health insurance premiums in the calculation of income taxes enhances entrepreneurial survival. The presence of a health insurance deduction decreases the probability of exit by 10.82 percent for single filers. Modest increases in the dollar value of the deduction also result in similar reductions in the probability of exit for single filers. Married filers receive an even larger reduction in the probability of exit from the presence of a health insurance premium deduction (about 65 percent), but experience a much smaller effect from an increase in the dollar value of the deduction.

The presence of large behavioral responses from the 25 percent deductibility available from 1988-1990 provide suggestive evidence that further increases in deductibility to 100 percent in 2003 likely led to higher levels of entrepreneurship than otherwise would have been observed. In addition, the results imply that allowing the deduction of health insurance premiums when calculating payroll tax liabilities would also increase the longevity of entrepreneurial ventures. More broadly, these results provide further evidence that changing other aspects of the tax code, beyond the tax rates which are most commonly studied, can potentially create significant behavioral responses.

This study makes a number of contributions to the existing literature. First, I combine the two approaches used in the theoretical literature to arrive at testable hypotheses. Second, I use the best available tax-related information to address the effects of both tax rates and health insurance deductibility on entrepreneurial activity. In addition, I recognize the difficulty in quantifying "entrepreneurship," and consider a variety of measures that can be gleaned from tax records. Third, I employ a combination of estimation techniques, a discrete-choice transition analysis framework and more advanced duration analysis techniques to account for entire entrepreneurial spells. Fourth, I examine these decisions at the tax-filer level, controlling for the relative tax treatment of entrepreneurial income and wage-and-salary income as well as accounting for the fact that many entrepreneurial households also receive wage and salary income. Additionally, I follow the recent literature by controlling for the endogeneity of individual-level tax rates.

In summary, my results indicate that entrepreneurs are sensitive to multiple aspects of the tax system, including relative tax rates and tax incentives targeted at health insurance. These results are highly robust to various alternative specifications. Taken together, they indicate that tax policy is a potentially effective tool for influencing levels of entrepreneurship in the economy, and that potential impacts on entrepreneurial activity should be considered when evaluating proposed changes in tax policies.