Analyzing the Returns of Self-Employment

A Reassessment of the Benefits and Reasons for Engaging in Self-Employment

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Abstract

Recently, there have been great advancements in the study of entrepreneurship. One paper of particular interest finds a large disparity between the incomes of self-employed workers and their paid employee counterparts (Hamilton 2000). This paper re-evaluates these claims, replicating the experiment done on the 1984 Survey of Income and Program Participation (SIPP) data set using the 2008 SIPP. The study will then extend to use of more complex econometric models and add women into the sample to compare differences between female and male self-employment. As this is a working paper, the results and conclusion have not yet been added.

1 Introduction

A long standing question in labor economics pertains to the motives behind choosing self-employment versus paid employment. However, there is not abounding research in this field. In fact, many studies labor market studies choose to ignore the self-employed. Recently, there has been a new vein of research opening up around the self-employed and their motives for why they choose to work for themselves.

In 2014, about 10% of working people in the U.S. were self-employed (Center 2015). Given the large number of self-employed people, a better understanding of their choice in employment is extremely important. As shown in the study by Hamilton (2000), after 10 years in business, median self-employed workers can make up to 35% less in per hour earnings than their paid job counterparts. Given the discrepancy in wages between the employed and the self-employed, it is unclear why workers would choose self-employment. Hamilton (2000, p. 629) concludes that it must be because of the non-pecuniary benefits such as working from home, "being your own boss", or choosing your own hours.

However, other research contradicts the existence of a income differential. One study states "after correcting for income underreporting, the mean financial gain to entrepreneurship is positive and large" (Åstebro and Chen 2014) [1]. Other research argues that using net profit and draw as a measurement of income are narrow and static compared to the broad range of financial rewards available to entrepreneurs (Carter 2011). (Cagetti and De Nardi 2016) finds that many entrepreneurs are constrained in the amount they can borrow, but have far greater rates of return.(Quadrini 2000) also finds a higher saving behavior of entrepreneurs relative to workers, along with differences in asset holdings and wealth mobility.

Many studies have also focused on the differences between self-employment between men and women. Blanchflower (2000), finds that the probability of being self–employed is higher among men than women. Other studies have found that women in self-employment has been growing over time Devine (1994), (Fairlie 2004). One study suggests that the gender gap in employment is due to subjective perceptions more than socio-economic variables, namely belief in ones own skill and fear of failure(Koellinger, Minniti, and Schade 2013). Georgellis and Wall (2005), cites differences in labor market opportunities and occupation strategies between men and women as evidence for the lower rate of self-employment.

The primary objective of this paper is to replicate the study done in (Hamilton 2000) to verify that the large negative income differential between self-employed and paid employed workers still apply to the current labor market. We extend the paper beyond Hamilton's in the following ways. First, we add a fixed effects model to account for individual, unobservable characteristics in self-employed workers and paid employees. Second, we also add women into the sample in order to discuss the differences between men and women in self-employment.

The remainder of the paper proceeds as follows. Section 2 will present the model that will be used. Section 3 will introduce the data. Section 4 will discuss the results of the modeling. Finally, section **??** will draw conclusions and discuss open questions.

1. Although it is self admittedly built on strong model assumptions

2 Theory

Predictions and expectations for self-employment earnings differentials differ across papers – empirically, the existence and sign of the earnings differential is unresolved. (Hamilton 2000) notes that investment, agency, matching, learning, and compensating differential models all offer different expectations. To follow (Hamilton 2000), we assume that individuals are wealth maximizers and will choose self-employment if it yields the highest expected present value of career earnings. We denote Y_{ijt} as the earnings of individual i in sector j at time t. Let

$$Y_{ijt} = H_{it}\delta_j + f_j(EXPR_{ijt}) + \epsilon_{ijt}, j = SE, PE \tag{1}$$

H_{it} represents a vector of observed characteristic traits like education, marital status, or race. $EXPR_{ijt}$ is a vector of experience variables — potential experience[2] and the amount of time spent in the current job. Finally, ϵ_{ijt} is a sector-specific random error term.

Some argue that individuals have unobserved, time-invariant, sector-specific abilities (Jovanovic 1982). In this case, the error term in equation (1) would actually be represented by

$$\epsilon_{ijt} = m_{ij} + \eta_{ijt} \tag{2}$$

where m_{ij} represents the sector specific ability. In the case that the worker knows their m_{ij} and matches to the type of employment where they will be most successful, the workers should have relatively even earnings. However, Jovanovic (1982) argues that workers are uncertain of which sector they achieve the most success at and therefore there will be some selection over time in which low skilled workers will switch types of employment. Over time then, the earnings of self-employed workers should catch up to those of their paid employee counterparts.

Hamilton (2000, p.606) argues that nonpecuniary benefits are the primary reason for the choice of self-employment. These benefits include "being your own boss", choosing your own hours, and working from home. The study done by Hamilton did find a significantly lower earnings differential for the self-employed workers than the paid employees. This finding implies that the self-employed workers are choosing to become self-employed, and remain self-employed for reasons other than wage.

2. Calculated as Age - Years of Education - 6

3 Data

This study uses data from the 1984 and 2008 Survey of Income and Program Participation (SIPP) data set. The 1984 SIPP data set contains nine four-month waves, starting late in 1983 and ending in early 1986. Similarly, the 2008 data contains sixteen four-month waves with four different rotation groups. Beginning in late 2007, this data set's coverage stretches into early 2013. Both versions of the SIPP provide monthly observations of individuals over time. The SIPP data set was chosen because of the large sample size and the panel aspect, allowing us to track individuals over time. In order to remain consistent with (Hamilton 2000), our sample consists of males aged 18-65 working in the nonfarm sector. The reason for this sample selection is to avoid labor market participation issues associated with women, and the fact that farm income is heavily subsidized by the government. The sample also excludes highly paid professionals (lawyers and doctors) to avoid the effects of these individuals – becoming "self-employed" when you reach partnership translates to the highest earners showing disproportionate salaries in self-employment. Hence, workers in these sectors only become self-employed after they have achieved success and likely have very high earnings. This study focuses on small business owners and their decisions around employment.

In the SIPP, respondents answer questions related to whether they engage in employment and if so, what type of employment: working a job, engaging in self-employment, or both. If the respondent answered "both", we classify them as self-employed if their business hours in a given month exceeded their job hours. A person with three or more months in a given year was labeled as self-employed. This decision is designed to eliminate those who consider their self-employment casual or are seasonally self-employed.

Although the SIPP's questionnaire and structure changed in 1993[3], our data selection criteria replicates the choices (Hamilton 2000) made using the 1984 SIPP data. Table 1 shows a summary of the sample from the 2008 SIPP. We see in the table, self-employed workers have higher average potential labor market experience, have more education, are more likely to be married, and are more likely to be white compared to their paid employee counterparts. Compared to Hamilton's study, the 2008 paid employees and self-employed workers have a higher potential labor market experience, 1 year higher for both self-employed and paid employed. There was little change in the time in current job or business for a self-employed worker or a paid employee. The rate of high school dropouts has halved in the case of paid employment, and is one third that it was in the case of self-employment. Likewise, the rate of high school graduates is down over 10% for both groups. The rate of college graduates and people who attended "some college" is much higher. The rate of a self-employed worker being married dropped nearly 10% from 1984 to 2008, compared to a 5% drop for workers in paid employment. Rate of non-white self-employed workers over doubled, with the rate of nonwhite workers in paid employment also seeing a 4% rise.

3. The main changes here were a renaming of all variables; changes to the family, subfamily, individual data structure; and a switch from a wide to long data structure.

Table 1: 2008 Key Variables and Summary Statistics, by Employment Sector

Variable Name	Description	Paid Employees	Self-Employment
X	Potential labor market experience = age - education - 6	20.4	24.5
T	Years in current job or business	8.9	11.4
HDROP	High school dropout	.09	.065
HGRAD	High school graduate	.23	.21
CGRAD	4 or more years of college	.33	.40
MARRY	Married, spouse present	.62	.73
NONW	Race is not white	.16	.12
DISAB	Health limits work	.04	.035
RETIRE	Retired from previous work	.06	.07
Observations	unweighted count	14,421	977

3.1 Self-Employment Earnings

There are many difficulties associated with obtaining accurate measurements of self-employed workers incomes. Hamilton constructs three different measures for net profit: draw — or the salary 'drawn' from their business; equity-adjusted draw (EAD), which is calculated by the sum of draw and the difference in business equity at $t+1$ and t; the third Hamilton labels Net Profit, a number found by differencing the EAD and the treasury bill rate multiplied by the business equity in time t. However, given the sample size and measurement limitations of the latter two measures, this paper will focus mainly on the differences between the draw and the wage. Hourly earnings measures are used to ensure focus remains on the earnings rather than hours worked.

While SIPP data set has waves showing monthly observations of each individual, the t used for our regressions is years. For the case of our draw per hour, a sum of each participant's hours and draw for the year are found. Hence, only participants who were observed throughout both years of the 1984 sample (1984 and 1985) and all four years of the 2008 sample (2008-2012) are included in the samples. In the case of other dynamic variables (marital status, education, and age), the January observation for each year was used. The SIPP also provides person weights - these weights are calculated in order to let the SIPP sample provide a demographic representation of the American population as a whole. For each individual, we averaged their first year weights and assigned that as their weight for all years in the sample. The weights are adjusted each month to account for other individuals leaving or joining the sample, but since our panel data has been balanced we use a constant weight.

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