

# Are Nascent Entrepreneurs Different from the Self-employed?

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**Abstract:** The paper reports estimates of a model of entrepreneurship using data and definitions from the Panel Survey of Entrepreneurial Dynamics (PSED) to test whether the self-employed are different from nascent entrepreneurs. Probit models of both nascent entrepreneurs and the self-employed are estimated and compared. I find the estimated separate results for nascent entrepreneurs and the self-employed mostly reflect earlier estimates of self-employment. The results reveal the comparative consistency of the PSED with other datasets. However, the results also demonstrate the nascent entrepreneurship definition is not an improvement over self-employment when examining the factors promoting entrepreneurship.

**Keywords:** Entrepreneurship; Self-employment

**JEL Codes:** J24; L26; M13

## 1 Introduction

Reynolds, et al. (2004) state “[while] entrepreneurs contribute so much to our society, we know little about them.” For this reason, the Entrepreneurship Research Consortium (ERC) was formed to develop a new dataset—the Panel Study of Entrepreneurial Dynamics (PSED)—to examine entrepreneurs and entrepreneurship. Certainly, several papers (e.g., Evans and Jovanovic 1989, Blanchflower and Oswald 1998, Dunn and Holtz-Eakin 2000) employ binary choice models of self-employment to explore the determinants of an individual’s decision to become an entrepreneur. However, as Reynolds (1997) notes “[t]he most elementary concept of entrepreneurial behavior are actions to implement a new business.”

Research has been published using the PSED<sup>1</sup>, but to date no paper has connected directly the definition of nascent entrepreneurship used by PSED<sup>2</sup> researchers to prior research

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<sup>1</sup> An updated list of publications using the PSED is maintained at <http://www.clemson.edu/centers-institutes/spiro/psed/about/publications.html>.

using self-employment as a definition of entrepreneurship. While criticisms of research using self-employment as a definition for entrepreneurship are valid, it is equally valid to wonder how different self-employed persons are from nascent entrepreneurs—those individuals engaged in firm formation. The PSED includes data on individuals' self-employment status and on their nascent entrepreneurship status. My aim is to determine whether differences exist between self-employed individuals and nascent entrepreneurs.

Utilizing the status data from the PSED, I examine and compare models of self-employment and nascent entrepreneurship to answer the question: how different are self-employed individuals from nascent entrepreneurs? Table 1 presents a sample of previous work using either definition. The primary hypothesis of the PSED is that the self-employed are quite different from nascent entrepreneurs since the self-employed have completed the firm formation process in which nascent entrepreneurs are engaged.

The paper continues in section 2 with a model of entrepreneurship based on expected utility from the decision. A description of the PSED and complementary data sources is given in section 3. Section 4 reports the probit estimates of the data and section 5 concludes the paper.

## 2 Model

Individuals are assumed to choose between entrepreneurship and paid employment by comparing the expected utility of entrepreneurship to the expected utility under paid employment, as in Dunn and Holtz-Eakin (2000). The expected utility framework has the advantage over a similar discounted income difference framework such as the model in Lazear's (2005) paper since the expected utility framework more flexibly accounts for observations such as Hamilton's (2000) finding that entrepreneurs earn less than paid employees. Blanchflower (2000), Benz and Frey (2004, 2008), and Hyytinen and Ilmakunnas (2007) provide further evidence of potential non-pecuniary benefits to entrepreneurship as a determinant of the decision to start a business. Caliendo et al. (2009) demonstrate a further advantage of the expected utility framework for examining the entrepreneurial decision. They find larger measures of risk aversion for self-employed individuals who started their businesses while employed than for those who started their businesses while unemployed. In order to better accommodate these observations, I assume that an individual will choose entrepreneurship so long as the non-pecuniary benefits from entrepreneurship outweigh any loss of income from business ownership.

An individual with utility function  $u(j, y_j; s)$  with states  $j$ , state-dependent income  $y_j$ , and vector of individual control variables  $s$ , chooses entrepreneurial activity if

$$E[u(1, y_1; s)] \geq E[u(0, y_0; s)] \quad (1)$$

State 1 is the entrepreneurial state in equation 1. Individuals with greater preferences for entrepreneurial characteristics—e.g., greater autonomy and internal locus of control—are more likely to choose state 1 over state 0 since they value the non-pecuniary benefits of entrepreneurship more highly.

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<sup>2</sup> Nascent entrepreneurship is used as the definition of entrepreneurship by the Global Entrepreneurship Monitor data effort as well as the PSED.

**Table 1. Studies of entrepreneurship**

Study	Dependent Variable	Data	Method	Important Explanatory Variables	Conclusions
Lazear (2005)	Founder of business	Stanford MBA alumni	Logit	Experience, gender, age, Stanford coursework	Entrepreneurs are “jacks of all trades” with broad, generalized human capital
Dunn and Holtz-Eakin (2000)	Self-employed	NLS	Logit	Own assets, parental assets, father SE, mother SE	Family-specific capital and skills transmission increase probability of SE
Evans and Jovanovic (1989)	Self-employed	NLS	Probit	Assets, work experience, wages	Liquidity constraints bind probability of SE
Evans and Leighton (1989)	Self-employed	NLS, CPS	Probit, LPM	Work experience, income, education	Low wages increase probability of SE
Blanchflower and Oswald (1998)	Self-employed	NCDS	Probit	Inheritance, psychological scores, father employment experience, gender	Finance and liquidity constraints bind probability of SE
Arenius and Minniti (2005)	Nascent entrepreneur	GEM	Logit	Age, gender, employment status, education, income, perception of entrepreneurship	Perceptions are very important, but causality cannot be established
Reynolds (1997)	Nascent entrepreneur	pre-PSED	Stepwise logit, factor analysis	Gender, age, region, employment status, consumer confidence, divorced status, education	Young adults more likely to be engaged in firm formation
Reynolds, et al. (2004)	Nascent entrepreneur	PSED	Calculated prevalence rates	Gender, ethnicity, age, region, population density, marital status, income, housing, employment status, education	Human capital more important to firm formation than wealth or income

Each individual assigns some value to the non-pecuniary characteristics of entrepreneurship and compares the assigned value of non-pecuniary characteristics to the pecuniary costs of entrepreneurship measured, in part, by the difference between entrepreneurial income and the income from paid work. Individuals who stand to earn more

from entrepreneurship will choose to become entrepreneurs as in Lazear's (2005) model. In the random utility model of entrepreneurial choice, however, the individual who may earn less as an entrepreneur than in paid work, but has a higher value for entrepreneurial characteristics, will choose to become an entrepreneur so long as this individual's preferences for entrepreneurial characteristics exceeds the difference in income between states. In income-based models of the choice between entrepreneurship and paid employment, the individual with lower expected income from entrepreneurship is expected to remain in paid work.

The counterfactual income for both entrepreneurs and non-entrepreneurs is not observed in this model. However, the lack of counterfactual income is not a modeling issue in explaining an individual's choice between entrepreneurship and paid employment since the decision to become an entrepreneur is not based solely on the comparison between incomes in each state.

Equation 1 models the difference in utility between entrepreneurship and paid work, which cannot be measured. However, this difference can be operationally modeled by assuming that the utility in each state is a random variable that can be written as follows:

$$E[u(j, y_j; s)] = v(j, y_j; s) + \varepsilon_j \text{ for } j = 0, 1 \quad (2)$$

where  $\varepsilon_j$  is an i.i.d. random variable with zero mean. From here, the model follows the random utility model proposed by Hanemann (1982). Equation 1 can then be re-written using equation 2 to say an individual becomes an entrepreneur ( $j = 1$ ) if the following condition holds:

$$v(1, y_1; s) + \varepsilon_1 \geq v(0, y_0; s) + \varepsilon_0 \quad (3)$$

Since the individual knows which state, entrepreneurship or paid employment, maximizes her utility, the trouble with signing the derivative of the utility function with respect to state for non-entrepreneurs becomes trivial. Additionally, knowing that an individual respondent  $R$  will always choose entrepreneurship when equation 3 is true allows the estimation of a model with probabilities defined as follows:

$$P_1 = \Pr\{R \text{ is an entrepreneur}\} = \Pr\{v(1, y_1; s) + \varepsilon_1 \geq v(0, y_0; s) + \varepsilon_0\} \quad (4)$$

$$P_0 = \Pr\{R \text{ is not an entrepreneur}\} = 1 - P_1$$

The probability  $P_1$  can be estimated using either logit or probit.

It should be noted that the counterfactual income is not available for either the entrepreneur or the non-entrepreneur. However, recall that if an individual entrepreneur's income from entrepreneurship is not higher than from paid work, the income lost to the entrepreneurial venture must be compensated by the non-pecuniary benefits of being an entrepreneur. The opposite is true for any non-entrepreneur. Thus, the lack of counterfactual income is not an issue for an expected utility model of entrepreneurship.

The major difference between the self-employed and nascent entrepreneurs is that the self-employed have been successful at leaving nascent entrepreneurship by establishing a firm. Self-employment is not the only method of leaving nascent entrepreneurship successfully, however it is the only method that will be compared as self-employment has been the dominant definition of active entrepreneurship in the economics literature for reasons noted elsewhere in this paper.

### 3 Data

This paper uses data from the Entrepreneurship Research Consortium's (ERC) Panel Survey of Entrepreneurial Dynamics (PSED) to evaluate the entrepreneurship decision. The ERC formed in 1995 to develop a dataset focused on the activities of nascent entrepreneurs. Nascent entrepreneurs are defined as individuals involved in an early stage of firm formation, differentiating them from entrepreneurship datasets focusing on the self-employed. The consortium completed the four-wave PSED in 2003 and released the publicly available version of the dataset soon thereafter (Gartner, et al. 2004, xv).

#### 3.1 Entrepreneurship state variables

Individuals identified in the PSED as entrepreneurs are referred to as nascent entrepreneurs to reflect the fact that these individuals are engaged in firm formation, rather than being individuals who are currently operating a firm. The PSED contains responses from 1,216 respondents divided between 817 nascent entrepreneurs and 399 non-entrepreneurs in the control group (Table 2). These numbers reflect cleaning of the original dataset using a Stata version of an SPSS program written by ERC executive committee member Kelly Shaver. Shaver's SPSS code is available at <http://www.cofc.edu/~shaverk/kscleans06.sps>. After removing observations for non-response in the variables of interest, 1,126 respondents remain in the dataset. Of these respondents, 744 are nascent entrepreneurs, 494 are self-employed, and 414 are currently self-employed individuals starting another new firm. Selection bias is an issue in this data and will be discussed further in the following section.

**Table 2. Group Sample Counts from the Panel Survey of Entrepreneurial Dynamics**

	Total PSED	Model
Total Number of Respondents	1,216	1,126
Nascent Entrepreneurs	817	744
Control Group	399	382
Self-employed Samples <sup>1</sup>	1,216	1,126
Self-employed	535	494
Not Self-employed	681	632
Nascent Entrepreneur Sub-samples	817	744
Nascent Entrepreneur and Self-employed	450	414
Nascent Entrepreneur and not Self-employed	367	330
Control Group Sub-samples	399	382
Self-employed	85	80
Not Self-Employed	314	302

1. Includes observations from both nascent entrepreneur and control groups

The PSED follows the nascent entrepreneur group over four waves. . For the purpose of this study, the first wave data is used, as it is the only wave that includes information from the control group. Unfortunately, panel data for waves 2-4 is unavailable for the control group. Since individuals can choose to become entrepreneurs at any time, the ERC chose to drop the control group in subsequent waves. The decision not to follow the control group over time means that an examination of entrepreneurship including longitudinal effects cannot be completed using the PSED. For a more complete overview of the sampling methods employed by the ERC, see Reynolds, et al. (2004).

### *3.2 Demographic variables*

Demographic variable measures for each respondent are constructed from responses to the PSED. These measures include binary variables for female, nonwhite, U.S. born, and marital status. Age of the respondent and work experience in the respondent's current (or expected, if respondent is an entrepreneur) is measured in years. Education is measured using a scale from one to six, with one equaling education up to eighth grade and six equaling at least some graduate education. Two variables are used to measure potential human or social capital effects from demographic characteristics of the respondents. These variables are a binary variable for whether the respondent has at least one parent who owned a business and a binary variable for whether the respondent knows someone who currently owns a business.

### *3.3 Behavioral variables*

Behavioral variables are included in the estimated model in order to capture attitudinal and other psychological differences between individuals. These variables include the individual's outlook for the economy and whether the individual prefers doing things better or doing things differently. Economic outlook of the respondent is constructed from the question "Would you describe the local economy as getting stronger, stable, or getting weaker?" Economic outlook equals one if the respondent answers that the economy is getting stronger and zero otherwise. Just over half of the respondents in the sample believe the economy was getting stronger when they were surveyed. Respondents were asked also if they prefer doing things better or prefer doing things differently. Binary variables are created for each of these options.

### *3.4 Financial variables*

Net worth is included in the PSED, as are measures for assets and liabilities. For respondents where net worth observations are missing, the respondent's assets and liabilities are used to construct net worth when possible. The square of net worth is also included, after dividing by 1,000 and is used to model for possible nonlinear relationships between wealth and the probability of entrepreneurship. The log of net worth was considered instead, however most of the respondent's in the sample report negative net worth. A binary variable for home ownership by the respondent is included for this reason as well.

### *3.5 Regional control variables*

In addition to variables from the PSED, several county-level measures are taken from other sources. Each of these measures is included to control for the potential effects of county

economic conditions on the probability an individual chooses to become an entrepreneur. These county-level measures are obtained or constructed separately and added to the sample by matching state and county FIPS codes. The county-level unemployment rate is taken from the U.S. Bureau of Labor Statistics (BLS) and is matched to the respondent based on the year the respondent completed the phone survey. The county per capita income, population and population rate of change, and number of non-farm business owners are from the U.S. Bureau of Economic Analysis (BEA) and are also matched to the respondent by the year the phone survey was completed. The percentage of county residents with at least a college degree is from the 2000 Census. Table 3 presents summary statistics for these control variables and the variables of interest to this study.

**Table 3. Summary Statistics, Model Sample (N=1,126)**

Variable Name	Mean	Std. Dev.	Min	Max
Female	0.517	0.500	0	1
Nonwhite	0.431	0.495	0	1
Age	39.972	12.230	18	93
Born in the U.S.	0.789	0.408	0	1
Education	4.101	1.104	1	6
Married	0.193	0.395	0	1
Parent Owned a Business	0.475	0.500	0	1
Friend Owns a Business	0.710	0.454	0	1
Positive Economic Outlook	0.491	0.500	0	1
Years of Work Experience	17.092	11.151	0	60
Prefers Doing Things Better	0.723	0.448	0	1
Prefers Doing Things Differently	0.307	0.462	0	1
Net Worth (\$100,000)	-122.092	1,108.847	-10,000	25.999
Homeowner	0.658	0.475	0	1
South	0.372	0.484	0	1
Midwest	0.208	0.406	0	1
West	0.220	0.415	0	1
Unemployment Rate	4.510	2.042	1.1	23.6
Per capita Income (\$10,000)	2.734	0.825	1.275	7.963
Population Change (%)	0.008	0.302	-0.874	8.547
County Business Ownership (%)	9.029	2.759	3.132	24.612
County Pct. of College Graduates	24.638	9.167	6.9	60.2
Micropolitan County	0.119	0.324	0	1
Rural County	0.018	0.132	0	1

The aim of the study is to examine differences between self-employed individuals and nascent entrepreneurs. For a direct comparison of the self-employed with nascent entrepreneurs, Table 4 reports the means and standard deviations of the variables included in the models for each group. Simple tests for differences between the means of each variable in the unweighted Model sample fail to reject the null hypothesis of both sample means (self-employed versus nascent entrepreneur) are the same for all variables except age and work experience. The self-employed group has higher means than the nascent entrepreneur group for both variables.

**Table 4. Regressor Statistics by Entrepreneurship Definition, Model Sample (N=1,126)**

Variable Name	Self-Employed (N=494)		Nascent Entrepreneur (N=744)	
	Mean	Std. Dev.	Mean	Std. Dev.
Female	0.476	0.500	0.492	0.500
Nonwhite	0.360	0.481	0.375	0.484
Age	41.265	11.993	39.587	11.132
Born in the U.S.	0.791	0.407	0.819	0.386
Education	4.130	1.127	4.198	1.080
Married	0.162	0.369	0.173	0.379
Parent Owned a Business	0.530	0.500	0.505	0.500
Friend Owns a Business	0.741	0.439	0.745	0.436
Positive Economic Outlook	0.504	0.500	0.512	0.500
Work Experience	18.702	11.623	17.387	10.694
Prefers Doing Things Better	0.704	0.457	0.681	0.466
Prefers Doing Things Differently	0.324	0.468	0.356	0.479
Net Worth (\$100,000)	-179.748	1,339.107	-132.157	1,152.573
Homeowner	0.686	0.464	0.673	0.469
South	0.360	0.481	0.367	0.482
Midwest	0.215	0.411	0.206	0.404
West	0.241	0.428	0.233	0.423
Unemployment Rate	4.504	1.903	4.476	1.878
Per capita Income (\$10,000)	2.715	0.768	2.741	0.815
Population Change (%)	0.009	0.238	0.000	0.165
County Business Ownership (%)	9.321	2.921	9.215	2.715
County Pct. of College Graduates	24.385	9.028	25.023	9.205
Micropolitan County	0.121	0.327	0.118	0.323
Rural County	0.024	0.154	0.016	0.126

## 4 Empirical results

Probit results of models of self-employment and nascent entrepreneurship are reported in Tables 5 and 6. These models use the same regressors in order to compare directly any differences between self-employment and nascent entrepreneurship. The probit model estimated in both cases is:

$\Pr(R_i \text{ is an entrepreneur}) =$

$$\begin{aligned} & \beta_0 + \beta_1 FEMALE_i + \beta_2 NONWHITE_i + \beta_3 AGE_i + \beta_4 USBORN_i + \\ & \beta_5 EDUCATION_i + \beta_6 MARRIED_i + \beta_7 SEPARENT_i + \beta_8 SEFRIEND_i + \quad (5) \\ & \beta_9 OUTLOOK_i + \beta_{10} EXPERIENCE_i + \beta_{11} PSYCH_i + \beta_{12} NETWORTH_i + \\ & \beta_{13} NETWORTH_i^2 + \beta_{13} HOMEOWN_i + REGION_i' \gamma + \varepsilon_i \end{aligned}$$

where  $PSYCH_i$  is defined either as “prefers doing things better” or “prefers doing things differently” depending on the specification. Estimations with and without net worth and its square are reported due to the potential endogeneity of these variables. The variable matrix  $REGION_i$  includes a number of county-level variables for economic conditions. Results for these variables are not reported in Tables 4 and 5, but the descriptive statistics for these variables are reported in Tables 2 and 3.

Sampling weights have been used to adjust for sample selection issues. The ERC admits that the PSED is a non-representative sample of individuals as the result of oversampling for women and minorities therefore weights based on the Panel Study of Income Dynamics are included for use in estimation (Gartner et al. 2004). One noticeable result of this oversampling is that almost half—535 of 1,216—of the PSED respondents are currently self-employed.

### 4.1 Demographic variables

Self-employed individuals differ in few ways demographically from nascent entrepreneurs. Women are nearly eight percent less likely to be self-employed and thirteen percent less likely to be nascent entrepreneurs, while nonwhites are no more or less likely either to be self-employed or to be nascent entrepreneurs. The gender results of both models are similar to those of previous studies of self-employment, however the nonwhite coefficients differ from those reported in earlier papers on self-employment.

Age does not affect the probability an individual is self-employed. In some ways, this result reflects the reality of self-employment since it is clear an older individual is not likely to start a firm, it is equally clear an older individual is not likely to quit an established firm. Previous studies report differing results—for instance, Dunn and Holtz-Eakin (2000) and Fairlie and Meyer (1996) find that one added year in age increases the probability of self-employment. However, Arenius and Minniti (2005) and Reynolds (1997) find that older individuals are less likely to be entrepreneurs. This result is also found in the model of nascent entrepreneurship, where one added year in age reduces an individual’s probability of being a nascent entrepreneur by almost one percent. Similarly, an additional year of work experience in the (potential) firm’s industry raises the probability both of self-employment and of nascent entrepreneurship, but by less than one percent in each case.

**Table 5. Probit Models of Self-Employment (N=1,126)**

	"Better" Model		"Differently" Model	
	with Net Worth	without Net Worth	with Net Worth	without Net Worth
Female	-0.077 [0.034]**	-0.077 [0.034]**	-0.078 [0.034]**	-0.078 [0.034]**
Nonwhite	-0.028 [0.037]	-0.027 [0.037]	-0.026 [0.037]	-0.025 [0.037]
Age	-0.001 [0.002]	-0.001 [0.002]	-0.001 [0.002]	-0.001 [0.002]
Born in the U.S.	0.004 [0.041]	0.005 [0.041]	0.004 [0.041]	0.005 [0.041]
Education	-0.014 [0.016]	-0.012 [0.016]	-0.014 [0.016]	-0.012 [0.016]
Married	-0.015 [0.048]	-0.015 [0.047]	-0.014 [0.048]	-0.015 [0.047]
Parent Owned a Business	0.054 [0.034]	0.056 [0.034]*	0.052 [0.034]	0.054 [0.034]
Friend Owns a Business	0.048 [0.037]	0.045 [0.037]	0.047 [0.037]	0.044 [0.037]
Positive Economic Outlook	0.028 [0.034]	0.027 [0.034]	0.027 [0.034]	0.026 [0.034]
Years of Work Experience	0.005 [0.002]**	0.005 [0.002]**	0.005 [0.002]**	0.005 [0.002]**
Prefers Doing Things Better	-0.082 [0.037]**	-0.08 [0.037]**		
Prefers Doing Things Differently			0.068 [0.036]*	0.067 [0.036]*
Net Worth (\$100,000)	0.004 [0.004]		0.004 [0.005]	
Net Worth (\$100,000) Squared/1,000	0.000 [0.000]		0.000 [0.000]	
Homeowner	-0.034 [0.038]	-0.031 [0.037]	-0.036 [0.038]	-0.033 [0.037]

Coefficients are marginal changes in probability. White's corrected standard errors in brackets. \*  $p < 0.1$ . \*\*  $p < 0.05$ . \*\*\*  $p < 0.01$ . All specifications include regional dummy variables and county-level variables.

**Table 6. Probit Models of Nascent Entrepreneurship (N=1,126)**

	"Better" Model		"Differently" Model	
	with Net Worth	without Net Worth	with Net Worth	without Net Worth
Female	-0.133 [0.033]***	-0.132 [0.033]***	-0.131 [0.033]***	-0.13 [0.033]***
Nonwhite	0.049 [0.034]	0.05 [0.034]	0.05 [0.034]	0.05 [0.034]
Age	-0.009 [0.002]***	-0.009 [0.002]***	-0.009 [0.002]***	-0.009 [0.002]***
Born in the U.S.	0.159 [0.042]***	0.158 [0.042]***	0.156 [0.042]***	0.156 [0.042]***
Education	0.019 [0.015]	0.018 [0.015]	0.018 [0.015]	0.017 [0.015]
Married	-0.083 [0.048]*	-0.084 [0.048]*	-0.086 [0.048]*	-0.087 [0.048]*
Parent Owned a Business	0.014 [0.033]	0.016 [0.033]	0.011 [0.033]	0.012 [0.033]
Friend Owns a Business	0.079 [0.037]**	0.078 [0.037]**	0.081 [0.037]**	0.08 [0.037]**
Positive Economic Outlook	0.066 [0.033]**	0.064 [0.033]*	0.062 [0.033]*	0.061 [0.033]*
Years of Work Experience	0.004 [0.002]*	0.004 [0.002]*	0.004 [0.002]*	0.004 [0.002]*
Prefers Doing Things Better	-0.136 [0.035]***	-0.134 [0.035]***		
Prefers Doing Things Differently			0.154 [0.034]***	0.153 [0.034]***
Net Worth (\$100,000)	-0.003 [0.004]		-0.004 [0.004]	
Net Worth (\$100,000) Squared/1,000	0.000 [0.000]		0.000 [0.000]	
Homeowner	-0.021 [0.035]	-0.026 [0.035]	-0.023 [0.035]	-0.029 [0.035]

Coefficients are marginal changes in probability. White's corrected standard errors in brackets. \*  $p < 0.1$ . \*\*  $p < 0.05$ . \*\*\*  $p < 0.01$ . All specifications include regional dummy variables and county-level variables.

US-born individuals are about sixteen percent more likely to be nascent entrepreneurs, but no more or less likely to be self-employed. Again, we would expect that a US-born individual is less likely to start a new firm, but would be no more or less likely to quit a firm that is operating. In this case, the result of the nascent entrepreneurship model is similar to previous research but the result of the self-employment is not.

Added education has no effect on the probability of being either self-employed or a nascent entrepreneur. Fairlie and Meyer (1996) and Dunn and Holtz-Eakin (2000) find mixed results for the impact of education on self-employment, so the lack of significant impact of education on either self-employment or nascent entrepreneurship in these results is not entirely surprising.

Married individuals are eight percent less likely to be nascent entrepreneurs, but no more or less likely to be self-employed. The self-employment result is similar to that of Dunn and Holtz-Eakin (2000) while the nascent entrepreneur result is similar to that of both Evans and Jovanovic (1989) and Evans and Leighton (1989). However, Fairlie and Meyer (1996) find that married individuals are more likely to be self-employed.

Having parents that owned a business does not change the probability an individual will be a nascent entrepreneur or self-employed. However, having friends that are business owners has an influence on nascent entrepreneurship although not on self-employment. Having friends that own a business increases the probability of nascent entrepreneurship by eight percent. Arenius and Minniti (2005) also report that knowing other entrepreneurs increases the probability of being an entrepreneur.

#### *4.2 Behavioral variables*

Similar to the few differences between self-employed and nascent entrepreneurs in demographics, the two groups also differ in few ways in terms of behavior or attitude. Having a positive economic outlook does not affect the probability of being self-employed, but it increases the probability of nascent entrepreneurship by six percent. In the case of the self-employed, this result can be explained in part by the fact that a self-employed person may not necessarily quit his firm when there is an economic downturn.

Both the self-employed person and the nascent entrepreneur are individuals who prefer doing things differently rather than better. Those who prefer doing things better are about eight percent less likely to be self-employed and almost fourteen percent less likely to be a nascent entrepreneur. However, individuals who prefer doing things differently are seven percent more likely to be self-employed and nearly sixteen percent more likely to be nascent entrepreneurs. Researchers familiar with the PSED may recall that the survey allows for the possibility of being both better and different or neither better nor different, indicating a model with both variables would be appropriate. However, 97 percent of this sample prefers either better or different and no respondent in this sample prefers neither better nor different. For this reason, separate specifications using either better or different were considered more reliable than specifications using both better and different.

## 5 Conclusions

This paper examines models of entrepreneurship with data from the Panel Survey of Entrepreneurial Dynamics (PSED) collected by the Entrepreneurship Research Consortium (ERC). These models utilize different definitions within the PSED, based on either self-employment or nascent entrepreneurship. Differences between these definitions are examined by estimating probit models with samples based on each separate definition. For instance, the PSED allows the currently self-employed to identify themselves as nascent entrepreneurs, by planning a new venture while working in their current one.

The finding the estimated results for nascent entrepreneurs mostly reflect the results of other authors' estimates of self-employment—particularly, Evans and Jovanovic (1989), Blanchflower and Oswald (1998), Dunn and Holtz-Eakin (2000), and Lazear (2005). Certainly, the similarities between nascent entrepreneurs in the PSED and self-employed individuals in other datasets confirm the comparative consistency of the PSED in continued entrepreneurship research.

However, the estimates of self-employment using the PSED data also confirm the results reported in earlier work on the self-employed. If the question is whether the nascent entrepreneur definition is better than the self-employment definition employed in the past—use that was driven primarily by data availability—then the evidence is not so clear. The PSED includes entrepreneurs at an earlier stage of firm formation than self-employment, and that may have advantages in the examination of entrepreneurship. On the other hand, the fact my estimated model of nascent entrepreneurship returns results similar to earlier models of self-employment suggests the nascent entrepreneur definition is no better than—and no improvement of—the self-employed measure employed in earlier studies, at least with respect to the question of the factors driving individuals toward entrepreneurship and away from paid employment.

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