

Business Ownership vs. Self-Employment

Audrey Light*
Department of Economics
Ohio State University
light.20@osu.edu

Robert Munk
Department of Economics
Ohio State University
munk.19@osu.edu

December 2014
Revised April 2015

Abstract: Using new data from the 1979 National Longitudinal Survey of Youth, we assess the level of “agreement” between alternative entrepreneurial measures. We find that 68% of jobs classified as self-employment are not independently reported as self-owned businesses, and that 16% of self-owned businesses are not classified as self-employment. Self-owned businesses that are incorporated or *not* identified as self-employment tend to be associated with additional signs of entrepreneurship such as self-identification as an entrepreneur, verbatim job descriptions that speak to owning the business or having a managerial role, and high individual levels of skill and assets. At the other extreme, self-employment that is unincorporated and/or not independently identified as business ownership is associated with low levels of skill and assets, and home-based, single-person work. Our evidence suggests that self-employment should not be viewed as a synonym for business ownership or entrepreneurship. [**Key words:** self-employment, business ownership, entrepreneurship.]

*Corresponding author. Address: 410 Arps Hall, 1945 N. High Street, Columbus OH 43210.

I. Introduction

A noteworthy feature of the entrepreneurial economics literature is the lack of consensus on how to conceptualize and measure entrepreneurship. At a theoretical level, Knight (1921), Schumpeter (1934), Lucas (1978), Kihlstrom and Laffont (1979), and Lazear (2005) are among the many studies that offer “competing” definitions of entrepreneurship. In the empirical literature, analysts have argued that the two most widely-used proxies for entrepreneurship—business ownership and self-employment—are problematic because they potentially exclude nascent entrepreneurs while including activities that do not necessarily entail risk, growth, and innovation (Carland *et al.* 1984; Parker 2009; Hurst and Pugsley 2013, Levine and Rubinstein 2013; Henrekson and Sanandaji 2014). Nonetheless, self-employment is the proxy of choice for entrepreneurship because it is widely available in microdata—and analysts habitually use the terms self-employment, business ownership, and entrepreneurship interchangeably (Evans and Jovanovic 1989; Evans and Leighton 1989; Blanchflower and Oswald 1998; Dunn and Holtz-Eakin 2000; Hamilton 2000; Fairlie 2002; Ekelund *et al.* 2005; Ahn 2010; Asoni 2011).¹

In this study we address a set of issues that have been largely overlooked in this definitional debate by exploiting new data in the 1979 National Longitudinal Survey of Youth (NLSY79). To begin, we put aside the question of who might be an entrepreneur and ask whether the self-employed are necessarily business owners, and whether business owners are necessarily self-employed. Over the 36 years that the NLSY79 has been in progress, respondents have identified self-employment jobs by answering standard “class of worker” questions. In 2010, respondents identified each business owned since age 18, and most of these businesses can be linked to previously-or contemporaneously-reported jobs. This unique feature of the data allows us to assess the level of “agreement” between self-employment and business ownership. We find that both men and women are about 15 percentage points more likely to be self-employed than to own a business at some point during the observation window, and that self-employed jobs outnumber self-owned businesses by a factor of 2.3. Moreover, 16% of businesses are *not* classified as self-employment and an astounding 68% of self-employment is *not* identified as business ownership.

To explore the considerable disagreement between self-employment and business ownership, we consider additional indicators of entrepreneurial activity: incorporation status, the

¹Each of the cited articles uses at least two of these terms interchangeably. To illustrate, in the abstract for his seminal article, Hamilton (2000) writes (*italics added*): “The empirical results suggest that the nonpecuniary benefits of *self-employment* are substantial: Most *entrepreneurs* enter and persist in *business* despite the fact that they have both lower initial earnings and lower earnings growth than in paid employment, implying a median earnings differential of 35 percent for individuals in *business* for 10 years.”

receipt of business income, respondents' self-identification as entrepreneurs, and information gleaned from verbatim descriptions of the work performed on jobs classified as self-employment or self-owned businesses. We find that *incorporated* self-employed jobs (especially when held by self-identified entrepreneurs) are far more likely than other self-employment to be identified as businesses. Even among this subsample, however, 30% of self-employment corresponds to neither business ownership nor reported business income. In contrast, *unincorporated* businesses are more likely than incorporated businesses to be classified as self-employment, with trivial differences between self-identified entrepreneurs and non-entrepreneurs.

In the remainder of our analysis, we compare individual and job characteristics across different types of self-employment and business ownership, and use multinomial logit analysis to identify determinants of the decision to hold each job type. We find that mean levels of schooling, skill, experience, and assets are highest among individuals holding incorporated businesses and "unlinked" businesses (*i.e.*, self-owned businesses not classified as self-employment), and lowest among unincorporated self-employment and "unlinked" self-employment (*i.e.*, self-employed jobs not identified as self-owned businesses). These patterns are corroborated by multivariate regression analysis where we find, for example, that increased asset levels have a pronounced, positive association with the estimated probability of owning incorporated and unlinked businesses and a near-zero association with the estimated probability of holding unincorporated and unlinked self-employed jobs. We also find that owners of incorporated and unlinked businesses are more likely than others to use such terms as "I own the business" or "I run the business" when describing the type of work they perform, while the unincorporated, unlinked self-employed are likely to describe home-based, one-person pursuits such as baby-sitting and handyman work.

Our analysis demonstrates that survey respondents do not view self-employment and business ownership as synonyms and that, more generally, various entrepreneurial indicators are often at odds with one another. Entrepreneurship is an elusive construct, but the evidence suggests that it is more likely to be found among individuals who explicitly claim to be business owners than among those who identify their jobs as self-employment.

II. Background

A number of analysts have questioned whether business ownership or self-employment is a suitable proxy for entrepreneurship. Carland *et al.* (1984) advocate distinguishing between owners of *small* businesses and entrepreneurs. Following Schumpeter (1934), they define entrepreneurship (p. 354) as the act of carrying out "new combinations of means of production." They argue that small businesses are not always innovative, growth-oriented, or otherwise entrepreneurial, while *large* business owners are likely to qualify as entrepreneurs. In a similar vein, Henrekson and Sanandaji (2014) argue that small business owners (whom they equate with

the self-employed) should not be viewed as entrepreneurs because they rarely introduce innovations, hire employees, or grow their businesses. Hurst and Pugsley (2013) provide a wealth of original evidence suggesting that small businesses rarely conform to notions of entrepreneurship. For example, they demonstrate that relatively few small business owners claim to have started their business to offer a new product or service, or express an expectation of or desire for growth and innovation.

Turning to self-employment, Berglann *et al.* (2011) claim (p. 180) that “a self-employed person is obviously an entrepreneur” insofar as he/she works for the firm (unlike an investor) while bearing considerable income risk (unlike a wage employee). Nonetheless, they object to equating sole proprietorship with entrepreneurship on the grounds that the definition of entrepreneurship should be *expanded* to include employed owners of limited liability companies who, like the self-employed, work for their own firms while bearing income risk. In a different vein, Levine and Rubinstein (2013) advocate restricting the proxy for entrepreneurship to a *subset* of the self-employed—*viz.*, those who report their status as incorporated. They argue that this is a means of honing in on skilled, innovative, growth-oriented business owners who come closer to meeting accepted definitions of entrepreneurship.

Parker (2009) summarizes many of the preceding arguments about how best to proxy entrepreneurship, while also considering the distinction between business ownership and self-employment. He defines self-employed workers as individuals who do not earn a regular wage or salary, but instead run their own business at their own risk. While many self-employed workers are sole proprietors (owners of an unincorporated business owned by one person), self-employment also includes partners of unincorporated businesses and, potentially, owners of incorporated businesses. As Parker notes, self-employment and business ownership need not correspond if (a) individuals who own a business as a sideline are classified as regular, “wage” employees on the basis of their primary job; (b) incorporated business owners identify themselves as wage employees of their own business, rather than as self-employed; and (c) “casual” self-employed workers are not identified as business owners.

Parker also describes a number of ways in which self-employed workers might be misclassified. Given that we rely on individual-level survey data in the current study, the most relevant of his arguments are that (a) respondents’ propensities to classify themselves as self-employed depend on whether they consider their tax status or legal status, which are often at odds; (b) surveys might classify workers as “wage” employees if their self-employed venture does not generate income, or is not their primary source of income; and (c) certain types of workers, including free-lancers, contract workers, independent salespeople, employees of a family business, and workers with a high degree of autonomy might be classified as self-employed when, in fact, they are wage employees.

We can reinforce Parker's (2009) arguments by noting that survey respondents can interpret the questions posed to them as they choose, and can potentially have very different views of self-employment and business ownership than what was intended by the survey designers. In III.B, we describe the precise questions asked in the NLSY79 to identify self-employment and business ownership. These questions appear to be reasonably explicit and clear, yet some of the "disagreement" between self-employment and business ownership might be due to respondents viewing these terms in unanticipated (but not incorrect) ways. In particular, jobs that can be characterized as home-based, independent, one-person, and/or informal dominate the self-employment category, yet individuals who hold these jobs tend not to view themselves as business owners.

III. Data

A. Sample Selection

We use data from the 1979 National Longitudinal Survey of Youth (NLSY79), which began in 1979 with a sample of 12,686 respondents (6,403 men and 6,283 women) born in 1957-65. Respondents were interviewed annually from 1979 to 1994, and biennially thereafter. We use data collected from 1979 through 2012.

We apply two criteria to determine which respondents contribute data to the samples used for our analysis. First, we confine our attention to 7,818 respondents who were interviewed in 2010 and/or 2012. Whereas self-employed jobs and annual business income were tracked by the NLSY79 from its inception, business ownership was not directly identified until 2010, when respondents were asked to identify every business owned since age 18. Anyone who reported one or more businesses answered a series of questions about each business. All respondents, regardless of past or current business ownership, were asked a set of general questions, including whether they consider themselves to be entrepreneurs, and whether any family members owned businesses.² Second, we keep only those respondents who reported at least one job or business between their career start date (which we define as the start of the first nonenrollment spell lasting at least 12 months) and their last (2010 or 2012) interview, at which time respondents were ages 46-55.³ This criterion eliminates only 41 individuals, leaving us with a sample of 7,777 individuals (3,809 men and 3,968 women).

Next, we form a sample of jobs reported by these 7,777 individuals. NLSY79 respondents have identified virtually every job held over the course of the survey. We keep any job if (a) it

² Respondents not interviewed in 2010 were asked the one-time, retrospective business ownership questions and the "general" questions in 2012. Respondents interviewed in 2010 and 2012 were asked about any new or ongoing businesses in 2012.

³ See Light (1998) and Light and McGee (2015) for justification of this career start date and discussion of alternative definitions.

began after the career start date or, for jobs that “spanned” the start date, if at least half the observed duration followed the career start date; and (b) class of worker (private sector, government, self-employed, *etc.*) is identified. Select job characteristics, including class of worker, were only asked if a job lasted at least nine weeks and hours worked met a threshold level (20 hours from 1979 to 1985 and 10 hours thereafter), so the latter criterion causes a number of short-term and/or part-time jobs to be dropped.⁴ After imposing these selection rules, we are left with a sample of 68,012 jobs held by 7,777 individuals.

We form a sample of businesses owned by these 7,777 individuals by selecting every business reported in 2010 and/or 2012 for which ownership began after the career start date; in the rare case where a business was in progress at the start of the career, we require that at least half the reported ownership period exceed the career start date. Our 7,777 sample members reported a total of 2,350 businesses in 2010-12, and 2,287 of these businesses (97%) were owned after the career start date. Most of these 2,287 businesses correspond to one of the 68,012 jobs in our sample: 1,394 businesses were owned at the 2010 or 2012 interview date and, as a result, reported by respondents in a way that tied them automatically to a contemporaneously-reported job; 610 of the remaining 893 businesses (all of which were no longer owned at the time of the 2010 or 2012 interview), have been “linked” to a previously-reported job.⁵ Combining our sample of 68,012 jobs (2,004 of which are linked to businesses) and 2,350 businesses (only 283 of which are not linked to jobs), we have a sample of 68,295 unique jobs and businesses. We summarize this sample size information by sex in table 1.

B. Measures of Entrepreneurship

A primary goal of our analysis is to compare alternative indicators of entrepreneurial activity: self-employment, business ownership, incorporation status of both self-employed jobs and owned businesses, self-identification as an entrepreneur, earned business income, and verbatim job descriptions. In this subsection, we describe each of these key indicators.

Self-employment: As noted in III.A., NLSY79 respondents have identified virtually every job held over the course of the survey, and have answered standard “class of worker” questions about every job meeting duration and weekly hours cutoffs. From 1979 to 1993, the class of worker question posed to respondents (along with a hand-card) was worded as follows:

Are/Were you an employee of a private company, business, or individual for wages, salary, or commission; a government employee; self-employed in own business, professional practice or farm; working without pay in family business or farm?

⁴ See the NLSY79 Topical Guide at <https://www.nlsinfo.org/> for details.

⁵NLSY79 staff used reported start/stop dates and company names (which are not publicly available) to link “old” businesses reported in 2010 to previously-reported jobs. In cases where links were not found or were ambiguous, respondents were asked during the 2012 interview to provide verification or additional information.

From 1994 onward, hand-cards were eliminated and the question was changed to:

*Are/Were you employed by government; by a private company; by a non-profit organization; or are/were you self-employed?*⁶

We classify a job as self-employment if the respondent answered either “self-employed” or “working...in family business or farm” in the early regime, and if he/she answered “self-employed” in the later regime.⁷ Class of worker was reported multiple times for jobs that were in progress long enough to span multiple interviews. To assign each job a single, time-invariant indicator, we use the modal response; when the mode is non-unique, we use “self-employment” if it was reported as often as any other response.

Business ownership: As detailed in III.A, respondents were asked to identify all businesses owned since age 18 on a one-time, retrospective basis in 2010, or in 2012 if they missed the 2010 interview. In addition, respondents interviewed in both survey rounds were asked to identify any new or ongoing businesses in 2012. In all cases, respondents were first read the following explanation of what type of businesses were of interest:

*By business, we mean any activity operated with **regularity** for the purpose of generating **income or profit**. We are interested in all incorporated companies and partnerships in which you had any ownership share, as well as unincorporated businesses that you may have operated as a sole proprietor, independent contractor, consultant, or free-lancer. This even includes informal businesses such as cleaning services, gardening services, and the selling of goods out of your home, as long as they generated income and were operated on a regular basis. The only businesses we are not interested in are those operated on a highly sporadic basis, those carried out purely as a hobby, and those in which you were merely a shareholder or investor with no role in the operation of the company.*

Since you were 18 years old, have you ever owned a business that would be of interest to us according to this description?

As noted in III.A., we use any business reported in this fashion as long as it was owned after the start of the career. We refer to a business as “linked” to a job if it corresponds to a previously- or contemporaneously-reported job, regardless of whether that job is self-employment.

Incorporation status: Whenever class of worker was given as “self-employed,” the respondent received the following follow-up question about the same job: *Is/Was your business*

⁶ From 2002 to 2012, respondents were assigned “self-employed” as their class of worker if they answered “yes” to any of a series of screener questions designed to identify self-employed and free-lance workers—e.g., if they said they owned at least 50% of a business or had a title of CEO or managing partner. While this method of establishing class of worker constitutes a major regime change, very few respondents were classified as self-employed as a result of these screener questions, and the secular trend in self-employment rate did not change relative to earlier years.

⁷The response of “working...in family business or farm” accounts for only 3% of self-employed jobs held by men and 5% held by women. Our findings are not sensitive to whether we include this category among the self-employed. We do so under the assumption that respondents with family businesses/farms are likely to classify themselves as self-employed in years when this is not offered as a separate category.

incorporated or unincorporated? “Don’t know” was an allowable response, and one that was chosen for about 5% of self-employed jobs. The question—which, along with the class of worker question, was taken from the Current Population Survey—clearly presumes that “self-employment” and “business ownership” are interchangeable.

For each self-owned business reported in 2010 and 2012, respondents were asked a series of questions about the business, including the following:

What (is/was) the legal form of this business? (Is/Was) it a sole proprietorship; partnership or limited liability partnership; limited liability corporation; subchapter S corporation; general corporation; nonprofit organization; or other.

We consider each business to be incorporated if the respondent gave any response other than “sole proprietorship,” “nonprofit,” or “other.”

Self-identification as entrepreneur: As part of the retrospective business ownership module administered in 2010 or 2012, respondents were asked:

Do you consider yourself to be an entrepreneur?

If respondents betrayed confusion or asked for clarification, interviewers were instructed to explain that “an entrepreneur is someone who launches a business enterprise, usually with considerable initiative and risk.” This question was asked of all respondents, regardless of whether they reported having owned any businesses since age 18.

Business income: In every interview round, respondents were asked to identify their income in the last calendar year (as well as their spouse’s or partner’s income) from a variety of sources, including military service, wages, salary, commissions or tips from all jobs, and unemployment compensation. This set of questions includes the following:

Excluding any income you already have mentioned, during [relevant calendar year] did you receive any money in income from your own farm? ...from your own non-farm business, partnership, or professional practice?

Respondents answering “yes” to either question were then asked to report the amount. We reduce this information to a yes/no indicator of whether any business or farm income was reported during any calendar year in which each business and self-employed job was in progress.

Verbatim job descriptions: For every job that qualified for the “class of worker” question described above, respondents were asked the following questions (also taken from the Current Population Survey) for the purpose of coding industry and occupation:

What kind of work do/did you do for [employer]?

What are/were some of your main activities or duties?

What kind of business or industry is/was this? (What do/did they make or do?)

Verbatim responses to these three questions (the wording of which changed slightly over time) are not available for public use, but we had a unique opportunity to access them for all jobs reported from 1994 through 2010. We used this information to create a number of job

descriptors for self-employment jobs and businesses reported during this timeframe.

Although the questions were designed to elicit information about occupation and industry, many respondents explicitly referred to an ownership, managerial, or employee role at their place of employment. Based on the language used, we coded the following mutually-exclusive indicators of the individual's role at each reported job:

<u>ROLE</u>	<u>Description</u>
<i>Own</i>	Explicitly claimed to own the business by using such terms as <i>own, co-own, owner, proprietor, president, or CEO</i> (of a small business).
<i>Run</i>	Explicitly claimed to run the business by using such terms as <i>director, officer, or I run the business</i> . While these individuals might also own the business, their status is less clear than in cases coded as “owns” or “self-employed” (see below).
<i>Manage</i>	Explicitly claimed a managerial or executive role by using such terms as <i>boss, manager, supervisor, executive, CFO, or vice president</i> . It is unclear whether these individuals own the business, or simply manage it.
<i>Self-employed</i>	Explicitly used the term <i>self-employed</i> .
<i>Independent</i>	Used such terms as <i>free-lance, independent, or contractor</i> , or described the work in a way that clearly indicated he/she was an independent distributor or salesperson.
<i>Does all the work</i>	Did not use any terms referred to above, but suggested that he/she did all the work for the business either by describing an extensive list of tasks (<i>e.g., cleaning, maintenance, clerking and accounting while working in a motel</i>) or explicitly using such terms as <i>I do everything</i> .
<i>Does some of the work</i>	Did not use the terms referred to above, but suggested that he/she only did some of the work for a business; <i>e.g., described installing dry-wall for a construction company, or doing sales for a manufacturing company</i> .
<i>Employee</i>	Described an employee role, either by making reference to following a boss's or manager's direction, or by using such terms as <i>secretary, book-keeper, cashier, waitress, assistant manager, account manager, or apprentice</i> .
<i>Unknown</i>	All remaining jobs. With few exceptions, these are jobs for which the verbatims are extremely short and vague.

We defined an additional, independent variable, “*works at home*,” when the verbatim responses strongly indicated employment based in the respondent's home, car, or boat, or at a client's home. This variable identifies in-home baby-sitters and care-givers, handymen, home-based writers, artists, *etc.*, and entertainers who perform at bars and private parties; it excludes farmers.

We defined a third set of variables that are essentially aggregated occupational classifications based on the verbatim responses. We defined the categories described below after determining what type of work is most commonly described by the self-employed and business owners. Baby-sitting, housekeeping, construction, landscaping, and truck driving are reported often enough to merit their own categories, although we include similar but less-common types of work in each category (*e.g.*, pet-sitting with baby-sitting). Other categories are comprised of a variety of jobs that are each reported only a handful of times, but that are similar in nature. “Solo” work, for example, includes numerous jobs that are typically performed (by the self-employed) as individuals, often from home.

<u>WORK</u>	<u>Description</u>
<i>Care-giver</i>	Baby-sitter; care-giver; personal assistant; pet-sitter; tutor
<i>Cleaner</i>	Cleans houses, offices, or cars
<i>Beauty worker</i>	Hair stylist; barber; cosmetologist; manicurist
<i>Solo work</i>	Artist; photographer; musician; actor; writer; editor; graphic designer; caterer; umpire; clergyman; substitute teacher; masseuse; personal trainer; medical transcriber
<i>Construction</i>	Builds, repairs, or installs materials in houses, cars, or boats; includes handy-man work
<i>Yard work</i>	Landscaping; lawn care; tree care; pest control; fire-wood supplier
<i>Transportation</i>	Drives trucks or snow plows; delivers, including couriers, newspaper delivery
<i>Practitioner</i>	Doctor; lawyer; CPA; tax preparer; architect; counselor (professional practices)
<i>REI</i>	Real estate or insurance agent; mortgage loan officer; property manager
<i>Consultant</i>	Consulting (not as part of broader job)
<i>Retail</i>	Works in restaurant, bar, or store; street vendor
<i>Other</i>	None of the above

C. Additional Variables Used for Choice Models

As the final step of our analysis, we estimate multinomial logit models to identify determinants of the decision to hold various types of entrepreneurial jobs. First, we define an “entrepreneurial job” as *any* self-employed job, and estimate a three-state model in which individuals choose (any) self-employment, any wage job (defined as any job not classified as self-employment, including business ownership that does not link to self-employment), and nonemployment. Alternatively, we use a similar three-state model but replace “any self-employed job” with “any owned business,” and redefine the wage-job alternative as any job (including self-employment) not classified as an owned business. Second, we use a four-state model to disaggregate self-

employed jobs into incorporated and unincorporated self-employment; alternatively, we disaggregate business ownership into incorporated and unincorporated businesses. Third, we instead disaggregate self-employed jobs into those that link to an owned business and those that do not and, alternatively, we disaggregate owned businesses into those that link to self-employment (which duplicates one of the states just described), those that link to wage jobs, and those that are unlinked to any job. These definitions yield a four-state model for self-employment and a five-state model for business ownership.

Each individual in our sample of jobs and businesses contributes one observation per year to the regression samples for every year between his/her career start date and last (2010 or 2012) interview. Each person-year observation begins at the interview date or, for noninterview years, at a “pseudo-interview date” defined one year after the last interview date. Following Levine and Rubinstein (2013), we estimate the probability of *holding* each type of entrepreneurial job (relative to a wage job), which combines the decision to transition into each type of entrepreneurial job with the decision to remain on the given job. While a model that focuses on entry decisions or duration decisions is arguably preferred, we find that the estimates from our “broader” model are similar to what is obtained from an entry probability model, but much more precisely estimated.

In estimating these choice models, we control for a rich array of covariates that have been identified in the literature as potentially key determinants of entry into self-employment or business ownership, including assets (Evans and Jovanovic 1989; Dunn and Holtz-Eakin 2000; Hurst and Lusardi 2004; Disney 2009; Fairlie and Krashinsky 2012) and risk preference (Cramer *et al.* 2002; Ekelund *et al.* 2005; Johansson *et al.* 2005; Ahn, 2010).

We construct our *assets* measure by adding all asset values reported for a variety of sources (housing, savings, stocks/bonds, retirement funds, *etc.*) in select interview years, running person-specific regressions of total assets on a polynomial in age, and using the estimated coefficients to compute expected assets at each observation date. Assets are then deflated by the CPI-U, and expressed in 2000 dollars. Our *risk preference* measure is based on a series of questions (asked in 1993, 2002, 2004, and 2006) about the respondent’s willingness to accept income gambles. Following Barsky *et al.* (1997) and Light and Ahn (2010), we use time-varying categorical responses to these questions to model the Arrow-Pratt coefficient of risk tolerance, by sex, as a function of a quadratic in age, race (black vs. non-black), ethnicity (Hispanic vs. non-Hispanic), and a measurement error term. We then use the estimated coefficients to compute risk tolerance at each observation date. In our choice models, we control for a quadratic function of both assets and risk tolerance to allow these key covariates to have nonlinear effects on the transition probabilities; higher-order polynomials proved not to affect our inferences.

Additional covariates include a set of time-constant variables that control for demographic

characteristics, family background, and “initial” levels of cognitive and noncognitive skill. Specifically, we control for race (black vs. nonblack), ethnicity (Hispanic vs. non-Hispanic), whether the individual is foreign born, whether any family members owned businesses, mother’s highest grade completed, and the individual’s highest grade completed at the career start date. Skill measures include a percentile score on the Armed Forces Qualification Test (AFQT), and scores for the Rotter Locus of Control and Rosenberg Self Esteem scales.⁸

In addition to assets and risk preference, we include a number of time-varying individual, family, and job characteristics measured at each observation date. These controls include marital status (single, cohabiting, married, or separated/divorced/widowed), the presence of young (age \leq 6) in the household, the presence of any children (age \leq 18) in the household, health status, age and age-squared, cumulative work experience (cumulative number of weeks worked at least 20 hours since the career start date, divided by 52), job tenure (elapsed weeks since the start of the current job, divided by 52), region of residence, and whether the residence is urban or rural.

IV. Findings

A. Comparisons of Alternative Entrepreneurship Indicators

We begin our discussion by comparing “long-term” indicators of entrepreneurship. Specifically, in table 2 we compare the fraction of respondents who hold at least one self-employed job, own at least one business, and/or report any business income between their career start date and last (2010 or 2012) interview date. We also assess the fraction of respondents who report that they consider themselves to be entrepreneurs.

The evidence in table 2 is noteworthy for a number of reasons. First, workers are far more likely to be self-employed over the first (approximately) 30 years of their careers than to be business owners. Among men, 43% hold at least one self-employed job, while only 29% own at least one business. Women are considerably less likely to experience either outcome, but their 16 percentage-point gap between rates of self-employment and business ownership is similar to the 14 percentage-point gap seen for men.⁹ Second, for both men and women the incidence of reporting business income lies roughly halfway between the incidences of business ownership and self-employment. While we view business income as an entrepreneurial outcome of interest, it can understate the incidence of business ownership and self-employment if respondents report their income as wage/salary income or do not draw personal income from their business. Third, while 53% of men and 41% of women experience at least one of these entrepreneurial outcomes,

⁸AFQT scores are based on scores for the Armed Services Vocational Aptitude Battery (ASVAB), which was administered to NLSY79 respondents in 1980. We use Rotter and Rosenberg scores from scales administered in 1979 and 1980, respectively. All scores are adjusted for the age at which the test was administered.

⁹ This long-term evidence is consistent with table 1, which shows that men (women) report 2.1 (2.6) times as many self-employed jobs as businesses.

a far smaller percentage (25% of men and 13% of women) identifies as entrepreneurs. Fourth, the incidence of each entrepreneurial outcome is substantially higher among self-identified entrepreneurs than among the overall sample. For example, women entrepreneurs are almost twice as likely as all women to hold at least one self-employed job (0.64 vs. 0.33), 3.3 times more likely to own at least one business (0.57 vs. 0.17), and more than twice as likely to report business income (0.48 vs. 0.23). Fifth, the “gap” between self-employment and business ownership is significantly lower among self-identified entrepreneurs than among the full sample. Whereas men (women) are 14 (16) percentage points more likely to be self-employed than to be business owners in the full sample, these gaps fall to 5-7 percentage points in the subsample of entrepreneurs. Overall, these findings are consistent with the notion that many self-employed jobs are not considered to be self-owned businesses, perhaps because they are informal and/ or independent, free-lance pursuits—and self-identified entrepreneurs are somewhat less likely than others to hold these informal jobs.

We now turn from a sample of individuals to samples of jobs and businesses, and introduce another dimension of entrepreneurial activity: incorporation status. In table 3 we see that, unsurprisingly, a large majority of self-employed jobs (75% for men, 80% for women) are unincorporated. Incorporation status is unknown for 5-6% of self-employed jobs (which is consistent with respondents not viewing them as businesses), leaving the remaining jobs (20% for men and 14% for women) to be classified as incorporated. The majority of owned businesses are also classified as unincorporated (*i.e.*, sole proprietorships), although the percentages (54% for men, 60% for women) are not nearly as large as for self-employment. As noted in III.B, business owners could also classify their business as a partnership or limited liability partnership, limited liability corporation, sub-chapter S corporation, or general corporation. Table 3 reveals that 34% of men’s businesses and 23% of women’s businesses fall into one of these categories, which we collectively refer to as incorporated.

Unsurprisingly, table 3 shows a slight shift from unincorporated to incorporated self-employment when we focus on self-identified entrepreneurs. Among women, for example, the percent of self-employed jobs that are unincorporated falls by seven points (from 80 to 73), while the percent that are incorporated increases by a similar amount (from 14 to 21). Interestingly, a smaller shift is seen for businesses: men’s and women’s businesses are 1-2 percentage points less likely to be sole proprietorships when we focus on entrepreneurs than we consider the full sample, and 3-4 percentage points more likely to be corporations.

Next, we consider the extent of job-specific “agreement” between self-employment, business ownership, and business income. In table 4, we decompose the sample of 5,176 self-employed jobs by sex and incorporation status, and assess how often each type of self-employed job links to an owned business and/or business income. As discussed in section III, a self-

employed job and business are linked if company names and start/stop dates indicate they are the same job; jobs and business income are linked if the respondent reported income from a business during a calendar year when the job was in progress.

Table 4 reveals that for men, only 35% of self-employed jobs link to a business—that is, for 65% of jobs classified as self-employment, the individual does *not* report a business that corresponds to the self-employed job (and, in many cases, does not report *any* business ownership). The linkage rate with business income is considerably higher, yet for 55% of jobs classified as self-employment, the individual never claims to receive income from a business while the job is in progress. Only 18% of self-employed jobs link to both a business and business income, leaving 38% that link to neither.¹⁰ Linkage rates are even lower for self-employed jobs held by women, with the majority of jobs (51%) linking to neither a business nor business income.

Table 4 indicates that linkage rates are higher for incorporated self-employed jobs than for unincorporated self-employed jobs, and exceedingly low when the job’s incorporation status is unknown. Among men, for example, only 27% of incorporated self-employment links to neither a business nor business income, while 75% of “unknown” self-employed jobs are unlinked. Linkage rates are higher for self-employed jobs held by entrepreneurs although, interestingly, the gain in linkage rates is more pronounced for women than for men. For example, the fraction of unincorporated (incorporated) jobs that link to a business increases from 0.27 to 0.44 (0.47 to 0.66) when we switch from the “all women” sample to the subset of entrepreneurs. The finding that incorporated self-employed jobs—especially those held by entrepreneurs—are considerably more likely than other self-employed jobs to coincide with business ownership and business income suggest that these are more likely to be “formal” entrepreneurial pursuits.

Table 5 is similar to table 4, but now we use the sample of 2,004 owned businesses that link to a job (not necessarily to a self-employment job) and ask how often each business corresponds to other indicators of entrepreneurial activity. The linkage rates for businesses differ from those for self-employed jobs in three important respects: First, the fraction of businesses that link in some fashion is *much* higher than what we saw for self-employment. Using the “all businesses for all men” column for illustration, table 5 reveals that 83% of businesses link to a self-employed job while, per table 4, only 35% of self-employed jobs link to a business. Similarly, 51% of businesses link to business income (vs. 45% of self-employed jobs), and only 10% of businesses have no link to self-employment or business income (vs. 38% of self-employed jobs). Second, in contrast to what was seen in table 4, table 5 shows very little difference in linkage rates between the full samples and the subsamples of entrepreneurs. Third, table 5 shows that

¹⁰ Categories a-c are not mutually exclusive, but we can “back out” that 17% of jobs link *only* to a business and 27% link *only* to business income, while the remaining 18% link to both.

unincorporated businesses are 8-14 percentage points *more* likely to link to self-employment than are incorporated businesses. This is an unsurprising finding, given that many owners of incorporated businesses are not classified as self-employed for tax purposes, and are likely to classify themselves as wage employees (of their own business) when answering “class of worker” questions. While the lack of “agreement” between self-employment and incorporated business ownership is understandable, it is surprising to find that about 12% of *unincorporated* businesses do not link to a self-employed job.

The preceding discussion has highlighted a considerable level of discrepancy between our alternative indicators of entrepreneurial activity, along with a tendency for linkage rates to vary with incorporation status and the individual’s entrepreneurship status. In the remainder of this subsection, we ask the following question: After segmenting self-employed jobs, nonself-employed (wage) jobs, and businesses by their linkage status and, as appropriate, by their incorporation status, how do different types of jobs and businesses differ with respect to a variety of individual and job characteristics, including respondents’ verbatim descriptions of the work being performed? Summary statistics for each job type appear in tables 6a-7a for men and tables 6b-7b for women.

Tables 6a-b reveal that individuals with *incorporated* self-employed jobs or businesses have higher mean skill levels (as measured by highest grade completed and AFQT scores), lower mean Rotter scores (*i.e.*, a more internal locus of control), and higher mean asset levels than their *unincorporated* counterparts; they also tend to be slightly older, on average, and have accumulated more work experience. While we expect to find this association between incorporation status and skill, wealth, and experience, a more surprising pattern emerges when we compare all columns of tables 6a-b: these metrics (skill, internal locus of control, assets, age, experience) tend to be highest for individuals with incorporated and *unlinked* businesses, and lowest (by far) for individuals with wage jobs followed by those with unincorporated and *unlinked* self-employed jobs.¹¹ Although differences in sample means are not always (or often) significantly different from zero across subsamples, the pattern seen in tables 6a-b is consistent with a conjecture made earlier: self-employed jobs that are *not identified as businesses* tend to be held by the same young, less-skilled individuals who hold unincorporated self-employed jobs, while businesses that are *not identified as self-employed* jobs tend to be held by the older, highly-skilled individuals who have incorporated businesses.

To gain more insight into how these types of jobs and businesses differ, in tables 7a-b we

¹¹ The only deviation from this pattern is that age and experience are also high among men and women with self-employed jobs that link to businesses. Other measures of skill and “stability” that we have at our disposal but do not summarize in tables 6a-b (*e.g.*, mother’s highest grade completed, marital status, the presence of children, job duration) substantiate these patterns, although as seen in tables 6a-b risk tolerance and entrepreneurship status do not.

summarize the three variables (*role*, *works at home*, and *work*) that we coded on the basis of verbatim responses to questions about the work performed at each job. As noted in III.B, these verbatims (which are elicited to code industry and occupation) are not publicly available for analysis, but were made available to us for jobs/businesses reported from 1994 to 2010. We have no verbatim responses for businesses that do not link to a (self-employed or wage) job, and we did not code responses for the tens of thousands of wage jobs that do not link to a business.

There is no expectation that self-employed workers or business owners will explicitly say “I own the business” or “I am the proprietor” in describing the work they perform. However, table 7a reveals that men make a response in this vein in reference to 27% of incorporated businesses and, at the other extreme, only 10-14% of unincorporated and unlinked self-employed jobs. Table 7b shows that women are less likely than men to have their role coded as “own,” but follow the same qualitative pattern as men. The roles of both men and women are coded “run” (*e.g.*, “I run the business,”) “manage” (*e.g.*, “I’m the boss,” or “I’m the manager”), or “self-employed” (for explicit use of that term) far less often than “own,” but both “run” and “manage” are assigned to incorporated businesses more often than to other types of jobs. When we combine “own,” “run,” “manage,” and “self-employed,” incorporated businesses are far more likely than other jobs to be assigned one of these codes, while unincorporated and unlinked self-employment are the least likely to be described in these terms.

For all job types but incorporated businesses, responses that refer to performing “all the work” are the most common, especially among women. In particular, women’s roles are coded as “does all the work” for 57% of unincorporated self-employed jobs, 51% of unlinked self-employed jobs, and 51% of unincorporated businesses, suggesting that these tend to be one-person operations. Moreover, the job descriptions indicate that women work at home on 38% of unincorporated self-employed jobs, 36% of unlinked self-employed jobs, and 23% of unincorporated businesses, versus only 6% of incorporated self-employed jobs and businesses; a similar pattern is seen for men, although “works at home” is coded for, at most, 15% of jobs of any given type. Overall, the verbatims indicate quite clearly that women who hold unincorporated and/or unlinked self-employed jobs tend to “do it all,” work at home, work as care-givers (most often, baby-sitters), and perform various types of “solo” work (*e.g.*, home-based medical transcription, editing, and art). For men, construction-related jobs (general contracting, carpentry, auto-repair, *etc.*) are the most common occupations for all job categories, which presumably is why the unincorporated and unlinked self-employed are less likely than their female counterparts to be home-based and/or doing “all the work.”

B. Estimated Transitions into Entrepreneurial Activities

For the final step of our analysis, we estimate the 3-, 4- and 5-state multinomial logit models described in III.C for the probability of holding a wage job, being nonemployed, or holding

variously-defined entrepreneurial jobs in any 12-month interval. In table 8, we summarize estimated marginal effects from these MNL models, focusing only on the entrepreneurial outcomes and a select set of interventions of particular interest: an increment in highest grade completed from 12 years to 16 years, ten year increments in both age and experience above the sample means, a one-point increment in individual risk tolerance, and a \$100,000 increase in assets.¹² Unconditional probabilities vary across entrepreneurial outcomes, so we express each estimated marginal effect relative to those unconditional probabilities.

To the extent that self-employment or business ownership is risky, complex, capital-intensive, or otherwise “entrepreneurial,” factors like schooling attainment, work experience, risk tolerance, and assets should increase the probability of holding such jobs relative to wage employment. Table 8 reveals that, for both men and women, increments in schooling attainment, experience, and assets (but not risk tolerance) are associated with an increased relative probability of holding *incorporated* self-employed jobs or businesses, and a much smaller (or even negative) effect on the relative probability of holding *unincorporated* self-employed jobs or businesses. Among men, for example, an increment in schooling attainment from 12 to 16 years is associated with a 33% increase in the estimated likelihood of holding an incorporated self-employed job relative to the unconditional baseline probability, while the corresponding estimate for unincorporated self-employment is an imprecisely-estimated -12%; analogous estimates for incorporated versus unincorporated businesses are 41% and 4%. Similarly, a \$100,000 increment in assets is associated with a 10-12% increase in the estimated (relative) likelihood of incorporated self-employment or business ownership, compared to 3% for the unincorporated counterparts.

Looking across all columns of table 8, the magnitudes of the estimated (relative) marginal effects for schooling, experience, and assets are uniformly largest for unlinked businesses, businesses linked to wages, and incorporated businesses, and smallest for unlinked and incorporated self-employed jobs. For example, the schooling intervention is associated with an estimated (relative) marginal effect of 124% for businesses that are unlinked to jobs, 41-43% for businesses linked to wage jobs and incorporated businesses, only 7% for businesses that link to self-employed jobs, and imprecisely estimated negative amounts for unincorporated and unlinked self-employment. Just as tables 6a-b reveal that mean levels of schooling, experience and assets are highest for unlinked and incorporated businesses and lowest for unlinked and unincorporated self-employment, table 8 uses a multivariate regression framework to show similar correlations. If an association with schooling, skill experience and asset levels is an indication of entrepreneurship, then tables 6a-b and 8 clearly indicate that incorporated

¹² Each marginal effect is computed with all other variables (except higher order terms in the variable of interest) set at the sample mean.

businesses and businesses *not* identified as self-employment conform much more closely to the notion of entrepreneurship than do unincorporated self-employment and self-employed jobs *not* identified as businesses.

V. Concluding Comments

Previous studies have considered the extent to which self-employment and business ownership (terms that are often used interchangeably) conform to accepted definitions of entrepreneurship. We focus on a different question: are self-employment and business ownership the same and, if not, how do they differ? We are able to address these questions because the NLSY79 independently classifies jobs as self-employment and self-owned businesses, while also identifying the incorporation status of those jobs, receipt of business income while those jobs are in progress, and job-holders' self-assessment of whether they are entrepreneurs; in addition, we have access to verbatim descriptions of the work and tasks performed on each job. By exploiting this unique combination of information, we have determined the extent to which alternative indicators of entrepreneurial activity are in agreement, and gained new insights into the nature of these jobs. Our findings can be summarized as follows:

1. Self-employment is far more common than business ownership. Over a roughly 30-year window, men and women are about 15 percentage points more likely to hold a self-employed job than to own a business, and reported self-employed jobs outnumber owned businesses by 2.3 to one.
2. Individuals who self-identify as entrepreneurs are more likely than others to experience entrepreneurial outcomes. During our observation window, women entrepreneurs are twice as likely as the full sample of women to be self-employed and to report business income, and 3.4 times as likely to own a business; differences between male entrepreneurs and all men are smaller than for women, but substantial.
3. A large majority of self-employed jobs (65% for men and 71% for women) are *not* identified by the respondent as a self-owned business. However, among self-employed jobs that are incorporated and/or held by self-identified entrepreneurs, the level of “disagreement” between self-employment and business ownership is considerably lower—*e.g.*, around 35% for incorporated, self-employed jobs held by entrepreneurs.
4. In contrast, most “owned” businesses are also identified as self-employment. The linkage rate is about 85% for men and women, regardless of their status as entrepreneurs. In contrast to what is seen for self-employment, incorporated businesses are *less* likely than unincorporated businesses to link to self-employment (*e.g.*, 74% vs. 88% for men), presumably because incorporated business owners often (correctly) classify themselves as wage employees of their business.
5. Individuals with incorporated businesses have higher mean levels of schooling, skill,

experience, and assets than their unincorporated counterparts. Moreover, owners of incorporated business *and* businesses not independently identified as self-employment outdistance all others (including the incorporated self-employed) in each of these dimensions, and incorporated business owners are considerably more likely than others to state explicitly that they own their business in the process of describing their jobs. For example, 27% of men with incorporated businesses refer to owning the business, and 47% use a broader set of terms that suggest they own, run, or manage the business. Comparable numbers for men with incorporated self-employed jobs are 21% and 35%.

6. At the other extreme, holders of unincorporated self-employed jobs and self-employed jobs that do not link to business ownership tend to have lower levels of schooling, skill, assets, and work experience than other self-employed workers and business owners, and are more likely than others to describe their jobs as one-person and/or home-based. Among unincorporated (unlinked), self-employed women, for example, 57% (51%) claim to do “all the work,” 38% (36%) work at home, 33% (34%) are care-givers, and another 18% (13%) perform such “solo” work as editing, medical transcription, and art. There is little doubt that self-employment that is unincorporated and/or unassociated with business ownership tends to be unskilled, home-based, informal work.
7. If high levels of skill, experience, and assets are associated with a higher probability of holding risky, capital-intensive, entrepreneurial jobs rather than “regular” wage jobs, we provide evidence that owners of incorporated businesses and businesses unlinked to self-employment are more likely than others to hold “entrepreneurial jobs.” Among men, for example, a \$100,000 increment in assets is associated with a 12-16% increase in the predicted probability (relative to the unconditional probability) of working at an unlinked or incorporated business. The same intervention is associated with only a 3-4% increase in the predicted probability of working in unincorporated or unlinked self-employment.

While any sample of jobs—including those classified as self-employment, self-owned businesses, incorporated businesses, *etc.*—consists of a range of pursuits that defy unambiguous characterization, we have compiled enough evidence to paint a reasonably clear picture. Self-employed jobs outnumber owned businesses by a wide margin, are rarely considered to be businesses, and often entail home-based, one-person pursuits. Other analysts (Parker 2009; Levine and Rubenstein 2013) have argued that the self-employed are not necessarily entrepreneurs. We argue that it is a mistake to view the self-employed as business owners.

References

- Ahn, Taehyun. "Attitudes Toward Risk and Self-Employment of Young Workers." *Labour Economics* 17 (April 2010): 434-42.
- Asoni, Andrea. "Intelligence, Self-Confidence and Entrepreneurship." IFN Working Paper 887, October 2011.
- Barsky, Robert. B., Miles S. Kimball, F. Thomas Juster, and Matthew D. Shapiro. "Preference Parameters and Behavioral Heterogeneity: An Experimental Approach in the Health and Retirement Study." *Quarterly Journal of Economics*, 112 (May 1997): 537-79.
- Berglann, Helge, Espen R. Moen, Knut Roed, and Jens F. Skogstrom. "Entrepreneurship: Origins and returns." *Labour Economics* 18 (April 2011): 180-93.
- Carland, James W., Frank Hoy, William R. Boulton, and Jo Ann C. Carland. "Differentiating Entrepreneurs from Small Business Owners: A Conceptualization." *Academy of Management Review* 9 (April 1984): 354-59.
- Cramer, Jan Salomon, Joop Hartog, Nicole Jonker, and Mirjam van Praag. "Low Risk Aversion Encourages the Choice for Entrepreneurship: An Empirical Test of a Truism." *Journal of Economic Behavior and Organization* 48 (May 2002): 29-36.
- Blanchflower, David G. and Andrew J. Oswald. "What Makes an Entrepreneur?" *Journal of Labor Economics* 16 (January 1998): 26-60.
- Boden, Richard J. and Alfred R. Nucci. "Counting the Self-Employed Using Household and Business Sample Data." *Small Business Economics* 9 (October 1997): 427-36.
- Disney, Richard. "Housing Wealth, Liquidity Constraints and Self-Employment." *Labour Economics* 16 (January 2009): 79-88.
- Dunn, Thomas and Douglas Holtz-Eakin. "Financial Capital, Human Capital, and the Transition to Self-Employment: Evidence from Intergenerational Links." *Journal of Labor Economics* 18 (April 2000): 282-305.
- Ekelund, Jesper, Edvard Johansson, Marjo-Riitta Järvelin, and Dirk Lichtermann. "Self-Employment and Risk Aversion—Evidence from Psychological Test Data." *Labour Economics* 12 (October 2005): 649-659.
- Evans, David S. and Boyan Jovanovic. "An Estimated Model of Entrepreneurial Choice under Liquidity Constraints." *The Journal of Political Economy* 97 (August 1989): 808-27.
- Evans, David S. and Linda S. Leighton. "Some Empirical Aspects of Entrepreneurship." *American Economic Review* 79 (June 1989): 519-35.
- Fairlie, Robert W. "Drug Dealing and Legitimate Self-Employment." *Journal of Labor Economics* 20 (July 2002): 538-567.
- Fairlie, Robert W. and Harry A. Krashinsky. "Liquidity Constraints, Household Wealth, and Entrepreneurship Revisited." *Review of Income and Wealth* 58 (June 2012): 279-306.
- Hamilton, Barton H. "Does Entrepreneurship Pay? An Empirical Analysis of the Returns to Self-Employment." *Journal of Political Economy* 108 (June 2000): 604-31.
- Henrekson, Magnus and Tino Sanandaji. "Small Business Activity Does not Measure Entrepreneurship." Research Institute of Industrial Economics (IFN) Working Paper 959, January 2014

- Hurst, Erik and Benjamin Wild Pugsley. "What do Small Businesses Do?" *Brookings Papers on Economic Activity* (April 2011): 73-118.
- Johansson, Edvard, Marjo-Riitta Järvelin, and Dirk Lichtermann. "Self-Employment and Risk Aversion: Evidence from Psychological Test Data." *Labour Economics* 12 (October 2005): 649-659.
- Kihlstrom, Richard E. and Jean-Jacques Laffont. "A General Equilibrium Entrepreneurial Theory of Firm Formation Based on Risk Aversion." *Journal of Political Economy* 87 (August 1979): 719-48.
- Knight, Frank H. *Risk, Uncertainty and Profit*. New York: Houghton-Mifflin, 1921.
- Lazear, Edward P. "Entrepreneurship." *Journal of Labor Economics* 23 (October 2005): 649-80.
- Levine, Ross and Yona Rubinstein. "Smart and Illicit: Who Becomes an Entrepreneur and Does it Pay? NBER Working Paper 19276, August 2013.
- Light, Audrey. "Estimating Returns to Schooling: When Does the Career Begin?" *Economics of Education Review* 17 (February 1998): 31-45.
- Light, Audrey and Taehyun Ahn. "Divorce as Risky Behavior." *Demography* 46 (November 2010): 895-921.
- Light, Audrey and Andrew McGee. "Does Employer Learning Vary by Schooling Attainment? The Answer Depends on How Career Start Dates are Measured." *Labour Economics* 32 (January 2015): 57-66.
- Lucas, Robert E. "On the Size Distribution of Business Firms." *Bell Journal of Economics* 9 (August 1978): 508-23.
- Parker, Simon C. *The Economics of Entrepreneurship*. Cambridge, UK: Cambridge University Press, 2009.
- Schumpeter, Joseph A. *The Theory of Economic Development*. Cambridge, MA: Harvard University Press, 1934.

Table 1: Number of Respondents, Jobs, and Businesses, by Sex

Outcome	Men	Women	All
Respondents	3,809	3,968	7,777
Wage Jobs	32,237	30,599	62,836
(Fraction of all jobs)	(.92)	(.93)	(.92)
Self-employed jobs ^a	2,930	2,246	5,176
(Fraction of all jobs)	(.08)	(.07)	(0.8)
All jobs	35,167	32,845	68,012
Linked businesses ^b	1,247	757	2,004
(Fraction of all businesses)	(.88)	(.87)	(.83)
Unlinked businesses	173	110	283
(Fraction of all businesses)	(.12)	(.13)	(0.19)
All businesses	1,420	867	2,287

^aClass of worker is “self-employed” or “working for a family business”; the latter accounts for 3% (5%) of jobs in this category for men (women).

^bRespondent-owned businesses reported in 2010 or 2012 that link (using name and start/stop dates) to previously- or currently-held jobs.

Table 2: Fraction of Individuals with Each Entrepreneurial Outcome,
by Entrepreneurship Status and Sex

Entrepreneurial Outcome^a	All		Entrepreneurs	
	Men	Women	Men	Women
Holds at least one self-employed job	.43	.33	.71	.64
Owens at least one business	.29	.17	.66	.57
Owens at least on linked business	.27	.15	.62	.53
Reports at least one year of business income	.38	.23	.62	.48
Any of the above	.53	.41	.81	.70
Considers him/herself an entrepreneur	.25	.13	1.00	1.00
Number of individuals	3,809	3,968	952	529

^aFraction encountering the given outcome at least once between the career start date and 2010 or 2012 interview date.

Table 3: Fraction of Self-Employed Jobs and Businesses with Each Legal Structure, by Entrepreneurship Status and Sex

Legal Structure	All		Entrepreneurs	
	Men	Women	Men	Women
Self-Employed Jobs				
Unincorporated	.75	.80	.71	.73
Incorporated	.20	.14	.25	.21
Unknown	.05	.06	.04	.06
Number of self-employed jobs	2,930	2,246	1,390	688
Businesses				
Sole proprietorship (unincorp.) ^a	.54	.60	.53	.58
Corporation	.26	.16	.29	.20
Partnership	.08	.07	.07	.07
Sum of above 2 rows (incorp.) ^a	.34	.23	.36	.27
Other	.06	.10	.05	.07
Type of business unknown	.06	.07	.06	.08
Number of businesses	1,420	867	852	417

^aIn the ensuing analysis, we refer to sole proprietorships as unincorporated businesses, and combine corporations and partnerships into an aggregated “incorporated” category of businesses.

Table 4: Fraction of Self-Employed Jobs Linked to Business Ownership and/or Business Income by Entrepreneurship Status, Sex, and Legal Structure

Linkage	All Men and Women							
	Men				Women			
	Uninc.	Inc.	Unk.	All	Uninc.	Inc.	Unk.	All
a) Owned business	.32	.53	.13	.35	.27	.47	.13	.29
b) Business income	.47	.45	.16	.45	.36	.40	.10	.35
c) Both	.18	.25	.04	.18	.14	.24	.04	.15
d) Neither	.39	.27	.75	.38	.51	.36	.81	.51
Number of jobs	2,198	574	158	2,930	1,797	314	135	2,246
Linkage	Entrepreneurs							
	Men				Women			
	Uninc.	Inc.	Unk.	All	Uninc.	Inc.	Unk.	All
a) Owned business	.42	.61	.22	.46	.44	.66	.19	.47
b) Business income	.51	.44	.31	.49	.45	.45	.14	.43
c) Both	.23	.30	.10	.24	.24	.33	.10	.25
d) Neither	.31	.24	.57	.30	.35	.21	.76	.35
Number of jobs	991	350	49	1,390	503	143	42	688

Note: The sample consists of all self-employed jobs identified in table 1. Among these self-employed jobs, row a identifies links (by name and start date) to businesses; row b identifies links to business income (meaning the job is in progress during at least one calendar year in which business income is reported); row c identifies links to both a business and business income; row d identifies links to neither a business nor business income. Rows a-c are not mutually exclusive.

Table 5: Fraction of Businesses Linked to Self-Employed Jobs and/or Business Income, by Entrepreneurship Status, Sex, and Legal Structure

Linkage	All Men and Women							
	Men				Women			
	Uninc.	Inc.	Unk.	All	Uninc.	Inc.	Unk.	All
a) Self-employed job	.88	.74	.81	.83	.88	.78	.87	.86
b) Business income	.57	.45	.35	.51	.52	.48	.32	.47
c) Both	.51	.35	.27	.53	.49	.38	.30	.43
d) Neither	.06	.15	.12	.10	.09	.12	.11	.10
Number of businesses	696	395	156	1,247	458	162	137	757
Linkage	Entrepreneurs							
	Men				Women			
	Uninc.	Inc.	Unk.	All	Uninc.	Inc.	Unk.	All
a) Self-employed job	.89	.79	.79	.85	.89	.81	.88	.87
b) Business income	.60	.47	.30	.52	.57	.47	.33	.51
c) Both	.54	.37	.23	.45	.53	.36	.32	.46
d) Neither	.05	.12	.14	.08	.07	.08	.11	.08
Number of businesses	410	251	91	752	219	99	57	375

Note: The sample is restricted to businesses reported in 2010 or 2012 that link (using names and dates) to a previously- or currently-held job. Among these linked businesses, row a identifies links to self-employed jobs; row b identifies links to business income (meaning the business is in progress during at least one calendar year in which business income is reported); row c identifies links to both a self-employed job and business income; row d identifies businesses that link to a non-self-employed (wage) job only. Rows a-c are not mutually exclusive.

Table 6a: Individual Characteristics by Type of Job or Business (Men)

Variable	Self-employed jobs				Owned Businesses				
	Incorp.	Uninc.	Not linked	SE job + Business	Wage jobs				
					Incorp.	Uninc	Not linked	Business + Wage	Wage
1 if black	.27	.28	.30	.26	.20	.27	.28	.16	.34
1 if Hispanic	.16	.18	.18	.16	.13	.18	.14	.19	.20
Highest grade completed ^a	12.87 (2.62)	12.01 (2.38)	11.92 (2.42)	12.60 (2.47)	13.41 (2.47)	12.32 (2.39)	13.26 (2.58)	12.80 (2.49)	11.87 (2.23)
Percentile AFQT score ^b	46.83 (29.07)	41.21 (29.38)	39.74 (29.00)	46.39 (29.61)	56.61 (28.44)	43.53 (28.97)	53.80 (28.56)	51.66 (29.90)	37.02 (28.32)
Rotter locus of control ^b	9.04 (2.30)	9.18 (2.35)	9.28 (2.35)	8.97 (2.30)	8.62 (2.24)	9.05 (2.29)	8.78 (2.41)	8.86 (2.22)	9.39 (2.35)
Risk tolerance ^a	1.40 (1.02)	1.43 (1.02)	1.46 (1.04)	1.38 (1.02)	1.28 (.94)	1.38 (.99)	1.24 (.73)	1.31 (1.06)	1.40 (1.01)
Assets (\$10,000s) ^c	20.84 (63.21)	4.93 (49.74)	5.73 (42.26)	12.88 (66.76)	27.39 (64.60)	6.02 (62.13)	25.80 (57.56)	22.31 (59.84)	1.61 (36.17)
Age	35.17 (9.14)	31.95 (8.81)	30.67 (8.17)	37.20 (9.28)	37.01 (8.91)	35.93 (9.35)	37.32 (8.89)	34.17 (9.52)	29.22 (8.70)
Cum. experience (years) ^d	12.55 (8.27)	9.50 (7.27)	8.28 (6.60)	14.03 (8.15)	14.53 (8.07)	12.77 (7.97)	13.94 (7.83)	12.63 (8.36)	7.19 (6.98)
1 if ever self-employed	1.00	1.00	1.00	1.00	.82	.92	.56	.60	.47
1 if ever owns business	.78	.65	.48	1.00	1.00	1.00	1.00	1.00	.28
1 if family owns bus.	.37	.29	.27	.36	.39	.35	.38	.39	.26
1 if entrepreneur	.61	.45	.40	.62	.63	.59	.58	.53	.25
No. jobs/businesses	574	2,198	1,898	1,032	484	773	173	215	32,202

^aMeasured at the career start date. A higher risk value means the person is more risk tolerant.

^bAdjusted for age at which the test/scale was administered. A higher Rotter score means the person is more externally focused.

^cPredicted assets at the start of the job or business, in CPI-U deflated 2000 dollars; see text for details.

^dCumulative number of weeks worked at least 20 hours since the career start date, divided by 52.

Table 6b: Individual Characteristics by Type of Job or Business (Women)

Variable	Self-employed jobs								
	Owned Businesses				Wage jobs				
	Incorp.	Uninc.	Not linked	SE + Business	Incorp.	Uninc.	Not Linked	Business +Wage	Wage
1 if black	.18	.22	.22	.21	.13	.20	.21	.16	.31
1 if Hispanic	.21	.17	.18	.18	.14	.17	.14	.18	.18
Highest grade completed ^a	13.11 (2.54)	12.42 (2.32)	12.33 (2.24)	12.98 (2.59)	13.63 (2.41)	12.76 (2.52)	13.15 (2.43)	12.70 (2.11)	12.29 (2.16)
Percentile AFQT score ^b	46.03 (27.77)	43.18 (28.19)	41.00 (27.50)	49.28 (28.40)	54.45 (26.15)	48.74 (27.70)	51.93 (27.33)	47.35 (24.68)	39.42 (27.19)
Rotter locus of control ^b	9.16 (2.37)	9.34 (2.44)	9.44 (2.44)	9.07 (2.36)	8.82 (2.33)	9.05 (2.30)	8.80 (2.32)	8.89 (2.42)	9.49 (2.33)
Risk tolerance ^a	1.04 (.63)	0.99 (.59)	.99 (.59)	1.03 (.62)	1.00 (.65)	1.01 (.60)	.91 (.49)	.98 (.64)	.99 (.61)
Assets (\$10,000s) ^c	19.41 (51.06)	6.75 (33.07)	6.08 (35.01)	15.68 (40.49)	25.41 (59.28)	12.56 (28.81)	20.05 (56.17)	15.95 (29.81)	2.47 (38.51)
Age	35.79 (8.21)	32.78 (8.41)	31.61 (7.87)	38.58 (8.49)	36.93 (8.50)	37.05 (8.64)	36.73 (9.06)	34.94 (9.04)	29.73 (8.90)
Cum. experience (years) ^d	11.18 (7.67)	7.65 (6.65)	6.73 (6.12)	12.42 (7.44)	12.30 (7.39)	11.37 (7.20)	11.66 (7.78)	10.97 (7.71)	6.24 (6.47)
1 if ever self-employed	1.00	1.00	1.00	1.00	.82	.93	.49	.61	.37
1 if ever owns business	.66	.52	.34	1.00	1.00	1.00	1.00	1.00	.18
1 if family owns bus.	.49	.38	.40	.40	.49	.40	.45	.47	.29
1 if entrepreneur	.45	.28	.23	.50	.57	.47	.38	.47	.15
No. jobs/businesses	314	1,797	1,594	652	196	518	110	105	30,494

^aMeasured at the career start date. A higher risk value means the person is more risk tolerant.

^bAdjusted for age at which the test/scale was administered. A higher Rotter score means the person is more externally focused.

^cPredicted assets at the start of the job or business, in CPI-U deflated 2000 dollars; see text for details.

^dCumulative number of weeks worked at least 20 hours since the career start date, divided by 52.

Table 7a: Job Characteristics by Type of Job or Business (Men)

Variable	Self-employed jobs				Owned Businesses				
	Incorp.	Uninc.	Not linked	SE + Business	Wage jobs				
					Incorp.	Uninc	Not linked	Business + Wage	Wage
1 if links to business inc.	.45	.47	.41	.52	.43	.55	.31	.42	.07
1 if Role = ^a									
Own	.21	.14	.10	.22	.27	.19		.14	
Run	.01	.01	.01	.02	.06	.01		.06	
Manage	.12	.03	.05	.06	.13	.04		.13	
Self-employed	.01	.03	.04	.01	.01	.02		.01	
(Sum of above)	(.35)	(.21)	(.20)	(.31)	(.47)	(.26)		(.34)	
Independent	.07	.08	.08	.07	.05	.08		.08	
Does all the work	.24	.31	.26	.32	.25	.32		.15	
Does some of the work	.09	.06	.06	.08	.10	.07		.08	
Employee	.05	.03	.07	.01	.02	.02		.10	
Unknown	.20	.31	.33	.21	.11	.25		.25	
1 if works at home ^a	.04	.14	.15	.07	.03	.08		.02	
1 if Work = ^{ab}									
Cleaner	.02	.04	.04	.04	.04	.05		.09	
Solo work	.07	.11	.09	.09	.05	.10		.03	
Construction	.23	.35	.31	.33	.28	.38		.32	
Yard work	.02	.10	.10	.06	.03	.07		.08	
Transportation	.11	.07	.09	.08	.05	.10		.05	
REI	.11	.04	.05	.06	.08	.05		.03	
Consultant	.09	.05	.06	.05	.07	.04		.04	
Retail	.08	.05	.06	.06	.11	.04		.07	
No. jobs/businesses	574	2,198	1,898	1,032	484	773	173	215	32,202
(No. from 1994-2010)	(301)	(945)	(703)	(634)	(218)	(425)		(83)	

^aCoded on the basis of verbatim responses to questions about type of work and business. Verbatims are only available for jobs observed from 1994 to 2010, and were only coded for self-employed jobs and wage jobs that link to businesses; see text for details.

^bWe report only those categories held by at least 8% of jobs in at least one subsample; see text for additional categories.

Table 7b: Job Characteristics by Type of Job or Business (Women)

Variable	Self-employed jobs				Owned Businesses				Wage jobs
	Incorp.	Uninc.	Not linked	SE + Business	Incorp.	Uninc	Not linked	Business + Wage	Wage
	1 if links to business inc.	.40	.36	.28	.50	.42	.50	.25	.32
1 if Role = ^a									
Own	.16	.10	.05	.19	.23	.17		.13	
Run	.01	.01	.01	.02	.02	.01		.04	
Manage	.08	.02	.03	.03	.11	.02		.07	
Self-employed	.01	.02	.02	.01	.01	.01		.00	
(Sum of above)	(.26)	(.15)	(.11)	(.25)	(.37)	(.21)		(.24)	
Independent	.09	.09	.10	.07	.03	.07		.07	
Does all the work	.27	.57	.51	.48	.22	.51		.23	
Does some of the work	.10	.04	.05	.06	.11	.08		.13	
Employee	.19	.05	.12	.05	.20	.04		.27	
Unknown	.09	.10	.11	.09	.07	.09		.13	
1 if works at home ^a	.06	.38	.36	.22	.06	.23		.06	
1 if Work = ^{ab}									
Care-giver	.10	.33	.34	.18	.05	.19		.09	
Cleaner	.03	.11	.10	.09	.04	.11		.02	
Solo work	.11	.18	.13	.21	.09	.22		.09	
Construction	.09	.02	.03	.05	.13	.05		.11	
Practitioner	.07	.03	.04	.04	.06	.03		.04	
REI	.08	.04	.05	.06	.05	.06		.09	
Consultant	.08	.06	.04	.09	.09	.09		.05	
Retail	.13	.05	.05	.08	.18	.09		.20	
No. jobs/businesses	314	1,797	1,594	652	196	518	110	105	30,494
(No. from 1994-2010)	(215)	(826)	(686)	(437)	(109)	(294)		(56)	

^aCoded on the basis of verbatim responses to questions about type of work and business. Verbatims are only available for jobs observed from 1994 to 2010, and were only coded for self-employed jobs and wage jobs that link to businesses; see text for details.

^bWe report only those categories held by at least 8% of jobs in at least one subsample; see text for additional categories.

Table 8: Estimated Marginal Effects of Select Interventions on the Probability of Being in Alternative Entrepreneurial States
(expressed relative to the unconditional transition probability)

	Self-employed Jobs					Owned Businesses				
	Spec. 1	Specification 2		Specification 3		Spec. 4	Specification 5		Specification 6	
Intervention	All	Incorp.	Uninc.	SE+ Bus.	Not linked	All	Incorp.	Uninc.	Bus.+ Wage	Not linked
Men										
Highest grade from 12 to 16	.01 (.08)	.33 (1.47)	-.12 (1.25)	.07 (.54)	-.09 (.85)	.20 (1.72)	.41 (1.89)	.04 (.30)	.43 (1.37)	1.24 (2.13)
Age + 10 years	.02 (2.52)	-.03 (1.61)	.03 (4.06)	.02 (2.02)	.02 (2.97)	.01 (1.08)	-.00 (.11)	.01 (1.38)	-.06 (2.31)	.01 (.03)
Experience + 10 years	.02 (2.60)	.06 (3.03)	.01 (.95)	.04 (3.76)	-.02 (1.57)	.04 (5.02)	.06 (3.32)	.04 (3.54)	.11 (3.83)	.03 (.97)
Risk tolerance + 1	.15 (1.97)	-.08 (.40)	.22 (2.61)	.11 (.79)	.22 (2.66)	-.01 (.09)	.03 (.13)	-.02 (.15)	-.39 (1.36)	-.13 (.28)
Assets + \$100,000	.04 (6.64)	.10 (2.26)	.03 (3.51)	.04 (4.55)	.04 (4.39)	.07 (2.03)	.12 (2.88)	.03 (3.13)	.15 (4.48)	.16 (3.24)
Transition probability	.106	.028	.078	.062	.044	.080	.030	.050	.012	.006
Women										
Highest grade from 12 to 16	.12 (1.12)	.31 (1.20)	.06 (.54)	.32 (1.82)	-.13 (1.17)	.23 (1.55)	.56 (2.02)	.08 (.45)	.41 (1.38)	.76 (1.53)
Age + 10 years	.04 (7.35)	.05 (.33)	.05 (8.21)	.05 (5.27)	.04 (6.70)	.04 (4.70)	.04 (3.08)	.03 (3.60)	-.03 (.98)	.05 (2.21)
Experience + 10 years	-.00 (.16)	.04 (2.66)	-.01 (1.81)	.02 (1.97)	-.03 (3.41)	.02 (2.64)	.04 (2.61)	.02 (1.45)	.05 (1.79)	.01 (.54)
Risk tolerance + 1	.29 (2.07)	.60 (1.87)	.20 (1.27)	.27 (1.14)	.27 (1.63)	.22 (1.06)	-.07 (.17)	.34 (1.32)	.03 (.05)	.08 (.15)
Assets + \$100,000	.05 (2.21)	.18 (4.15)	.02 (1.24)	.11 (4.01)	.01 (1.07)	.14 (5.80)	.15 (3.55)	.13 (4.66)	.26 (5.23)	.08 (1.63)
Transition probability	.066	.013	.053	.031	.035	.041	.013	.028	.006	.004

Note: Each specification is a multinomial logit model of the probability of choosing the given alternative(s) relative to a wage job. Each specification also includes nonemployment as an alternative. Specification 6 includes businesses that link to self-employed jobs as an alternative; estimates for that alternative are identical to estimates shown in the first column for specification 3, where the alternative is self-employed jobs

that link to businesses. Covariates for each specification include age, age², experience, tenure, risk, risk², assets, and assets², and dummy variables for highest grade completed (<12, 13-15, ≥16), black, Hispanic, foreign born, family business ownership, married, divorced, cohabiting, children ≤ age 6, children ≤ age 18, health status, geographic region, and urban residence. Estimated z-statistics for the marginal effects are in parentheses.