



Federal Reserve Bank of Chicago

## **A Conversation with 590 Nascent Entrepreneurs**

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WP 2007-20

# A Conversation with 590 Nascent Entrepreneurs\*

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November, 2007

## Abstract

This paper summarizes interviews from 1998 with 590 individuals trying to create a business centered around five questions: “Who are you?”, “What are you trying to accomplish?”, “What have you and others put into the business?”, “What have you accomplished?”, “What remains to be done?” There is a great deal of heterogeneity across these Nascent entrepreneurs, but they tend to have more education than the general population. Growing up in a family in which one or both parents had a business does not seem to be an important determinant of entry into entrepreneurship for males, while it seems to be of some importance for females. Most of the nascent businesses are in retail and consumer services, and about 50 percent of nascent entrepreneurs expect to become employers within five years of the business’s birth. Most nascent entrepreneurs have already made personally-significant investments of time and money in their firms; and nearly all of them are saving for their firms out of non-business income. For about half of the sample, these investments have yielded a fully-specified product; and the remainder are still in the product development stage. Family and friends are an importance source of seed money for many Nascent Entrepreneurs. Formal credit markets have been requested for funds only by a minority of Nascent Entrepreneurs, and almost half of these applicants have been denied loans. About 40% of the Nascent Entrepreneurs believe that their businesses require significantly greater equity before they can attract external funds.

*JEL* Classification: L26, M13

Keywords: Panel Study of Entrepreneurial Dynamics, Entry, Business Credit

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\*The views expressed in this paper are those of the authors and do not reflect those of the Federal Reserve Bank of Chicago, the Federal Reserve System, or its Board of Governors. Katherine Meckel provided superlative research assistance. A replication file is available at <http://www.nber.org/~jrc/psed>

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# 1 Introduction

We are interested in individuals or groups of individuals deciding to start a new firm. We think of this process as the choice of a technology subject to constraints. The different technologies that one can choose from differ in terms of capital and labor intensity, the labor that the founders have to put in to run the technology most efficiently, the founders' abilities, and the risk and return trade-off. A person or group of people starting off with some human capital and financial resources and facing borrowing constraints will choose a different technology depending on their endowments, abilities, willingness to work on the business, and how much they can borrow.

We use a new data set, The Panel Study of Entrepreneurial Dynamics (PSED) to better understand the new business start-up process. We organize our analysis as a conversation with these nascent entrepreneurs, and our questions are composed of five building blocks: "Who are you?", "What are you trying to accomplish?", "What have you and others put into the business?", "What have you accomplished?", "What remains to be done?" Understanding these factors is crucial to inform how to best model entrepreneurial behavior and to discuss policy changes and interventions.

We summarize our main findings for each of our questions.

1. **Who are you?** Mid-career and middle-aged men tend to shun entrepreneurship, while the opposite is true for middle-aged women. Nascent Entrepreneurs have somewhat better educational qualifications than their non-entrepreneurial counterparts, so "entrepreneurship" does not merely substitute for "labor-market loser". Family business background seems to be unimportant for whether a man becomes a nascent entrepreneur but quite important for the same choice of women.
2. **What are you trying to accomplish?** Most Nascent Entrepreneurs plan to open a retail store or a restaurant or provide a health or education-related service, and a sizeable minority of women plan to begin manufacturing something. The vast majority of nascent businesses are independent start-ups and are organized either as sole proprietors or general partnership. Most of them also plan on their business making a substantial contribution to household income. However, the respondents' anticipated business sizes differ greatly. Nearly half of them plan to employ nobody but themselves. The majority of the remainder plan to become significant employers within five years. Women tend to have plans for smaller businesses than men do.
3. **What have you and others put into the business?** We study time inputs by the Nascent Entrepreneur, capital investment by all of the owners involved in the start-up, and funds provided by others.

**Time.** The average Nascent Entrepreneur has been thinking about starting this new business for three to four years, with males putting in more time than females. The average Nascent Entrepreneur has already put in more than six months of full time work to get the business started. An analysis of how Nascent Entrepreneurs are currently splitting their time reveals a large degree attachment to the labor market or housework. A comparison of the male and female labor supply patterns reveals a significant gender gap: a larger fraction of men put in more market work, but little effort in the house, while the opposite is true for women.

**Funds** Most NEs either have saved or are currently saving to start their business, and the vast majority have invested their own money in their own business. Looking at the size of the owners' capital investments reinforces the view that women aspire at running businesses that are smaller and require less capital: female NEs have put in half as much capital as male NEs throughout the whole distribution of funds invested. It also shows that even though the median investment made so far by male NEs is just \$5,000, there is a long tail in the distribution. An analysis of the other sources of funds shows that informal credit markets (such as the provision of funds by family and friends) are the first source of funds (after one's own savings) that one asks for, with 42% of the sample having done so. Even for this kind of loans, however, asking is no guarantee of receiving, with an acceptance rate that varies between 84% for one's spouse, 66% for one's family and friends, and 33% for one's employer. Conditional on receiving one such loan, the amounts are modest, but not negligible (\$14,000 is the average total amount received by male NEs and \$3,000 is the corresponding figure for female NEs). Only 25% of our male NEs and 16% of our female NEs apply for formal business loans, and only 4% to 14% of the applicants are granted such a loan. Conditional on receipt, these loans are at least two times as large as those provided by the informal credit network.

4. **What have you accomplished?** By survey design our Nascent entrepreneurs have not had revenues to exceed costs for more than three months., but our sample still shows a good deal of heterogeneity in their stage of product development. About 45% of our sample has a product or service that is ready for delivery, while 20% is at the prototype stage. Only 12% of our NEs are employers already, and of this minority, only 30% have two employees or more. About 40% of the sample have already received some revenue from operating their business.
5. **Who remains to be done?** The survey also asks the NEs what they think is a business size at which their firms is self-sufficient to generate revenue to cover costs, and at what size their firm is large enough to attract funding from the established business

community. Ten percent of our NEs say that their firm is already self-sustaining, while only 5% say that their firm already has received funds from the established financial community. A significant fraction, 23%, still faces a lot of uncertainty about both questions, and does not know how to answer them.

A comparison of the two distributions indicates that business size needed for self-sufficiency is larger than business size needed to borrow from the established financial community. This could indicate that in many cases the NEs believe that they can start formal kind of borrowing before their business reaches its self-sustaining size.

Looking at the distributions of the ratios between the capital that the new business owners have already invested in their business and these two measures of business self-sufficiency gives us some idea of how far these business need to go before they really become operational. These distributions reveal that 30% of the male NEs think that their business is already large enough to be self-sustaining, compared to 40% of the female NEs. In terms of borrowing, 50% of the male NEs believe that their firm is not yet big enough to attract funding from the established financial community, compared with 40% of the female NEs.

Section 2 describe the sampling strategy and the main characteristics of the data set. Section 3 address the question “Who are you?”, Section 4 refers to “What are you trying to do?”, Section 5 studies “What have you and others put into the business?”, Section 6 looks at “What have you accomplished?”, Section 7 refers to “What remains to be done?” and Section 8 concludes.

## 2 Data Collection

Nascent entrepreneurs are in the middle of two processes central to economic mobility and growth: the movement of their signatures’ to the paycheck’s front and the creation of a new good or service. Little is known about their activities because they they typically start with neither employees nor sales and therefore fall through the cracks of administrative data collection. The Panel Study of Entrepreneurial Dynamics (PSED) was a data collection project undertaken by the Entrepreneurial Research Consortium (ERC) to fill the resulting need for observations of nascent entrepreneurs.<sup>1</sup>

Gathering such data presents the challenge of finding potential entrepreneurs. For this, ERC relied on a weekly commercially-conducted telephone survey.<sup>2</sup> During July, August,

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<sup>1</sup>Here, we provide only a brief overview of their collection. Reynolds (2000) provides a more complete description.

<sup>2</sup>See Market Facts (2001) (available at <http://www.synovate.com/knowledge/research-on-research/> for a description of the random procedure used for the selection of telephone numbers.

November, and December of 1998 and April of 1999; the surveyors asked each of 15,118 respondents

Are you, alone or with others, now trying to start a new business?

For those answering “yes”, the surveyors followed with

Will you own all, part, or none of this new business?

Unless the respondent answered with “all” or “part”, the interviewer then asked

In the past twelve months, have you done anything to help start this new business, such as looking for equipment or a location, organizing a start-up team, working on a business plan, beginning to save money, or any other activity that would help launch a new business?

The market research firm identified those who answered affirmatively as Nascent Entrepreneurs. Of those, 87 percent agreed to have their first names and phone numbers forwarded to the University of Wisconsin for further questioning. These form the initial sample of Nascent Entrepreneurs. The market research firm also forwarded first names and telephone numbers of a sample who were not asked about their business activities but agreed to be contacted for “a study of the work and career patterns of all Americans, including those not currently working.” Sixty two percent of those asked agreed to be contacted. The ERC used these to collect data from a comparison group. The ERC contracted with the University of Wisconsin Survey Research Laboratory to conduct telephone interviews of both samples. For the overwhelming majority of sampled individuals, the phone interview occurred within three months of the initial screening interview.

For the Nascent Entrepreneurs, the interviews began by asking whether the business’s revenues were sufficient to cover the salaries of manager/owners. If so, the ERC considered the firm to be an established business and the interview terminated. This screen eliminated about 27 percent of the initial NE sample. Seven percent of those left could not be contacted, and twenty percent refused to be interviewed. The remaining 446 identified and screened Nascent Entrepreneurs cooperated with the survey. The survey of the comparison group yielded exactly half as many responses.<sup>3</sup>

In mid 1998 the National Science Foundation funded the ERC to over sample Women Nascent Entrepreneurs. The screening interviews for this sample occurred in the last four months of that year (concurrently with the initial representative sample) and the telephone interviews occurred quickly thereafter. This sample contains 223 interviews. Curiously, 52 of them are *male*. Some of these seem to have arisen when a husband answered the interview

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<sup>3</sup>These figures come from Reynolds (2000) and Gartner et al. (2004).

Table 1: PSED samples observation counts

	Males		Females	
	NE	CG	NE	CG
All Records	275	104	342	119
with Age Recorded	272	104	337	119
over 20 Years Old	263	102	335	116
with Education Recorded	261	102	334	116
with Experience Recorded	260	102	330	115

“NE” and “CG” denote Nascent Entrepreneurs and members of the Comparison Group.

about a husband-wife business partnership, but answers to other questions rule out this explanation for the others. Our analysis excludes these male members of the female over sample.

We begin with the 171 female NE’s from the over sample and the 446 NE’s from the initial sample. To better understand who these NE’s are, we employ the 223 comparison group observations.<sup>4</sup> Before proceeding with the analysis, we apply a few simple screens. We keep only those observations with age, education, and experience recorded who were over twenty years old. Table 1 shows the number of observations each screen keeps. The final sample has 590 Nascent Entrepreneurs promised in this paper’s title and a comparison group of 227. The predominance of women among the Nascent Entrepreneurs arises from the female over sample. Women are a minority of the randomly-selected Nascent Entrepreneurs, a fact which creates research and policy interests in female entrepreneurship.

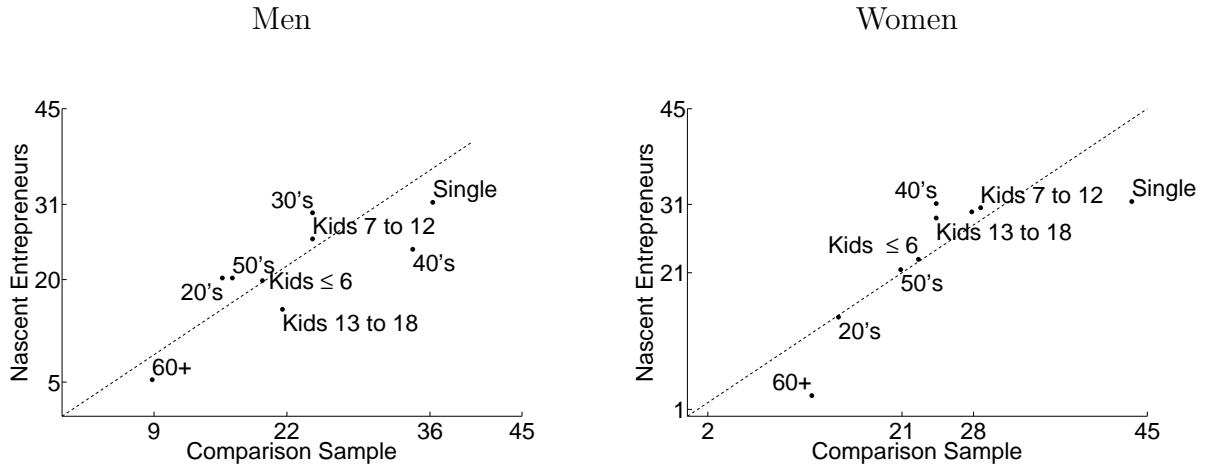
Many of our tables report data for three different samples. The column “All” refers to the initial representative sample, which includes both male and female NE. The column “Males” reports data for the males in the representative sample. The column “Females” refers to all female NEs, both in the representative sample and in the female oversample.

### 3 Who are you?

A casual encounter with a stranger begins with assessing her or his age. If a conversation arose and it became more personal, you would begin by talking about the person’s spouse (if one exists) and children. A longer conversation would then turn to the person’s schooling and career path. You might learn about someone’s family background after some time, and personal financial details could be forthcoming if you had earned a great deal of trust. Our

<sup>4</sup>The data set also contains a small minority over sample which we do not use. The ERC collected it in late 1999 and early 2000.

Figure 1: Comparison of Demographic Characteristics



Note: Each axis gives the fraction of the indicated sample falling into the given category. All axes are expressed in percentage points.

conversation with the 590 Nascent Entrepreneurs follows this general pattern. To make their answers more meaningful, we hold the same conversation with the 217 members of the comparison group and compare the two samples' answers.

### 3.1 Demographics

The PSED data contain answers to basic demographic questions regarding the person's age, marital status, and the presence of children. To summarize the respondents' ages, we break them into decades (20-29, 30-39, ..., 60 and over). We say that people who are neither married nor cohabitating are single, and we summarize their parental responsibilities with indicators for the presence of children in three age ranges, 6 and under, 7 to 12, and 13 to 18. Figure 1 compares the averages of these data across Nascent Entrepreneurs and the Comparison Group. In each of the gender-specific panels, the x-axis gives the percentage of the comparison group with the relevant dummy variable equal to one. The y-axis gives the analogous percentage for the control group. Each indicator variable has a data point, and a label accompanies each one. Points close to or on the 45 degree line indicate that the two groups have roughly the same percentage of respondents in the NE and the corresponding control group.

Begin with age. For both genders the fraction of people over 60 is lower among the NE than in the comparison group. This is generally consistent with people starting to retire around that age. Once we set this older cohort aside, the male and female NE display opposite



patterns. While women in their 30s and 40s are more likely to be NE than their younger and older sisters, men in their 40s are under represented among the NE. This is consistent with the choice of different career paths for men and women due to the responsibility of childcare. Men rationally accumulate large amounts of on-the-job experience not foreseeing a family oriented-interruption of their career and are thus less likely to enter entrepreneurship once their career is full swing. The historically observed patterns of female labor force participation over the lifecycle show that the fraction of women of childbearing age drops due to the withdrawal of women with small children. Women rationally foreseeing this interruption have a lower return to job-specific human capital and are thus more attracted to entrepreneurship in their thirties and forties after they return to work. The possibility also exists that, at that point in their life, they might choose to start a business to have a more flexible schedule. We examine this below.<sup>5</sup>

Proceeding to marital and parental status, Nascent Entrepreneurs from both groups are much less likely to be single than their counterparts in the Comparison Group. Single women comprise 43 percent of the comparison group but only 31 percent of the Nascent Entrepreneurs. The difference for the men is smaller (36 percent versus 32 percent) but nevertheless substantial.

There is one notable differences between the two samples' parenting obligations. Male Nascent Entrepreneurs are less likely to have teenaged children in the home. Among men, 22 percent of the control group and 16 percent of the Nascent Entrepreneurs have teenagers. Female Nascent Entrepreneurs, instead, are more likely to have teenaged children in the home, with 29 percent compared to 24 percent in the control group. These patterns line up with the relative absence or abundance of the 40 year old among male and female NEs.

## 3.2 Education and Experience

The conversation now moves on to educational background and experience. The PSED interviewers asked respondents in both samples

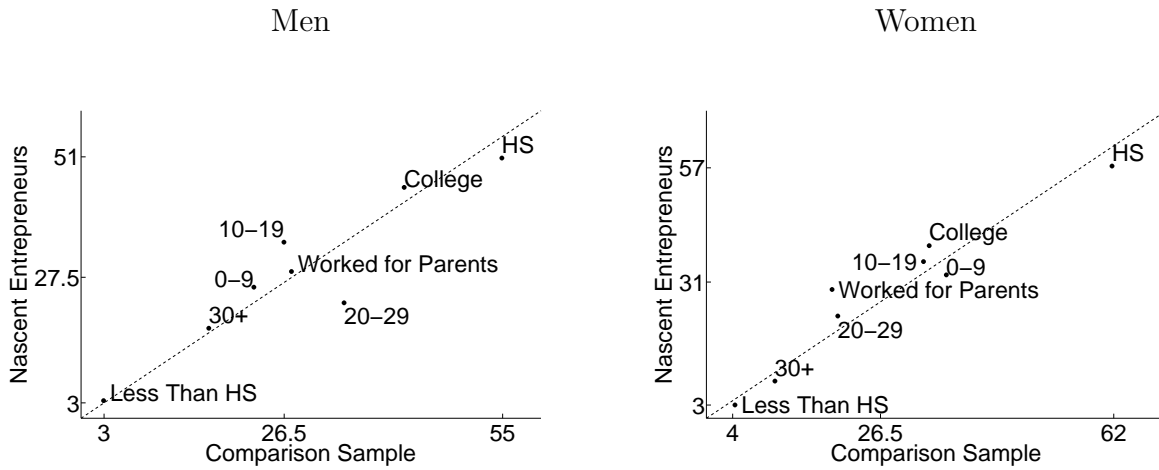
How many total years of full time, paid work experience in any field have you had?

We divide the answers into decades (0 to 9, 10 to 19, 20 to 29, and 30 or more) and tabulate each sample's distribution across them. The PSED assigns respondent's education into pre-specified bins. We condense these bins into three by combining grade school and less than

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<sup>5</sup>Another demographic characteristic of potential interest is racial background. We have also examined differences in the racial backgrounds of Nascent Entrepreneurs with the Comparison Group. We found little worth reporting.

Figure 2: Comparison of Education and Work Experience



Note: Each axis gives the fraction of the indicated sample falling into the given category. Numerical ranges refer to work experience in years. All axes are expressed in percentage points.

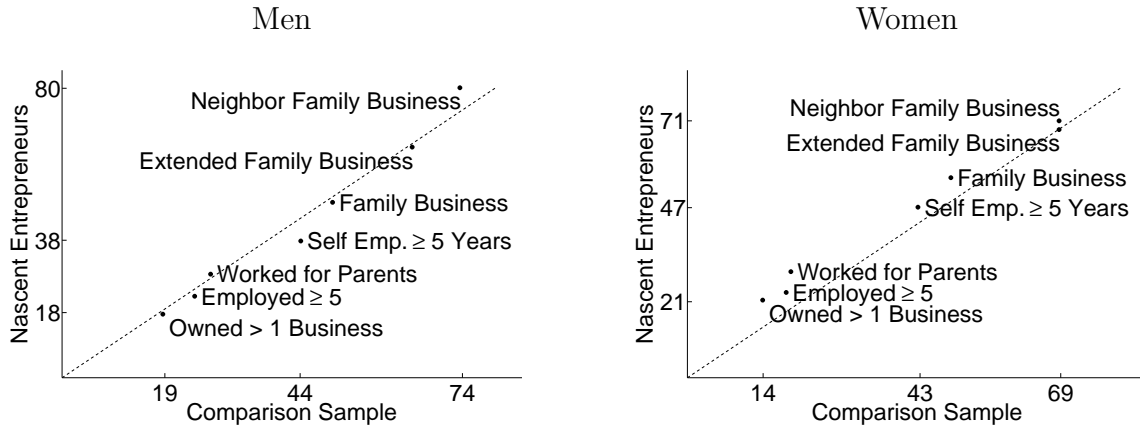
high school into “Less than High School”, high-school and more than high school into “High School Grad”, and college and post-college into “College Grad”.

Figure 2 displays the comparison of these variables in the same format as Figure 1. Although we measure actual experience and not potential experience (which is just a transformation of age), the patterns for experience follow the patterns for age in figure 1 closely. The sample of Nascent Entrepreneurs has relatively few men with 20 to 29 years of experience (34 percent versus 23 percent). The only notable difference in work experience between the Women Nascent Entrepreneurs from their Comparison Group is an under-representation of women with 0 to 9 years of work experience (37 percent versus 33 percent). The educational indicators clearly indicate that Nascent Entrepreneurs tend to be better educated than the Comparisons. Those with education of an high school degree or less are if anything, under represented among the NEs. Moreover, those with a college degree comprise a larger fraction of both genders’ samples of Nascent Entrepreneurs. The differences are 3 and 5 percentage points for men and women. One view of entrepreneurship holds that it is primarily a euphemism for underachievement in the regular labor market. These Nascent Entrepreneurs’ accumulated work experience and education give no support for that hypothesis.

### 3.3 Family Business Background

For our conversation with entrepreneurs, we want the discussion about family background to drift towards parents’ and other family members’ entrepreneurship. Much of the previous

Figure 3: Comparison of Family Business Backgrounds



Note: Each axis gives the fraction of the indicated sample with positive responses in percentage points.

literature on entrepreneurship has speculated on the transmission of entrepreneurship-specific human capital from parents to children. For example, [Lentz and Laband \(1990\)](#) show that about 50 percent of their sample of business owners had at least one self-employed parent. Whether this is remarkable depends on the analogous frequency for non-Entrepreneurs. The PSED surveyors asked both samples a variety of questions about the presence, scale, and longevity of family businesses during the respondent's youth. We use these to determine whether or not entrepreneurial families tend to produce Nascent Entrepreneurs.

With the PSED data, we determine the respondent's answers to the following questions:

- Did either or both of your parents ever manage a business owned by the family?
- Did any business owned by your family ever employ five or more people (including paid family members)?
- Were either of your parents self-employed for five years or more?
- Did either of your parents own more than one business?
- Did you ever work for one or both of your parents?
- Did anyone in your extended family own a business?
- Did any close friends or neighbors own a business?

Together, these questions measure the entrepreneurial skills of the respondents' parents and their potential exposure to it. Figure 3 displays the results for the comparison of

the two samples. Just as in [Lentz and Laband \(1990\)](#), fifty percent of male NE's and 55 percent of female NE's had parents who owned at least one business. However, about 48.5 percent of the comparison groups of both sexes also had parents who were once active business owners. This is hardly a very large difference. For the men's comparison, the frequencies line up on or slightly below the 45 degree line with one exception (the presence of entrepreneurs among neighbors and close friends). That is, *Male Nascent Entrepreneurs have no observable advantage in intergenerational entrepreneurial skill acquisition over the members of the comparison sample.*

Moving on to the women, the story changes. The female NEs are much more likely to come from families in which at least one of the parents was running a business, thus indicating that being exposed to the operation of a family business, or working for a family business, has a much greater effect on the propensity of females to start up a new business rather than on the one for males. This is an interesting hypothesis, which deserves further investigation.

### 3.4 Financial Background

Financial questions usually evoke guarded reactions. Surprisingly, the PSED respondents were more forthcoming about their income and wealth than expected. When asked

What was your total household income from all sources and before taxes last year? Be sure to include income from work, government benefits, pensions, and all other sources.

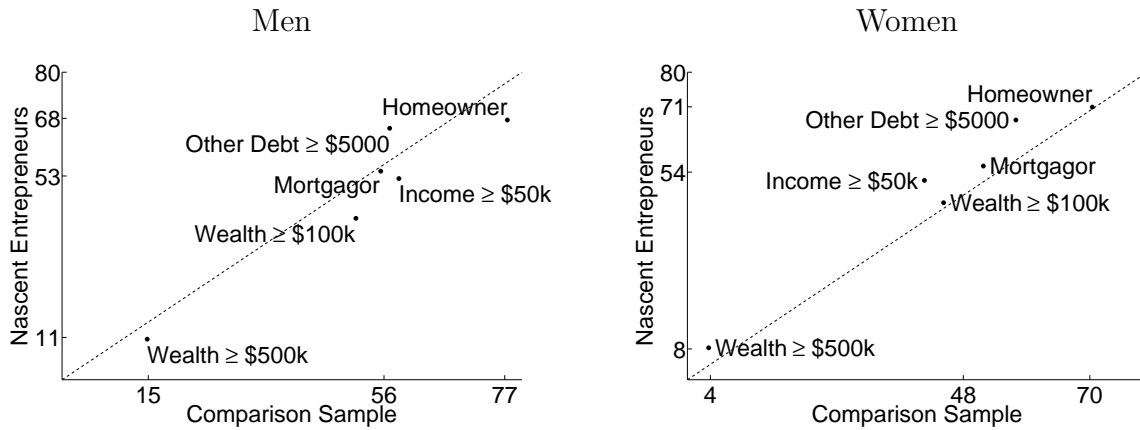
only 77 of the 840 respondents refused to answer. These non-respondents were then asked a sequence of bracketing questions, such as

Then, would you tell me, is your households total annual income, before taxes, over \$50,000 per year?

Only 20 of the 77 refused to participate in the bracketing questions, so arguably sample selection has only a small impact on the PSED income data. The respondents were less cooperative with questions on wealth (about 3/4 of the respondents gave answers), but most of those who did not answer the direct questions were willing to bracket their wealth.

Figure 4 uses these variables to compare Nascent Entrepreneurs' financial backgrounds with those of the Comparison Group. So that we can use the responses of those who only gave brackets for their income and wealth, we define dummies for high income ( $\geq \$50,000$ ), very high wealth ( $\geq \$500,000$ ), and high wealth ( $\geq \$100,000$ ). The figure also plots the frequencies of home ownership, mortgage debt, and non-mortgage debts exceeding \$5,000. For the men, the figure shows clearly that the Nascent Entrepreneurs are somewhat *less*

Figure 4: Comparison of Financial Backgrounds



Note: Each axis gives the fraction of the indicated sample with positive responses in percentage points.

financially well-endowed than their counterparts in the Comparison Group. Only 52 percent of the male NE's have household incomes exceeding \$50,000, while 59 percent of the comparison group does. These NE's are less likely to have wealth over \$100,000 (42 percent versus 51 percent) or over \$500,000 (11 percent versus 15 percent). The two groups frequencies of mortgage debt both approximately equal 55 percent, but the rate of home ownership among the Nascent Entrepreneurs is ten percentage points lower. Thus, home ownership without mortgage debt is less frequent among the NEs. Finally, NE's are more likely to have non-mortgage debts exceeding \$5,000 (65 percent versus 57 percent).

One obvious possible explanation for these results is the over representation of *young* men among the NE's. Examining the same statistics for the women gives that a quick plausibility check. Indeed, female NE's are much more likely to come from high-income households (52 percent versus 41 percent) and much more likely to come from very-high wealth households (8 percent versus 4 percent). The two samples of women have about the same frequencies of home ownership, mortgage debt, and high wealth. The only financial statistic which indicates a financial disadvantage for female NE's is the frequency of non-mortgage debt exceeding \$5,000. This debt could be financing for the new business, which we explore in more detail below.

### 3.5 Summary

The 590 Nascent Entrepreneurs in the PSED did not answer "Who are you?" with a great deal of uniformity. Men and women of all ages and backgrounds try to start businesses. Nevertheless some patterns do emerge when comparing the NE's responses to those from the com-

parison group. First, mid-career and middle-aged men tend to shun entrepreneurship, while the opposite is true for middle-aged women. Nascent Entrepreneurs have somewhat better educational qualifications than their non-entrepreneurial counterparts, so “entrepreneurship” does not merely substitute for “labor-market loser”. Family business background seems to be unimportant for whether a man becomes a nascent entrepreneur but quite important for the same choice of women. Finally, any substantial differences in the incomes or assets of those who decide to become Nascent Entrepreneurs are too subtle to manifest themselves in basic summary statistics.

With the answer to our conversation’s first question in place, we now discard the comparison group and henceforth focus on the nascent entrepreneurs.

## 4 What are you trying to accomplish?

The conversation now continues with a discussion of what the Nascent Entrepreneurs are trying to accomplish. Their business plans can vary on many dimensions, but some seem particularly relevant: type of product or service, intended scale, intended duration, potential importance for household income, and expected legal organization. The PSED respondents’ answers to questions on these specific subjects give us a useful answer to this section’s eponymous question.

### 4.1 Industry

The product or service to be sold determines many of the opportunities and constraints facing the Nascent Entrepreneur. The PSED interviewers asked the respondents to place their business into one of twenty categories. These do not replicate any standard industry classification system, because the survey designers correctly anticipated that some industries (like Food Service) would have very high frequencies.

Table 2 tabulates the Nascent Entrepreneurs’ answers. A large fraction of the men (35%) is starting a business in Health, Education, and Social services. Among the female NE this is also a strong category (20%). One might wonder if this high percentage reflects medical professionals beginning independent practices. The very low percentage of respondents with MD’s or equivalent post-graduate degrees (about 3 percent) indicates that this explanation is wrong. Retail and Restaurants account for 28 percent of the men and 45 percent of the women. The final stand-out category surprised us: manufacturing. Fifteen percent of the women and 8 percent of the men chose this field. Together, these leading four categories add to 80 percent of the women and 61 percent of the men. The remaining NEs of both sexes spread themselves fairly uniformly over the others. Two categories’ small frequencies

Table 2: Industry Choices

	All	Men	Women
Retail	12	9	16
Restaurant	22	19	29
Customer Service	4	5	4
Health, Education, Social Services	28	35	20
Manufacturing	11	8	15
Construction	4	4	3
Agriculture	2	2	2
Mining	2	2	1
Wholesale Distribution	0	0	0
Transportation	3	3	2
Utilities	0	0	1
Communications	3	3	2
Finance	1	1	1
Insurance	0	0	0
Real Estate	2	2	1
Law or Accounting	0	0	1
Computer Programming	0	1	0
Business Consulting	1	1	1
Business Services	1	1	0
Business Consulting or Service, Unspec.	2	3	1

Table 3: Sponsorship of Start-up Effort

	All	Males	Females
Independent Start-Up	85	84	86
Purchase/Takeover	3	2	3
Franchise	6	10	4
Sponsored Start-Up	6	4	7

went against our prior: The sum of Business Services and Business Consulting or Service, Unspecified only equals 4 percent for the men and 1 percent for the women. We speculate that these businesses require very little gestation time and so are likely to be under represented a sample of Nascent Entrepreneurs relative to a sample of new businesses.

## 4.2 Business Organization

A decision closely related to product choice is the business's sponsorship. Existing firms can sponsor a startup through franchise or a less routine cooperation agreement. Furthermore, the possibility exists that some NE's are actually purchasing (and possibly overhauling) a business rather than beginning from scratch. Table 3 reports the frequencies of these three kinds of sponsorship along with the frequency of independent start-ups. Only 10 percent of the men and 4 percent of the women are starting a franchised business, and sponsorships from existing firms account for another 4 percent of the men and 7 percent of the women. Only 2 to 3 percent of these Nascent Entrepreneurs are purchasing a business, so the vast majority of them are independent of any sponsorship.

A business's legal organization provides a contracting structure. It also determines whether or not the business pays taxes, whether or not it can raise equity funds from the general public, and the liability of its shareholders for the business's activities and debts. With a Sole Proprietorship, equity financing is impossible and the single individual owning the business is indistinguishable from the business itself. A General Partnership also cannot raise equity financing and must pass through its profits to its owners for taxation. The partners together are also liable for the business's activities and debts (typically jointly and severally). Other forms of legal organization offer protection from business liability and access to equity-based capital markets in return for additional reporting or business taxation. A Limited Partnership is like a General Partnership with the ability to accept equity financing from one or more Limited Partners who are not liable for the business's actions. Limited Liability Partnerships (which were very new at the time of the PSED survey) and S-corporations take this one step further by eliminating the General Partners from a Limited



Table 4: Legal Form

	All	Males	Females
Sole Proprietorship	49	48	56
General Partnership	19	17	21
Limited Partnership	6	7	5
Corporation	9	11	6
Subchapter Corporation	7	9	5
Limited Liability Company	4	4	3
Not yet determined	5	4	5

Partnership. That is, all of the business’s owners enjoy limited liability. However, they face limits in their ability to raise equity capital. Finally, C-corporations are familiar from the world of big business. They can raise equity in public markets, and their shareholders only pay income tax on dividends received. In return for these abilities, they must pay corporate income tax.<sup>6</sup>

Table 4 reports the percentages of the Nascent Entrepreneurs who expect to chose or already have chosen each legal form. Very small businesses with little need for capital or liability protection should obviously chose to be Sole Proprietorships, so it is unsurprising that about half of the Nascent Entrepreneurs will go with this organization. General Partnerships account for another twenty percent, and five percent of the respondents have not yet determined their legal form. Only 25 percent of the Nascent Entrepreneurs plan to obtain some form of limited liability, and their choices are spread out fairly evenly across the four legal forms.

All partnerships bring two or more people with different resources and skills together for a common purpose. A relevant dimension of heterogeneity for new business partners is family affiliation.

A partner from outside the Nascent Entrepreneur’s household brings labor and possibly some financial resources, and he shares the risks of the business venture. However, because complete contracts are hard to write, such cooperation potentially expose the partners to risks such as each others’ illnesses, personal financial problems, or simple under performance.

For a Nascent Entrepreneur in a conventional nuclear family, the only available business partner from within the household is the spouse. When couples pool financial resources, adding a spouse as an active business partner only dedicates more of the household time endowment to the business. However, this this comes at little cost. Although traditional marriage vows do not mention under performance, they explicitly bind the couple to share

<sup>6</sup>See for more information on the choice of corporate form.

Table 5: Partnerships

	All	Men	Women
with Spouse only	27.2	26.7	27.5
with Spouse and other Family	0.3	0.4	0.3
with other Family only	0.0	0.0	0.0
with Family and Non-Family	8.6	7.3	9.7
with Non-Family only	14.3	21.4	8.8

Note: (i) This panel gives the distribution of the number of non-spouse partners conditional on having at least one.

health and financial risks whether or not they partner together in business.<sup>7</sup> Moreover, better information and the costs of breaking a long-term relationship lower the costs of incomplete contracting. A family member living outside the respondent NE's household lies between these two extremes. Family members come from similar financial backgrounds, but they still can bring labor and capital to a new business. Separating from your brother or sister is easier than leaving your spouse, but ongoing familial relationships can still mitigate costs of incomplete contracts.

Table 5 gives an empirical perspective on these choices by reporting the frequency of partnerships for the respondent Nascent Entrepreneurs by family affiliation. Its top line gives the overall partnership frequency, which approximately equals 56 percent for men and 46 percent for women. A little over half of these partnerships only involve the Nascent Entrepreneur's spouse. Thus, only about 1/4 of the Nascent Entrepreneurs have partnered with somebody from outside of the home. A trivial percentage has added other family members to a partnership with the spouse, and none of the respondents report partnering only with family members living outside of the household. About 7 percent of the men and 10 percent of the women mix partners from within and outside the family.<sup>8</sup> The table's final line reports the frequency of partnerships without family members, 21.4 percent for men and 8.8 percent for women. This is the major gender difference in the table. Although only a minority of Nascent Entrepreneurs has a partner from outside of the household, men turn non-family contacts into business partnerships more frequently than women do.

Table 6: Anticipated Business Size

	Men	Women
Wants Large Business	22	15
Expects Employment $\geq 1$ in		
First Year	56	41
Fifth Year	60	47
Expects Employment $\geq 5$ in		
First Year	29	18
Fifth Year	43	29
Will the firm operate in five years?		
Maybe	51	50
Yes	45	46
Will the firm become your family's primary income source?		
Maybe	58	65
Yes	34	25

### 4.3 Size

With the exception of those entering Manufacturing, few in our sample could possibly be planning to create a steel mill or similarly large employer. Retailers' and Restaurants' typical scales are much more modest than this. The high frequency of Sole Proprietorships and General Partnerships also suggests that these Nascent Entrepreneurs are creating small businesses. Nevertheless, two open dimensions of the nascent businesses' intended scale interest us. Its potential economic importance for others (particularly prospective employees) and its possible long-term contribution to household income. We begin examining the first with the Nascent Entrepreneurs' answers to

Which of the following two statements best describes your preference for the future size of this business: 1) I want the business to be as large as possible, or 2) I want a size I can manage myself or with a few key employees?

The first line of Table 6 reports the fraction of each gender giving the first answer. A significant fraction of NEs aspire to become tycoons with management delegated to others, with more men (22%), than women (15%) doing so. However, most NEs harbor more realistic modest ambitions. The PSED interviewers also asked more specific questions about the entrepreneurs' expected employment in the first and fifth years of operation. The table's

<sup>7</sup>For example: *I, (Bride/Groom), take (you/thee) (Groom/Bride), to be my (wife/husband), to have and to hold from this day forward, for better or for worse, for richer, for poorer, in sickness and in health, to love and to cherish; and I promise to be faithful to you until death parts us.*(Source: [Wedding Central Australia](#))

<sup>8</sup>These family members come from both within and outside the respondent's household.

next two lines report the fraction of each sample planning to employ one or more people in the first and fifth years.<sup>9</sup> About 60% of male NEs expect to become employers over the first five years of operation, compared with only 41% for the first year, and 47% for the fifth year for female NEs. For those who wish to define entrepreneurs as employers to distinguish them from the “merely” self-employed, these numbers do so. Apparently, about 40 percent of men and 50 percent of women have no intention of designing a job for anybody but themselves. The NE’s aspirations for employing five or more people confirm this apparent tendency of women to plan smaller businesses. Thirty percent of men anticipate hiring five or more people during the business’s first year, and 43 percent plan to do so within five years. The analogous percentages for women are 18 and 29 percent.

The second dimension of size is relative to the household’s balance sheet. For this, one question asked of the respondents seems relevant,

On a scale of zero to one hundred, where 0 means completely unlikely and 100 means absolutely certain, what is the likelihood that this business will become the primary source of your familys income?

The answer to this question clusters at three points, 0, 50, and 100. With this in mind, we divided the answers into three categories, “No” ( $< 50$ ), “Maybe” ( $\geq 50$  and  $< 100$ ) and “Yes” (100 exactly). Table 6 reports the frequencies of “Maybe” and “Yes” for both men and women. About one third of the men and one quarter of the women said they were absolutely certain that their business will become the primary family income. The high actual failure rate for new businesses implies that these individuals either did not interpret the question probabilistically, refuse to acknowledge publicly the possibility of failure, or have overly optimistic expectations. Nevertheless this answer clearly indicates that these Nascent Entrepreneurs believes that their business could become their households primary income. Forty-four percent of the men and 47 percent of the women gave an answer between 50 and 99 inclusive. Again, these respondents harbor a substantial hope of becoming self-sustaining entrepreneurs. Overall, most of these Nascent Entrepreneurs believe that they are creating something financially significant for their household.

## 4.4 Summary

Just as with the demographic questions, the Nascent Entrepreneurs did not characterize their planned businesses with one voice. They do share some common threads. Most of them plan to open a retail store or a restaurant or provide a health or education-related service, and a sizeable minority of women plan to begin manufacturing something. About half of our NEs

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<sup>9</sup>Many respondents reported “Don’t Know”, and we consider these to have no definite plans regarding their firm’s size. They are included in the denominator when calculating these fractions.

plan on being sole proprietors, a quarter are choosing some form of limited liability. Most of them also plan on their business making a substantial contribution to household income. However, the respondents' anticipated business sizes differ greatly. Nearly half of them plan to employ nobody but themselves. The majority of the remainder plan to become significant employers within five years. Women also tend to have plans for smaller businesses than do men.

## 5 What have you and others put in so far?

With the Nascent Entrepreneur's goals established, we now turn to what has been done so far to turn ambitions into reality. Resources for business development can come from the respondent Nascent Entrepreneur and from any business partners. The two NEs most significant investments are their time and their money. The PSED interviewers asked the respondents about their own investments of time and money as well as those of any *active* business partners.

### 5.1 Time investments

We begin with an examination of the entrepreneur's use of time during the interview week, and we then proceed in studying the amount of time elapsed since business conception, and concludes by studying time invested in the business by the respondent and available partners.

#### 5.1.1 Use of Nascent Entrepreneur's time

The development of a business requires time at work. If switching between working for one's self and for others is easy, then we would expect many of our entrepreneurs to concentrate their time on their new businesses. However, labor market frictions can make quitting a job to work on an ultimately failed business much costlier than the foregone earnings. In that case, we expect those with unproven business plans to hedge their bets by continuing to work for pay while developing the business. Financial frictions that impede a Nascent Entrepreneur from smoothing consumption during an extended period of business development without other remuneration give another reason to continue working for others. In either case, the market work delays the new firm's birth.

The PSED interviewers asked each respondent detailed questions about their use of time during the interview week, and Table 7 reports statistics from the answers relevant for measuring the concentration of the respondents' time on their new businesses. Its first line reports the fraction of respondents claiming to work 35 hours or more per week on their new businesses. The interviewers defined this to be "full time". This equals 31 percent for

Table 7: Time allocation

	All	Men	Women
FT NE	29	31	25
Some paid Work	67	70	62
FT paid work	49	55	39
Some housework	70	60	86
FT housework	18	8	34
Any FT work	80	82	78

men and 25 percent for women. For a hard worker, such effort does not exclude maintaining an attachment to the labor market. The table's second line indicate that large majorities of both sexes do so by working for others for pay. One might speculate that most of this is part-time work, so the third line reports the fraction of respondents who report working full time for pay (again defined as at least 35 hours). Of the 70 percent of men working for pay, 55 percent did so full time. The analogous statistics for women are 62 and 39 percent. Apparently, about half of Nascent Entrepreneurs have hardly moved away from market work.

Home production also takes up a substantial fraction of a typical household's time endowment. Substituting away from home work while keeping the consumption of goods produced in the home unchanged requires finding someone from outside the household to assume these tasks, which usually requires paying them. Thus, both labor market frictions and financial constraints can also impede Nascent Entrepreneurs' time investments in their businesses. The final two lines of Table ?? report the fraction of Nascent Entrepreneurs who do some housework (here defined as at least six hours per week) and full time housework. Just as with market work, the majority of the respondents do some housework. The fraction of men doing housework full time is unsurprisingly low, but for women this fraction equals one third. Overall, only a minority of Nascent Entrepreneurs shows anything like a single-minded dedication to business development. The majority either perceives such specialization to be unwise or financially infeasible.

### 5.1.2 Time Since Conception

Understanding how long Nascent Entrepreneurs have been thinking about their start-ups helps place all of their activities into perspective. The PSED interviewers asked the respondents (in two questions)

In what year and month did you start to think about this new business?

We assign this date to the business's conception. The first two rows of Table 8 report mean and standard deviation (in years) of the time elapsed from the business's conception to the

Table 8: Time Since Conception

	All	Males	Females
Average	3.7	4.2	3.3
Std. Deviation	5.0	5.9	4.1
Percentiles			
10	0.4	0.5	0.4
20	0.8	0.8	0.7
30	1.2	1.3	1.1
40	1.7	1.8	1.5
50	2.1	2.3	2.0
60	2.7	3.0	2.3
70	3.5	3.8	3.3
80	5.2	5.3	5.1
90	8.5	10.3	7.8

interview date, and its remaining rows report this distribution's percentiles. On average, the sampled men have had the opportunity to work on their business for 4.2 years. For the women this average is 3.3 years. The percentiles reveal that the difference between men and women arises from differences between their distributions' right tails. The median time since conception equals 2.3 years for men and 2 years for women, and the 80th percentiles are 5.3 years and 5.1 years. A substantial minority of men who seem to never give up raise the 90th percentile to 10.3 years. The 90th percentile for women is only 7.8 years. Thus, both distributions have a thick tail, but that for men is thicker.

It seems that the tail of Nascent Entrepreneurs who never get their businesses off of the ground but also never give up disproportionately influence both statistics. To get a sense of how time since conception is distributed once we exclude this tail, we have recalculated the statistics in Table 8 after first dropping all observations with time since conception exceeding five years. As expected, eliminating the right tail makes men and women much more similar. The average durations for men and women are 2 and 1.7 years, and their medians are slightly less (1.8 and 1.5 years). Suppose that all new businesses took exactly  $x$  years to complete with efficient investments of time and money. Then the distribution of time since business conception in any sample should be uniform with mean (and median)  $x/2$  and standard deviation  $x/\sqrt{12}$ . Given the sample means for these Nascent Entrepreneurs, the predicted standard deviations are 1.15 for men and 0.98 for women. The actual standard deviations equal 1.3 and 1.2 years. This relatively close match leads us to conclude that this constant time-to-build model has promise for fitting these data after eliminating the tail of very persistent but heretofore unsuccessful Nascent Entrepreneurs.

### 5.1.3 Time Spent on Business Development

When a business combines the resources of two or more active partners, they both contribute their time. This combination can increase the total time spent on the project or merely split it across the partners. We compare hours spent in the business by Solo owners, and total hours worked on partnerships to evaluate this aspect.

The PSED interviewers asked each respondent to estimate the total time spent on the start-up by the respondent and each active partner. We use this information to gauge total time invested in the business, and we also use the time since business conception to compute hours invested in the business per week.

Begin examining the table 9 that reports data for solo NEs. The average entrepreneur in our sample put in 1,104 hours since the start. The median time investment is far less than that (455 hours), which we would expect from any distribution with a thick right tail. This overall average masks substantial difference between men and women. Throughout the whole distribution women have worked about half as many total hours as men.

The three rightmost columns of this table give the summary statistics pertaining to hours worked per week since business conception. The average amount of weekly time invested for our sample is under nine hours, a very small amount of time. Even those that have worked most intensively have not worked full time since the conception of the business. Since about 30% of our sample declare to be currently working full time for the business (see table 7), it must be the case that they have not done so continuously since the business' conception.

Men's average hours of work per week equals 11, and women's is 8. This discrepancy is smaller than the one for total hours reflecting the observation that time since conception is on average lower for the respondent women (see table 8). Accounting for time elapsed since conception brings the distribution of weekly labor input for men and women very close together.

With solo NEs the respondent's time investments by definition equals the total time invested by the owners in the business. Not so for NEs with partners. Table 10 reports summary statistics for total hours worked on partnership startups. The average total hours for all of the NEs partnerships in our sample equals 2,019. This almost two times the analogous average for solo NEs. So clearly, partners do not merely replace the respondent's time in getting the business started. A look at the average hours per week reveals that this gap is even more substantial when we take into account time since conception. Businesses with partners take off much faster, so average hours per week for partnerships is 21, compared to 9 for solo NEs. The last notable feature of table 10 is that the respondent's gender matters much less for time invested in partnerships.



Table 9: Hours Worked on the Startup, Solo NEs

Percentile	Total			per Week		
	All	Men	Women	All	Men	Women
Average	1104	1568	797	8.8	10.6	7.6
Std. Deviation	1702	2183	1203	12.8	15.6	10.4
Percentiles						
10	16	20	12	0.2	0.2	0.2
20	60	100	50	0.6	1.0	0.6
30	100	200	80	1.4	1.4	1.4
40	217	400	150	2.6	2.8	2.6
50	455	600	300	4.0	4.9	3.5
60	692	1000	500	5.8	7.2	5.7
70	1000	2000	800	9.2	11.5	8.1
80	2000	2080	1070	14.4	17.3	10.9
90	3000	4000	2080	24.9	29.3	23.1

Table 10: Total Hours Worked on Partnership Startups

Percentile	Total			per Week		
	All	Men	Women	All	Men	Women
Average	2019	1989	2048	20.9	23.1	18.8
Std. Deviation	3634	3742	3537	40.4	51.6	24.8
Percentiles						
10	80	100	80	0.8	0.7	0.8
20	160	190	150	1.8	2.1	1.7
30	260	358	210	3.1	3.2	3.1
40	500	540	400	5.4	5.1	6.6
50	800	800	800	9.2	9.4	9.2
60	1316	1275	1384	12.7	12.9	12.5
70	2000	2000	2003	19.2	19.6	19.2
80	3000	3072	2800	30.4	29.6	30.6
90	4450	4385	5000	51.3	50.4	51.7

Table 11: Monetary Investments of Solo Nascent Entrepreneurs

	All	Men	Women
Average	6695	7541	6144
Std. Deviation	15856	12087	17908
Percentiles			
10	15	0	50
20	500	500	425
30	700	1000	600
40	1000	2000	1000
50	2000	3000	2000
60	3500	5000	3000
70	5000	6000	4000
80	8000	10000	5750
90	20000	20000	15000

## 5.2 Capital Investments

We now turn to the monetary investments. Adding a partner might be a way to obtain easier or cheaper financing, thus alleviating financial constraints that would otherwise limit the size of the business<sup>10</sup>. Table 11, reports the averages, standard deviations, and percentiles of these investments for solo NEs. Table 12 reports the corresponding numbers for all owners' investments in partnership start-ups.

A comparison of these two tables reveals that the bottom of the distributions of monetary investments for solo entrepreneurs and partners are very small and very similar to each other. Starting from the 40th percentile, however, a gap opens up between these distributions, with partners investing far more money in the business than solo NEs. The difference is about a factor of four for the top two deciles in the distribution of business monetary investments. These tables thus contain one striking pattern: Nascent Entrepreneurs with partners tend to invest *more* of their own money than those operating alone.

These tables are also consistent with the previous evidence that women aspire to run smaller businesses. The median female solo entrepreneurs investment equals about two thirds of her male counterpart's, and this ratio equals about three fifths for those NE's with partners. Of course, these distributions have very thick tails. This brings the averages far above the medians, but more for women than for men. Thus, measuring the investment difference between the sexes with averages makes it smaller.

<sup>10</sup>See Basaluzzo (2004) for an in-depth analysis of partnership financing.

Table 12: Monetary Investments in Partnership Startups

	All	Men	Women
Average	33817	38567	29228
Std. Deviation	116976	126171	107575
Percentiles			
10	0	0	0
20	200	300	31
30	1000	1400	550
40	2200	3000	1800
50	4000	5000	3200
60	7500	12000	5000
70	15000	20000	10000
80	30000	40000	20000
90	70000	100000	50000

### 5.3 External Finance

Financial markets are imperfect, but they do exist. The previous analysis has shown that most NE engage in a good deal of saving to start off their new firms. What are the other sources of funds that they can tap into?

Table 13 provides an overview of the sources of other start-up funds. For each broad category of funding we report the fraction of NEs that report having asked for credit in that given category, and the amount received, conditional to such amount being positive. At this stage of business development the single largest source that our NEs tap into is the informal loan market, which refers to spouses, friends, and employers. Interestingly, the fraction of males and females asking for this sort of funding is quite similar: 42% and 46%, but the females obtain much smaller amounts from informal sources: only \$3,000 compared to \$14,000 for male NEs. Only one quarter of our male NEs have applied for formal business loans, compared to an even lower 16% for the females. Conditional on obtaining such a loan, the amounts are significant, and larger for females than males, that is \$40,000 for females and about \$32,000 for males. A large fraction of both males and females, around one-third of our samples ask for a credit card loan to finance their start-ups, and those who obtain it have a credit of about two to three thousand dollars from this source. Only a tiny fraction takes out a second mortgage, but we do not know if they reduce their equity in their first mortgage to finance the business. Overall, 65% of our NEs have asked for some source of external funds, and the average amount among those that have received any such fund is much larger for males: \$13,000, than for females: \$3,500.

Tables 14 and 15 disaggregate informal and formal sources of funds in more detail, and

Table 13: Sources of Funds

Sources	Males		Females	
	Fraction	Amount	Fraction	Amount
Informal Loans	42	14000	46	3000
Formal Business Loans	25	32500	16	40000
Credit Cards	28	3000	34	2000
Second Mortgage	5	15000	2	40000
Any Source	65	13000	65	3500

“Fraction” is the share of the respondents that report having asked for funding. “Amount” is the median amount expected, conditional on positive amounts.

also report the fraction of applicants that has been turned down in each source of funds. The table on the informal sources of funds shows that the chance of receiving such a loan is far from being one even conditional on asking. Spouses are more likely to accept to provide such a loan (over 80% for NEs’s spouse). Family and friends accept such requests with about 70% probability, while employers (of males NEs at least) are less likely to grant money for their employees to start a new firm. The table also shows that in the majority of cases female NEs receive smaller loans. This does not necessarily means that they face tighter financing constraints, but could be related to the fact that they want to implement smaller businesses.

Table 15 disaggregates the formal sources of funds. Interestingly, not only a tiny fraction of NEs has asked for a formal business loan by now, but the acceptance rate conditional on asking is even smaller than for family and friends. Those that ask, and obtain one of these loans, obtain amounts that are large compared to the ones obtained in the informal credit market. These are likely to be the business that are more promising and more ambitious. This table also shows that banks are by far the largest sources of funds, and that venture capitalists provide large loans to only a negligible fraction of NEs in our sample.

## 6 What have you accomplished?

Given the survey design, all of our NEs have not had revenues to exceed costs for more than three months, but table 16 shows that there is still a good deal of heterogeneity in their stage of pre-market development. About 45% of our sample has a product or service that is completed and ready for delivery and about 20% is at the prototype stage. Another 20% is developing a model or procedure to sell, while 15% still has not done any work or does not know at what stage they are at.

Only 12% of our nascent entrepreneurs are currently employing managers or employees

Table 14: Informal Sources of Funds

Sources	Males			Females		
	Applied	Accepted	Amount	Applied	Accepted	Amount
Spouse						
Own	46	84	9000	66	83	2000
Partner's	58	78	20000	76	63	5000
Family and Friends						
Own	15	66	8000	12	73	3000
Partner's	9	64	8000	5	75	13000
Employer	13	33	25000	5	75	40000

“Fraction” is the share of the respondents that report having applied for funding. “Amount” is the median amount expected, conditional on positive amounts.

Table 15: Formal Sources of Funds

Sources	Males			Females		
	Applied	Accepted	Amount	Applied	Accepted	Amount
Banks	14	53	41000	10	68	40000
SBA	5	33	30000	3	27	35000
Venture Capitalists	5	38	150000	2	29	60000
Personal Finance Co.	4	45	22500	1	67	8000
Others	8	48	13000	2	25	30000

“Fraction” is the share of the respondents that report having applied for funding. “Amount” is the median amount expected, conditional on positive amounts.

Table 16: Stage of Product Development

	All	Males	Females
Complete	45	42	48
Prototype	21	22	17
Development	20	21	19
Idea/No Work	15	14	16

in their business. Of this minority of employers, 30% have only one employee, 30% have two. The largest employers, those at the 90th percentile of the employment distribution have 7 employees, so have fairly large business already.

The PSED also asks “How would you describe the location where this new business is being developed? Is it a residence or personal property, like a home, garage, farm, or vacation home; is it on the site of an existing business; is it a special location for this start-up, like rented space, an incubator, or something like that; or is it not developed to the point where a specific location is needed?” We compute the fractions of male and female NEs that already have a special location for the start-up. We see this choice as a signal of a more ambitious business plan, and potentially of a more capital-intensive business. Consistently with the evidence that we have previously analyzed, we find that male NEs are more likely to already have a special location for the start-up, with 27% of males having done so compared with 22% of the females.

The PSED also asks “Has the new business received any money, income, or fees from the sale of goods and services?” In our sample, 41% of the male NEs have already received some revenue from operating this business, compared to 47% of the female NEs. These fractions are very similar to those having finished developing a product or service to sell.

Another interesting piece of information comes from the following question “Does the monthly revenue now exceed the monthly expenses?”. The fraction of male and female NEs answering yes are remarkably similar, with 36% of the male and 34% of the female NEs responding yes, and is thus smaller than for the previous question, indicating that even after starting to sell their product, most business still need some time to make enough to cover their operating costs.

## 7 What remains to be done?

The PSED includes some very interesting and novel questions about NE’s perceptions of how big the firm needs to be to become “self-sufficient” and to attract external financing. The exact wording of these questions is “How much in total funds, loan and equity will the new business need before it becomes self-sustaining - that is, before income is greater than all monthly expenses, salaries, supplies or parts, inventory, interest, taxes, and other expenses?” “Businesses usually require some money before they receive financial support from the established community, such as bank loans or purchases of ownership or equity. How much money do you think that the business will need before it can expect any funds from the established financial community?”.

It is interesting to first look at the magnitude at of the responses of the NEs to these questions and to then compute the ratio of the capital that is already in place in the nascent

business to these perceived capital needs to see how far along these business are along these dimensions.

Ten percent of our NEs say that their business is already self-sustaining, while 23% do not know how to answer this question. Regarding the second question, 5% of our sample already has received such funds, while 23% do not know what is the threshold to receive financial support from the established financial community. The small fraction of NEs already having received funds from the established financial community is consistent with Table 15, which shows a small fraction of our sample having already applied for such funds, and an even smaller fraction having already received them. The large fraction of NE responding “Don’t Know” to these questions simply reflects the fact that they are still in the process of starting up a business and that there is a lot of uncertainty involved about it.

Table 17 displays the deciles of distributions for those male and female NEs that answer each question with a dollar amount. The information from this table confirms our previous findings that female NEs wish to implement smaller businesses, since both the self-sustaining business size and minimal firm size needed for borrowing are uniformly smaller for female NEs than for male NEs.

The distribution of business capitalization necessary for self-sufficiency shows 30% of the male NEs aim at implementing businesses than are self-sustaining at or below a business size of \$10,000, while 40% of the female NEs are implementing a business with the same kind of capitalization requirements. About 20% of our sample think that their business needs to fairly well capitalized before it can generate enough revenue to be self-sustaining. This size is \$300,000 for male NEs and \$175,000 for female NEs.

Among the respondents reporting a dollar amount for business money needed to attract financial support, 30% of both male and female NEs do not think that they need any amount of money to be able to receive financial support from the established financial community. It is interesting that despite the fact that this 30% of NE think that they could have already obtained such financing, most of them have not applied for it, and a large fraction of those that have applied have been turned down for it (see Table 15). It would be interesting to investigate this discrepancy more. One possible explanation could be that the respondents have some personal collateral (such as a house or a car) that they think that they could use directly to obtain credit for the business, but that does not necessarily needs to belong to the business balance sheet.

For the rest of the distribution, the data confirm that female NEs expect to have to put in less money to reach that point than male NEs. Some NE’s, however, do think that they do need significant amounts of money to receive such kind of lending, with 30% of the male NEs and 20% of the female NEs thinking that they need at least \$25,000 to that goal. It would be interesting to analyze more the balance sheets of these NEs and their perceived

Table 17: Distributions of Business Size Needed for Self-Sufficiency or for Borrowing

Percentile	Self-Sufficiency		Borrowing	
	Men	Women	Men	Women
10	1000	600	0	0
20	4500	2000	0	0
30	8500	5000	0	0
40	10000	6000	5000	100
50	20000	10000	10000	2000
60	40000	25000	15000	5000
70	80000	40000	25000	10000
80	300000	175000	50000	25000
90	8.89e+07	8.89e+07	500000	100000

Table 18: Distributions of the Ratios of Total Capital Invested to Business Size Needed for Self-Sufficiency or for Borrowing

Percentile	Self-Sufficiency		Borrowing	
	Men	Women	Men	Women
10	0.00	0.01	0.00	0.00
20	0.06	0.12	0.02	0.06
30	0.22	0.30	0.20	0.40
40	0.40	0.50	0.44	$\geq 1$
50	0.50	0.75	$\geq 1$	$\geq 1$
60	0.97	$\geq 1$	$\geq 1$	$\geq 1$
70	$\geq 1$	$\geq 1$	$\geq 1$	$\geq 1$

need for business capitalization to see if, for example, these answers are correlated to their ability to collateralize other wealth in their balance sheet, and, more in general, what are the observable determinants to these perceived need of business collateral.

A comparison of the distributions indicates that business size needed for self-sufficiency is larger than business size needed to borrow from the established financial community. This could indicate that in many cases the NEs believe that they can start formal kind of borrowing before their business reaches its self-sustaining size.

Next, for each NEs that reports a dollar amount to capital invested and either business self-sufficient size (or minimal business size needed for borrowing) we compute the ratio of total capital invested in their business to each measure of required business size. For those that report already having self-sufficient businesses, or already having borrowed from the established financial community, we set this ratio at 1. Table 18 thus reports the distributions



of the capitalization ratios for female and male NEs for all of the respondent that do not say “don’t know” to each pair of questions for which we compute a given ratio.

Analyzing these ratios we can see that 30% of the male NEs think that their business is already large enough to be self-sustaining, compared to 40% of the female NEs. These fractions are consistent with the ones for revenues that we have seen in the section “What have you accomplished”.

In terms of borrowing, 50% of the male NEs believe that their firm is not yet big enough to attract funding from the established financial community, compared with 40% of the female NEs.

## 8 Conclusions

This paper analyzes interesting facts about new business start-up processes using a novel data set. In order to be able to use these facts to better understand new entrepreneur’s economic decisions, and to write down a model that is consistent with some key aspects of the data, more work is needed.

We mentioned at the outset that choosing to be in an entrepreneur amounts to choosing a production technology among a feasible set, under some financing constraints.

More work is needed to construct a good (and parsimonious) model of the various technologies, and to identify the possible technologies using observable variables.

More work is required to understand what kind of financing constraints entrepreneurs face, and how these choices interact with preferences to determine the choice of a given production technology, and hence entrance into self-employment, optimal investment and continuation decisions.

For example, technologies that have the benefit of requiring little capital, little pre-market time investment, and somewhat flexible labor input (such as a home daycare) might be little hampered by borrowing constraints, and might be the preferred choice of some female NEs with small children. On the other hand, the development of a new green technology might require considerable capital and time investment before any benefit is seen from the project, and it might be thus much more difficult to implement such a technology in presence of financing constraints. Clearly, these two choices are very different, and should not lumped together into the same model to be used for policy intervention. We see identifying observable, key, dimensions of technology choice and borrowing constraints as a fundamental step to disentangle technology and constraints and to better set the stage for a more useful understanding and modelling of entrepreneurship.

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