

## **Financing the Emerging Firm**

William B. Gartner

*Clemson University*

Spiro Institute for Entrepreneurial Leadership

346 Sarrine Hall

Clemson, SC 29634-1305

Phone: 864.656.0825

Fax: 864.656.7237

[gartner@clemson.edu](mailto:gartner@clemson.edu)

Casey J. Frid

*Clemson University*

Spiro Institute for Entrepreneurial Leadership

346 Sarrine Hall

Clemson, SC 29634-1305

Phone: 864.650.8800

Fax: 864.656.7237

[caseyf@clemson.edu](mailto:caseyf@clemson.edu)

John C. Alexander

*Clemson University*

Department of Finance

314 Sarrine Hall

Clemson, SC 29634-1323

Phone: 864.656.0547

Fax: 864.656.3748

[alexanj@clemson.edu](mailto:alexanj@clemson.edu)

Versions of this paper have been presented at the Babson Entrepreneurship Research Conference, Chapel Hill, NC, June, 2008 and the 5<sup>th</sup> Annual Symposium on the Panel Study of Entrepreneurial Dynamics, Greenville, SC, November, 2008.

## **Financing the Emerging Firm**

### **Abstract**

This study explores the financing choices of 1,214 nascent entrepreneurs in the PSED II dataset involved in the process of starting new business ventures. Funding sources are divided into two broad categories: personal and external. We develop a set of hypotheses about the kinds of firm and nascent entrepreneur characteristics that would likely influence which categories of financial resources are used, and the amounts acquired. The majority of financing (57% of all financing) for emerging ventures comes from the personal contributions of its founders, who contributed a median amount of \$5,500 per respondent. Firms that were projected to have higher levels of revenue, were incorporated, and were legally registered were significantly more likely to acquire external funding. Nascent entrepreneurs with higher levels of education and net worth were significantly more likely to acquire external funding. Results from analyses are presented and discussed. Implications of our findings are provided and suggestions for future research are offered.

*Keywords: nascent entrepreneur, capital structure, finance, start-up, PSED*

## Introduction

We explore the financing choices of entrepreneurs involved in the process of starting new business ventures. Nearly all research in the entrepreneurship area on the process of acquiring financial capital has focused on new firms rather than nascent ventures (Astebro & Bernhardt, 2003; Chaganti et al., 1995; Ou & Haynes, 2006; Verheul & Thurik, 2001). By nascent ventures, we mean those processes and events that might emerge into a new firm. Nascent ventures, therefore, are not firms per se, but attempts by individuals to develop a firm. The successful outcome from this process would be a new firm. While some studies have captured samples of firms at the time these firms were “born” (Cassar, 2004), there appears to be little research on the structure of financial investments during the venture formation process (except for some descriptive evidence provided in Reynolds, 2007 and Reynolds and Curtin, 2009).

Traditionally, studies on firm financing have focused on large corporations, IPOs, or well-established firms (Chirinko and Singha, 2000; Fama and French, 2002; Helwege and Liang, 1996; Shyam-Sunder and Myers, 1999). These studies have typically examined how different levels of debt and equity can be used to assuage information asymmetry problems, or as strategic tools (Harris and Raviv, 1991). A closely related body of literature has focused on the capital structure and financing choices of small firms, and generally looks at differences between large and small firms, and how these differences affect the choice of financing. Still other studies have incorporated aspects of entrepreneurship to explain financing decisions: financial bootstrapping, characteristics of the entrepreneur, and the nature of the start-up process have all been analyzed in conjunction with the entrepreneur’s financing choice (Berger and Udell, 1998).

For this study, we use theory from research on the sources of funding for new ventures (i.e., Cassar, 2004) which serves as the basis for a set of hypotheses about the types of financial resources that certain kinds of nascent ventures would use. We test these hypotheses using data from the Panel Study of Entrepreneurial Dynamics II (PSED II) (Gartner et al., 2004; Reynolds & Curtin, 2009), which is a longitudinal dataset that tracks the efforts of entrepreneurs towards starting ventures.

Understanding what may drive the financing decisions of nascent entrepreneurs is important, since a number of studies have drawn parallels between sources of financing and firm growth and survival (Michaelas et al., 1999; Cressy, 1996; Astebro & Bernhardt, 2003).

The remainder of this paper proceeds as follows: First we provide theory and empirical evidence about factors influencing nascent venture financing. Second, we develop hypotheses about relationships between certain characteristics of nascent entrepreneurs and these emerging firms and how these characteristics may affect the acquisition of certain types of financing. Third, we describe the PSED II data set, variables, and research design. Fourth, we present our results. Finally, we discuss the implications of these findings, their limitations, and offer suggestions for future research.

### **Theoretical Development**

According to traditional theories of capital structure, firms choose funding that minimizes the costs and maximizes the benefits associated with different sources of debt and equity (Titman and Wessels, 1988). Firms may select funding sources that allow them to transfer risk, maintain control, or signal information asymmetries. Other firms search for the cheapest available funding while maintaining control of the business (Harris and Raviv, 1991).

Agency conflicts between shareholders and debt holders occur because shareholders, as residual claimants, have an incentive to increase the operating and financial risk of the company (Jensen and Meckling, 1976). Since debt holders assume most of the risk, owners typically take on riskier investments. To protect themselves, debt holders often impose monitoring and contractual policies on firms, especially when the firm is privy to valuable product and/or market information. This mitigates the concerns of the debt holders, but it also increases the cost of capital for the firm (Cassar, 2004).

The pecking order model of capital structure directly addresses issues of information asymmetries. According to this theory, firms do not aim for a target debt ratio. Rather, a capital structure emerges as the firm selects from funding sources that minimize the cost of capital (Myers, 1984; Myers and Majluf, 1984). Internal sources (e.g. retained earnings) are used first since information asymmetry problems are non-existent. Debt is sought next, followed by outside equity. The presence of significant information asymmetries causes the outside investor to charge a higher rate of return on equity than on debt (Frank and Goyal, 2003).

Several studies have empirically tested these theories using samples of larger, established firms or firms undergoing Initial Public Offerings: IPOs (Chirinko and Singha, 2000; Fama and French, 2002; Helwege and Liang, 1996; Shyam-Sunder and Myers, 1999). Findings from these studies indicate that firms are more likely to use their capital structure

for strategic purposes, or to maximize returns to shareholders. Small firms and new ventures, however, differ considerably from these publicly held firms and face different agency and information asymmetry challenges. Smaller firms and particularly emerging firms are not likely to be publically traded or incorporated, which limits the sources of financing available to them. Also, because smaller and emerging firms are not required to share as much information as publically traded companies, they are information opaque (Ang, 1991). Signaling for these firms may depend on the personal characteristics of the owner/entrepreneur (e.g. prior experience, net worth, etc.) rather than capital structure considerations. Also, financing decisions for small and emerging ventures are more complex because they are closely linked to the personal wealth or contacts of the owner/manager. Business risk and personal risk may even be one and the same, depending on the legal form of the venture. Consequentially, agency problems may be more intense as shareholders and partners are often made up of family and friends (Ang, 1992). The tools available to small firms and emerging ventures to secure debt financing differ as well. Collateral for bank lines of credit and loans, personal guarantees, relationship lending, and shorter maturities on debt contracts to shield lenders from shifting risk profiles all serve to diminish the high information asymmetries between new ventures and lenders (Berger and Udell, 2003).

Financial bootstrapping is a concept that specifically addresses how small firms and new ventures face their particular financing issues. Bootstrapping basically consists of various methods firms employ to minimize dependence on costly or difficult to obtain outside financing. Winborg and Landström (2000) categorize a sample of 900 Swedish small business managers into six categories of ways small firms manage their financial needs: (1) *non-bootstrappers*; (2) *delayers* who delay payments to preserve cash-on-hand; (3) *owner-financers* who rely on personal and family funds; (4) *minimizers* who reduce accounts receivable and inventory as much as possible; (5) the *relationship-oriented* who depend on social networks; and (6) the *subsidy-oriented* who use government money to reduce financial cost and consists of high-growth, high-potential firms. The financing strategy of bootstrapping has been tested in the context of industry and the firm lifecycle. It seems that technology-based firms place more importance on bootstrapping techniques that improve cash flows, compared to nontechnology-based firms (e.g. terminating agreements with late payers, using credit cards, charging interest on overdue accounts, and borrowing equipment). It may be that higher information asymmetries make technology-based firms riskier to outside investors, which pushes the owners of these ventures to work harder for capital and preserve cash-flow (Van Auken, 2005). Bootstrapping may also differ depending on the age

of the firm. Early stage firms seem to rely more on owner-related and relationship-oriented techniques, while more developed firms depend more on customer-related techniques such as the negotiation of payment terms (Ebben and Johnson, 2006).

Other studies have analyzed the capital structure choices of small firms. Berger and Udell (1998) find that most funding for small firms in the United States comes from insiders (i.e. the entrepreneur, the start-up team, family, friends, etc.), but surprisingly little comes from credit card debt. Also, since the majority of small businesses are owner managed, agency conflicts are virtually nonexistent. When outside investors do get involved they pay close attention to the creditworthiness and reputation of the entrepreneur. Ou & Haynes (2006) found that internal financing is vital for small firms, with younger firms and lower quality firms being more likely to acquire additional internal equity than older or higher quality firms.

With the exception of studies on financial bootstrapping, financing for both large and small firms has typically been understood by separating the sources of financial capital into either: “debt and equity”, or “internal versus external” (Cassar, 2004; Chaganti et al., 1995; Fluck et al., 1998; Scherr et al., 1993). While these categories might provide meaningful insights into established firms’ capital structures, the phenomenon of nascent ventures is quite different. As per Ang (1991, 1992), agency conflicts in small, sole proprietorships may spillover from the firm and into the social life of the owner. We believe these conflicts are even more pronounced for nascent entrepreneurs as they deal with the uncertainties associated with the creation of a new venture. Problems of moral hazard and adverse selection may also take on a different dimension in nascent ventures, since the actions, experience, and characteristics of the entrepreneur may be the only signaling devices available for outside investors to assess risk. For innovative, high-potential nascent ventures, patents and prototypes may also be used as signals. Audretsch et al. (2009) examined this using a cross-sectional sample of 906 nascent entrepreneurs who are actively seeking angel or venture capital financing. Their results indicate that patents and prototypes increase the probability of acquiring external equity financing, but the effect is significant only when both occur together. They suggest that outside investors may view prototypes as signals of a tangible outcome (decreasing risk), and patents as signals that will secure a future return on investment.

We explore the financing behavior of nascent ventures over time, and from a much broader perspective that considers multiple sources of financing, various types of nascent entrepreneurs (sole proprietors, family firms, corporations, etc.), and characteristics of both

the firm and individual which may affect the kinds of financing these nascent entrepreneurs use. Our study is closely linked to prior work by Fluck et al. (1998) and Cassar (2004). Fluck et al. examined firm and individual characteristics to describe the proportion of different types of financing used by 541 entrepreneurial firms in Wisconsin. They group types of financing according to the source, and not contractual obligations (i.e. debt and equity). The sources are: insiders (the entrepreneur, start-up team, friends, family, and business associates); outsiders who monitor the firm closely (banks, venture capitalists, private investors); stockholders; bond holders; and others. While the authors do not go into detail as to why they group financing sources in this way, we speculate that in addition to the differences in information asymmetry problems between large and small firms previously discussed, the contractual obligations of debt versus equity also differ greatly between these types of firms. Their findings suggest that as the firm ages, the proportion of money from insiders increases to a point, and then external investments begin to become a larger percentage of total financing.

Cassar (2004) looked at individual characteristics, and the characteristics of entrepreneurial firms, as determinants of capital structure in Australian start-ups. The study's sample (the 1996-1998 Business Longitudinal Survey by the Australian Bureau of Statistics) captures these start-ups at an early stage: when they appeared on tax registers. Firms were asked about amounts of debt and equity they carried within 12 months of appearing on tax registers. The study's findings suggest that characteristics of the entrepreneur do not affect capital structure choice once firm characteristics are considered. Larger new firms seem more likely to use bank or other external financing, and firms with fewer tangible assets are financed informally compared to firms with greater tangible assets.

One of the key aspects of Cassar's study is that by capturing firms at such an early stage, survivor bias is significantly reduced. However, the firms in the Australian sample are not nascent ventures in the process of being created. Indeed, the sample includes firms that employed up to 200 employees. And, while the scope of the survey encompasses most of the Australian economy, it does not include: non-employing businesses or business classified as agricultural, utilities, communication services, education, or health and community services (Australian Bureau of Statistics, 2000).

The Panel Study of Entrepreneurial Dynamics I and II examines nascent entrepreneur financing behavior, eliminating survivorship bias. This adds to our understanding of what may determine the choice of certain types of financing over others since we could analyze the capital structures of both successful and unsuccessful attempts at starting a new venture, and

at the characteristics of each as well. Analyzing financing behavior across time may also lead to new insights on financing behavior that prior studies based on cross-sectional data are unable to reveal. Further, the use of debt and equity as categorizations of capital structure may be inadequate for analyzing financing choices of nascent ventures.

For this paper, we suggest that a way to differentiate among various sources of financial capital used for creating new ventures is simply to consider whether the financing comes either from the nascent entrepreneurs, themselves, or not (which would be external financing). First, we note that nearly all entrepreneurs are likely to use their own personal financial resources (savings) and the personal financial resources of other team members. For this study, we consider money obtained from credit cards and 2<sup>nd</sup> mortgages to be “personal” funds since nascent entrepreneurs are likely to be personally liable for these debts, and these financial resources are generated through these nascent entrepreneurs (because of their financial capabilities), and not because of the characteristics of the emerging firm. Also, providers of funds from credit cards or 2<sup>nd</sup> mortgages require no oversight or inquiry into how these funds will be used. Nascent entrepreneurs, through the use of personal savings or prior personal loans (via 2<sup>nd</sup> mortgages and credit card debt), are making a personal determination about their own personal capital structure to use in the financing of their emerging ventures, regardless of the financial structure of the emerging business they pursue. (Note: The implications of this insight will be discussed in more detail in the Discussion Section)

In terms of acquiring external financing, we consider the following sources of capital to be “external” to these entrepreneurs and their emerging ventures: financing from family and friends, loans from a bank, asset backed debt, leases, supplier credit, venture capital, and loans from government agencies. First, these sources of funding are “outside” of the nascent entrepreneur’s personal control. Second, these sources require more effort to obtain in terms of contractual and legal obligations on the part of the entrepreneur. Third, some of these sources are likely to entail social obligations and concerns (e.g., family and friends), which may have moral and interpersonal obligations to these outside sources. And, some of these sources are generally provided with some level of analysis (professional or otherwise) of the business plan or operations.

Certainly it is possible that our categorization of various sources of financial capital into these two broad sources of funding may have overlapping boundaries. For example, a family member, such as a spouse, might loan money to an entrepreneur while also playing the role as co-founder of the venture. In such a case it would be difficult to distinguish these



“external” funds from “personal” funds. Therefore, for this study, we have not included money provided from spouses in these analyses. Also, a bank might provide a nascent entrepreneur with a “business loan” with a personal guarantee, and consider this loan to the nascent entrepreneur as a personal loan. Such a loan might have little documentation and oversight if the loan was made based on the nascent entrepreneur’s earnings from on-going employment. Yet, we believe that the kinds of financial sources we have identified (see Table 1) would likely fit into the two types of personal or external categories in nearly all circumstances, especially taking into account the interpersonal, contractual and legal obligations of the entrepreneur when seeking to acquire these funds.

## **Hypotheses**

Based on these two broad financial categories, we develop hypotheses about how various characteristics of nascent entrepreneurs and their ventures will likely influence the acquisition of these two types of financing.

We suggest that the entrepreneur’s expectations of the future size of the new venture will significantly influence whether personal and external sources of outside funds are acquired during the start-up process. Smaller companies would require less capital. Furthermore, the expectation that a company would be small would likely mean the entrepreneur might be offered less capital from others. Barriers to entry may exist relative to more sophisticated capital sources, so the access and cost of these external funding sources may be too high for entrepreneurs contemplating starting companies that stay small. Larger firms would likely need outside funding for expansion. Finally, the cost to access certain kinds of funding may decline the larger the firm’s size. Ang (1992) found that the high transaction costs faced by small businesses in securing outside financing may preclude some sources of funding. Cosh and Hughes (1994) and Cassar (2004) found that smaller firms use relatively less outside financing.

H<sub>1</sub>: Nascent ventures that are expected to be larger in size will acquire more personal and external sources of financing than nascent ventures that are expected to be smaller in size.

Financial institutions and venture capitalists may consider the legal form of business used by the emerging venture to be a signal of the credibility and internal operational quality of the proposed business. Operational quality and accountability are often found in successful businesses. Prior evidence by Storey (1994), Freedman and Godwin (1994), Coleman and

Cohn (2000), and Cassar (2004) suggest a positive relationship between incorporation and leverage and/or bank financing.

H<sub>2</sub>: Nascent ventures that are incorporated will acquire more external sources of financing than nascent ventures that are un-incorporated.

Agency conflicts between debt and equity holders tend to be higher for firms that are expected to grow more quickly. This results from the incentive for equity holders to leverage the company, as they are the residual claimants, whereas the debt holders are the fixed claimants. Michaelas et al. (1999) found that leverage and debt are positively related to future growth. Cassar (2004) found that future growth is positively related to the use of bank financing. Titman and Wessels (1988), however, found that for manufacturing firms, debt ratios were not related to expected growth

H<sub>3</sub>: Nascent entrepreneurs who intend to start firms with higher rates of growth will acquire more personal and external sources of financing than nascent entrepreneurs who do not intend to grow.

Start-ups in more asset-intensive industries such as mining, manufacturing, and construction, would be expected to require larger capital outlays early-on compared to start-ups in service industries such as consulting, financial services, and consumer services. Therefore, we would expect that the search for financing for these firms will quickly extend beyond friends and family and move into more formal institutions such as banks and venture capitalists. Likewise, consultants, or other businesses that may be home-based, will rely more on personal funds and funds from the entrepreneur's immediate network since these types of firms may need fewer assets to succeed.

H<sub>4</sub>: Nascent ventures in asset-intensive industries will acquire more external sources of financing than nascent ventures in service-oriented industries.

We surmise nascent entrepreneurs will be required to put in more effort (e.g. preparation of a business plan and financial projections, and legally registering the firm) when seeking external funds. We also assume that providers of these funds will require this type of information to closely monitor the start-up's performance.

H<sub>5</sub>: Nascent entrepreneurs who have completed financial projections such as income statements, cash-flow statements, and breakeven analyses, will acquire more external sources of financing than nascent entrepreneurs who do not create financial projections.

H<sub>6</sub>: Nascent ventures that are registered as legal entities will acquire more external sources of financing than nascent ventures that are not registered.

Characteristics of the entrepreneur may affect access to funding. For example, education, industry experience, and involvement in prior start-ups may provide entrepreneurs access to funding networks that may otherwise not be available, or signal lower risk to outside investors. Gender or racial discrimination, or a lack of financial institutions in a given region, may also affect access to certain types of funding. Verheul and Thurik (2001) and Haynes and Haynes (1999) found that gender has no influence on the likelihood of getting a loan, whereas Carter and Rose (1998) found that women tend to use less institutional finance. Bates (1990) found that a small business owner's educational background is a major determinant of the capital structure of small firms. Coleman and Cohn (2000) found that education is positively related to acquiring external loans. Findings on the effects of the personal wealth of the nascent entrepreneur on funding choice are mixed. Avery et al. (1998) found that the majority of small business loans are backed by personal commitments made by the entrepreneur. However, they also found that the value of these commitments account for a small percentage of total investment. Parker (2004) posits that high net worth or net income individuals may be more likely to enter into entrepreneurship for reasons that are not yet measurable (e.g. they may be "inherently acquisitive"). Cassar (2004) found that once firm characteristics were taken into consideration, the characteristics of the business owner do not affect the financing of the firm.

H<sub>7</sub>: A nascent entrepreneur's characteristics will significantly influence whether external sources of financing are acquired.

## Methods

### Sample

We use the Panel Study of Entrepreneurial Dynamics II to explore the financing behaviors of entrepreneurs during the start-up process. The PSED II is a longitudinal representative sample of individuals attempting to start businesses in the United States. To identify the nascent entrepreneurs in this sample, 31,845 individuals were contacted via a random digit dialing procedure between October, 2005 and January, 2006. Only respondents answering “yes” to any of the following three questions were allowed to continue the screening process: “Are you, alone or with others, currently trying to start a new business, including any self-employment or selling any goods or services to others?” “Are you, alone or with others, currently trying to start a new business or a new venture for your employer, an effort that is part of your normal work?” “Are you, alone or with others, currently the owner of a business you help manage, including self-employment or selling any goods or services to others?”

Respondents who answered “yes” to any three of the above questions also needed to meet each of the following criteria to be designated as nascent entrepreneurs: (1) taken action in the past twelve months to start a business; (2) will personally own all or part of the business; (3) has not received any money, income, or fees for more than six of the past twelve months; or, if the business has received money, revenue cannot have exceeded expenses for more than six of the past twelve months; (4) monthly expenses cannot have included salaries or wages for the owners active in managing the business for more than six of the past twelve months. Based on these criteria, 1,214 nascent entrepreneurs, who also agreed to participate in the study, were identified and surveyed.

Detailed interviews of 1,214 nascent entrepreneurs were conducted by the University of Michigan’s Institute for Social Research (see <http://www.psed.isr.umich.edu/psed/home>). Wave A interviews were completed as respondents were identified in the screener, and completed in January, 2006. Waves B and C were completed at 12-months and 24-months after the initial interview, respectively (Reynolds & Curtin, 2007). All analyses were conducted using weights so that the sample might better represent the general population of U.S. working age adults (Reynolds & Curtin, 2007). Three waves of data have been collected and all three waves are used in this analysis.

## **Variables**

### *Dependent variables*

Table 1 lists the different sources of financing from the PSED II questionnaire, and how they are used to construct the dependent variables. For the item numbers and actual financing questions from the questionnaire, see Appendix 1. Personal sources reflect financing that comes directly from the nascent entrepreneur, other members of the start-up team, credit cards, and 2<sup>nd</sup> mortgages or car loans. External sources of funds include funds from friends and family; employers and co-workers; loans from employees of the start-up; money from banks and other financial institutions; asset-backed debt such as land or equipment; leases on property or equipment; bank lines of credit or working capital; credit from suppliers; venture capital; funding from government agencies; and SBA guaranteed bank loans. Money from spouses is not included in this analysis for two reasons: (1) spousal contributions were combined with contributions from other family members into one item in the questionnaire, so it was not possible to separate these funds from funds received from other family members; and (2) the line between funding received from a spouse, and personal funding over which the entrepreneur has total control, is not clear since both are presumably living in the same household, under a shared financial arrangement.

-- Insert Table 1 here --

We use four dependent variables overall. One binary variable was created for both the personal and external funding categories, and coded as “0” if that source was not used and “1” if it was used to finance the nascent venture. Also for each type, the total amount acquired in that category was used.

### *Independent variables*

*Firm Characteristics.* Expected firm size is measured as the log of the expected revenue after the first year of operations. Legal form is a dichotomous variable: “0” for non-incorporated start-ups and “1” for incorporated. Non-incorporated start-ups include: sole-proprietorships, general partnerships, and limited partnerships. Incorporated start-ups include: limited liability corporations, sub-chapter S corporations, and general corporations. Intent for growth is a self-reported measure: “0” for respondents who want “a size to manage

by themselves or with key employees” and “1” for respondents who want “to be as large as possible.” Industry is a dichotomous variable: “0” for service-oriented firms (customer or consumer service; health, education, or social services; communications; finance; insurance; real estate; business consulting or service); and “1” for asset-intensive industries (retail store; restaurant, tavern, bar, or nightclub; manufacturing; construction; agriculture; mining; wholesale distribution; transportation; utilities). Financial projections identifies whether the nascent entrepreneur has prepared income statements, cash-flow projections, or break-even analyses: “0” if they have not; “1” if they have been developed.

The final firm characteristics independent variable is “registered business” and identifies whether the nascent venture has been legally registered as a sole-proprietorship, partnership, etc. This variable has been included to control for the structure of the PSED II finance items of the data set, which are divided into two sections. Section Q items (see Table 1 above) were asked of nascent entrepreneurs who have not yet legally registered their start-up. Section R items were asked only of those who have registered their start-up as a legal entity.

*Entrepreneur Characteristics.* Gender is a dichotomous variable: codes “0” for female and “1” for male. For the OLS regressions, race is dichotomous and coded “0” for non-minorities (Whites) and “1” for minorities (Blacks, Asians, Hispanics, and other). For the logistic regression models, race was broken up into a series of dummy variables with “Whites” as the baseline. This better parses out the effects of belonging to different minority groups on the choice of financing. Education was also divided into dummy variables with “High school diploma or less” as the baseline. The dummy variables include “some college”; Bachelor’s degree; and post graduate degree. A nascent entrepreneur’s net worth is measured as the log of the net worth as reported by the respondent. Work experience is measured as the log of the number of years work experience in the same industry as the nascent venture.

## **Design**

Following Cassar (2004), the two binary dependent variables were tested using binary logistic regression. These models explain the effects of firm and entrepreneur characteristics on the choice to use either personal or external sources of financing. The two continuous dependent variables were tested using OLS regression. These models explain the effects of firm and entrepreneur characteristics on the amount of financing acquired.

## Results

### Descriptive statistics

Table 2 shows that most nascent entrepreneurs (83.8%) contributed personal funds to their start-up effort, and about one-third (31.8%) of respondents used external sources. As the data is skewed by a few large observations, we restrict our comments to the median amount of funding for each category.

Entrepreneurs who contributed personal funds provided a median amount of \$5,500. Entrepreneurs who acquired external financing acquired a median amount of \$8,250. Surprisingly, 14.4% of the firms in the sample did not acquire any financing at all, personal or external; and less than two percent of nascent entrepreneurs used external financing without putting up any personal money of their own. The median amount of external financing acquired by these individuals was \$5,250.

-- Insert Table 2 here --

Table 3 shows the frequencies and amounts of specific types of financing acquired by all 1,214 nascent entrepreneurs in the PSED II. The frequency counts, percentages, and funding amounts differ slightly from Table 2 due to sample weighting procedures. We also include spousal contributions in this table since the table addresses the total amount of funding acquired by source. Looking at the total amount of personal funds contributed by all nascent entrepreneurs in the sample (over \$116 million dollars), we see that personal contributions represent 57.34% of all financing used. The other major personal sources of funding were team loans (8.69% of total financing, median of \$13,000) and a 2<sup>nd</sup> mortgage (4.05%, median \$19,000). For external funding, the main sources were: spouse and family (2.47%, median of \$4,000); banks loans and lines of credit (12.07%, median of \$20,000) and asset backed debt (11.71%, median of \$30,000). It should be noted that only 0.3% of nascent entrepreneurs in this sample acquired venture capital financing, and in terms of dollar amount, this source of financing represented 0.38% of all nascent venture financing. And, one respondent used a loan from a government agency.

-- Insert Table 3 here --

## Analysis

Tables 4 and 5 show the correlation matrix and results of the logit and OLS regression models examining the effects of the firm and entrepreneur characteristics on the use of each category of financing. Expected firm size was positively related to the use of higher amounts of personal and external financing ( $p < .001$ ) supporting Hypothesis 1. Incorporated nascent ventures used higher amounts of personal and external financing as well, supporting Hypothesis 2. Incorporated nascent ventures were less likely to choose personal sources of funding compared to non-incorporated nascent ventures (e.g., sole-proprietorships and general partnerships). The growth intentions of the nascent entrepreneur were negatively related to use of external financing. Findings for personal sources were not significant. Hypothesis 3 was not supported. Whether the firm was in an asset-intensive or service-oriented industry was not significant for either the choice of financing, or the amount acquired. Hypothesis 4 was not supported.

-- Insert Table 4 here --

-- Insert Table 5 here --

The final two firm characteristic variables (financial projections and registered business) did show some effect on the choice and amount used of personal and external financing. Hypothesis 5 argued that firms with detailed financial projections would acquire more external financing. The findings for the amount of external financing were not significant, and Hypothesis 5 is not supported. However, nascent entrepreneurs who prepared financial projections were 1.5 times more likely to acquire external funds ( $b = .412$ ;  $\text{Exp}(B) = 1.509$ ;  $p < .05$ ). They also used larger amounts of personal funds. Hypothesis 6, that legally registered nascent ventures will acquire more external financing, was supported ( $p < .001$ ). These ventures also used more personal funds ( $p < .01$ ). Registered nascent ventures were also 2.2 times more likely to use personal sources, and 2.9 times more likely to use external sources.

Some of the characteristics of the nascent entrepreneurs did affect the choice and amount of different financing types. Gender did not significantly affect choices of personal or external sources of funding. However, it is worth noting that at  $p = .072$ , males were twice as likely to acquire external financing than females ( $b = .350$ ;  $\text{Exp}(B) = 2.079$ ). Regarding



race, non-minorities (Whites) use more external sources of funding ( $p < .05$ ). The logits analyzing the effect of race on the choice of funding show that Blacks are three times more likely to use personal sources than Whites ( $b = 1.132$ ;  $\text{Exp}(B) = 3.101$ ;  $p < .05$ ), whereas Asians ( $b = -1.868$ ;  $\text{Exp}(B) = 0.154$ ;  $p < .05$ ) and Hispanics ( $b = -.717$ ;  $\text{Exp}(B) = 0.488$ ;  $p < .05$ ) are less likely to use personal sources compared to Whites. The odds of Hispanics using external sources of financing are less than those of Whites when financing their nascent ventures ( $b = -.990$ ;  $\text{Exp}(B) = .707$ ;  $p < .01$ ).

Higher levels of education were significantly correlated with acquiring more external sources of financing. Findings for nascent entrepreneurs with some college or a Bachelor's degree were significant at  $p < .05$ , and with a graduate degree at  $p < .001$ , compared to respondents with a high school diploma or less. Also, nascent entrepreneurs with a Bachelor's degree were three times more likely to use personal sources than entrepreneurs with less than a high school diploma ( $b = 1.151$ ;  $\text{Exp}(B) = 3.160$ ;  $p < .05$ ). Nascent entrepreneurs with a higher net worth acquired more external financing. They also acquired more personal financing, and they were 1.5 times more likely to choose personal sources of financing than entrepreneurs with a lower net worth ( $b = .447$ ;  $\text{Exp}(B) = 1.563$ ;  $p < .01$ ). Finally, nascent entrepreneurs with more industry experience did acquire more external financing than those with less industry experience. And, for nascent ventures, more industry experience appears related to the use of more personal sources ( $p < .01$ ).

## **Discussion**

The way we will frame the discussion is to ask this question: What are the characteristics of nascent entrepreneurs and their firms that attract capital? The specific findings are these: Consistent with prior research on the effect of firm size on the types of financing used in small firms and early start-ups, we find that in nascent ventures, higher expected revenues were related to higher amounts of financing (both personal and external). The size of the firm did not appear to affect the decision to select personal or external sources. Incorporated nascent ventures (i.e. LLCs, subchapter S corporations, and general corporations) acquired more external and personal financing than non-incorporated nascent ventures such as sole-proprietorships and partnerships. In addition, non-incorporated ventures were more likely to choose personal financing than incorporated ventures.

Cassar (2004) found that the entrepreneur's growth intentions were related to a higher likelihood of using bank financing. Yet, we did not find intent for growth to be significant for choosing either personal or external funding. Further, we found high growth intentions to be

associated with lower amounts of external financing. We suggest that the question used to represent growth intentions (either “size to manage by themselves or with key employees” or “to be as large as possible”) may be a false dichotomy (i.e., it is possible to grow as large as possible and also be a size that one could manage by themselves or with key employees). Therefore, we believe that the measure we used is a poor measure of whether nascent entrepreneurs intend to grow their ventures. In some respects, the measure of expected revenue better reflects the growth intentions of these nascent entrepreneurs. By that measure, nascent entrepreneurs were more likely to acquire external funding.

Signals that the firm is better organized or more prepared (the use of financial projections and being legally registered) were both associated with higher amounts of personal and external funds being used to finance the business. Firms that have completed financial projections were more likely to use external sources compared to firms that had not completed financial projections. Finally, legal registration of the nascent venture had a significant effect on the decision to use all types of financing.

Findings from prior studies on the effects of personal characteristics on firm financing have been conflicting, and many studies have found personal characteristics to have no effect. Our study found that the personal characteristics of the entrepreneur affected the use of financial resources, to varying degrees. Gender did not significantly affect the choice or amount acquired for any of the funding categories, although at ( $p < .07$ ), we found that men are twice as likely as women to select external sources. Hispanics were half as likely to acquire external funding for their nascent ventures compared to Whites. Blacks were three times more likely than Whites to use personal sources. Possible explanations for these findings may include: discrimination on the part of lenders; a lack of formal external financing sources available in minority neighborhoods; or it may be that the types of firms that minorities are starting do not need external funding. Hispanics and Asians, on the other hand, were half as likely to use personal sources compared to Whites. It could be that first or second generation entrepreneurs in immigrant communities are relying more on external financing from friends, family, or local informal sources of funding, compared to Blacks.

Regarding education, nascent entrepreneurs with lower levels of education use lower amounts of external financing. This may be indicative of the types of firms being created by individuals with less education, either not needing external financing, or not qualifying for receipt of formalized loans. Interestingly, entrepreneurs with higher levels of net worth were more likely to select personal sources of financing. This may reflect the desire (or ability) of these entrepreneurs to maintain greater degrees of autonomy during the start-up process.

## Implications

Looking at the results, overall, offers a number of insights into the funding sources utilized by nascent entrepreneurs.

To the extent that the PSED II sample is representative of startup efforts in the population of working age adults in the U.S. (Reynolds & Curtin, 2007), then, the total and proportional amounts of financing (see Table 3) suggests that: The majority of financing for emerging ventures comes from nascent entrepreneurs, themselves. Reynolds and Curtin (2009) estimate that the total amount of capital provided by nascent entrepreneurs for starting businesses in 2005 was approximately \$69 billion. In the same period, venture capital firms invested \$0.8 billion (Reynolds & Curtin, 2009: 216). This is a ratio of 86 to 1. The financial investments by individuals to fund their own startup efforts, overall, dwarfs any other source of outside financing, particularly that of venture capital. While venture capital plays a major role in funding firms with a high impact on the economy and society in general, this type of financing is outside the necessity or ability of nearly all nascent entrepreneurs. Therefore, it would reflect the current reality of entrepreneurial activity in the U.S. to look for strategies to increase the ability of individuals to use their personal resources in business startups. For example, given the recent volatility in the market for public securities, it might be of value to allow and encourage individuals to use their 401k savings plans as one way to finance the startup of their firms (without requiring stiff penalties for withdrawing funds: rather treating withdrawals used for startups as investments).

The finding that 14.4% of the nascent entrepreneurs used no financing to start their businesses is intriguing and worth exploring. Baker and Nelson (2005) suggest that a critical skill for many entrepreneurs is “bricolage,” the ability to use whatever resources are at hand for the creation and pursuit of new opportunities. The nascent entrepreneurs who used no financing might offer significant clues about how entrepreneurs creatively use what they have and are able to start firms without financial investments.

It should also be noted that the categories of: spouse, family & relatives provided less than 2.5% of the proportion of total capital invested in emerging ventures, and that the category of: friends, employers, and work colleagues provided less than 1% of the proportion of total capital invested. “Friends and family” funding is a miniscule amount of the financing used for funding emerging ventures, overall, and, utilized by a small numbers of nascent entrepreneurs (16% used family sources, 6% used friend sources). As a contribution based on the amount provided by the nascent entrepreneurs themselves (median of \$5,500), those

individuals who did contribute to startups provided significant contributions (family median of \$4,000; friends median of \$2,000). So, few friends and family appear to contribute to venture financing, overall, but, those few that do contribute appear to provide a relatively important amount.

The OLS analysis indicates that only certain types of firms and nascent entrepreneurs are more likely to receive external financing. Firms that are projected to have larger sales revenue, and are currently registered and incorporated are more likely to receive external financing. The types of individuals who are able to acquire external capital are more likely to be better educated and have a higher net worth. We suggest that these broad findings might indicate that external capital is attracted to ventures that provide a number of signals about their likely success. The projected higher sales revenue finding would signal that the emerging business would more likely generate sufficient returns to pay back loans or provide dividends on equity. The process of registering and incorporating a business takes time, effort, and a certain amount of resources to accomplish, and, these efforts actually signal the existence of a business. A registered and incorporated business is a tangible marker to external investors, that, the business legally exists.

Coupled with the OLS results that nascent entrepreneurs are more likely to be better educated, and have a higher net worth, and, that these individuals are also likely to invest their own money into these emerging firms offers additional signals to outsiders that these kinds of emerging venture are started by nascent entrepreneurs that give the visible signals that they have better prospects of succeeding. The net worth results may also suggest that external funders provide capital because the nascent entrepreneurs have also invested significant amounts in their emerging ventures, as well. It is also worth noting that nearly 2% of the sample was funded with external sources, only. The characteristics of an externally funded venture, only, would be worth exploring, as well as whether the kinds of entrepreneurs that compose this very small proportion of the nascent entrepreneur population have special relationships with certain kinds of external funders (this group may be “friends and family” dependent for financing).

Given that the entrepreneur’s race seems to have an effect on the type and amount of funding used, policymakers can better assess the resource needs of populations in different neighborhoods and regions, to better target entrepreneurial assistance programs. Since education also seems to play a role, these programs can be better tailored to those who may have more difficulties procuring certain types of financing.

## **Limitations of the Research**

The PSED II dataset was developed to provide a sample of nascent entrepreneurs that would be generalizable to the population of individuals actively engaged in starting businesses in the United States. Given the substantial resources used to find a random sample of individuals in the process of starting businesses, and, the costs involved in undertaking a longitudinal phone survey of 1,214 individuals, the level of detail used to gather information about the resource acquisition behaviors is not finely tuned. The PSED II survey offers information about kinds of resources acquired, and when these resources were acquired, but, it does not provide information on the intentions of these nascent entrepreneurs in regards to why certain kinds of resources were sought, whether activities that pursued certain kinds of financial resources actually resulted in acquiring these resources, and, the logic for how the resources acquired fit into the broader scheme of the venture creation process. While most (82.5%) nascent entrepreneurs utilize their personal contributions as the primary source of funding, other sources do appear to play important roles in supporting the venture creation process. This study did not attempt to identify specific kinds of nascent entrepreneurs and their emerging ventures who were more likely to use specific funding sources, versus others. This study describes the kinds of funding utilized, and explores some of the firm and individual-level characteristics that are related to using personal and external sources of capital. No suggestions are made as to whether personal and external funding sources influence the likelihood of successfully starting on-going firms.

## **Directions for Future Research**

Given the variety of information about the characteristics of nascent entrepreneurs, their activities, and the kinds of ventures these entrepreneurs are attempting to start, there are many opportunities to parse the sample into different groups for study. As suggested earlier, we believe there would be value in understanding the 14% of the sample who did not use personal or external funding during the three years of the study. This group may reflect individuals who are not sufficiently committed to developing their ventures, but, there may be exemplars of ways to start businesses using existing resources within these entrepreneurs' control. These efforts may also reflect innovative business models that generate revenues and cash flow sufficient to grow the emerging firm without a dependence on personal or external capital sources.

As we explored the capital structure of these emerging firms, it became clear that little effort had been undertaken to look at how nascent entrepreneurs are likely to leverage their own personal capital structure as a financing strategy for starting ventures. Since many of the nascent entrepreneurs in this sample work either full or part-time jobs while in the venture creation process, this stream of earnings provides the entrepreneur with an ability to borrow money that will be paid through these earnings. Given how the PSED II questions are asked, it is difficult to ascertain whether bank loans are loans made to the entrepreneur, loans made to the emerging firm and guaranteed by the entrepreneur, or loans made solely to the emerging firm. Our findings suggested that entrepreneurs with a higher net worth also made higher contributions to their emerging firms and were also more likely to acquire higher amounts of external capital as well. It would be valuable to explore whether external funders evaluate an entrepreneur's commitment to the emerging venture based on the total amount invested, or, the percentage of total net worth of the entrepreneur invested. The general adage is that investors like to see that entrepreneurs have some "skin in the game" when they make an investment, yet, the amount of "skin," rather than the percentage of "skin" in the game might be what signals commitment.

Another aspect of emerging firm financing not explored in this study is that of the attrition rate of the sample itself. As respondents progress through the start-up process, some "drop out" at various points throughout the study. Basically, the nascent entrepreneurs in the sample fall into one of three outcome categories: those that have successfully started a firm; those that have abandoned the process; and those that are still trying. Those in the "in business" and "abandoned" groups will drop out at some point before Wave 2 or 3 in the data set. This paper does not deal with this attrition but future research might look at whether these groups utilize financial resources in different ways, or acquire (or not) different types of financing. It might be that those who "quit" acquired fewer resources than other entrepreneurs in the sample

Financing efforts are but one of many different activities that entrepreneurs undertake during venture creation. It would be interesting to see how other behaviors are related to financing activities, particularly in determining whether such behaviors as business planning and marketing behaviors might generate evidence to outsiders about the potential of the emerging firm as to warrant investment.

More effort needs to be undertaken to explore the kinds of business models that entrepreneurs use in developing their businesses, and, correlate these business models to the kinds of financing needed to start and grow these ventures. For example, Fiet and Patel

(2008) have suggested that some business models are likely to be less capital intensive while generating high rates of return and cash flows because of their abilities to generate monopoly rents. And, it could be possible that businesses that earn high rates of return on assets versus low rates of return, are likely to attract capital, both equity and debt, since it would likely be easier to pay back these investments (both in terms for interest rate offered on the principal and in the quickness of payback).

The categorization of personal and external funding sources could be further developed both empirically and theoretically as constructs for discerning among various ways entrepreneurs acquire outside financing. There would also be value at exploring specific funding sources (e.g., use of credit cards, bank loans) to evaluate whether the use of specific funding sources might play a significant role in venture creation. Certain specific funding sources might be more significantly correlated to getting into business. Obviously, as specific kinds of funding sources are explored in this dataset, the number of respondents in certain cells (e.g., venture capital financing – 4 respondents) makes using many statistical techniques unusable. This may lead to seeing value in developing detailed case studies that track nascent entrepreneurs in their efforts to acquire the resources necessary to start their businesses. It would be very insightful to have more clues as to how entrepreneurs think about their strategies for acquiring capital and how these strategies might be related to subsequent activities. Since not every effort to acquire external financing is likely to generate funding, it would be valuable to have more evidence about how entrepreneurs refine and adapt their resource acquisition behaviors, over time, and how the pursuit of resources, and either the success, or lack of success at acquiring resource are likely to affect other aspects of the emerging venture as well.

New venture creation is inherently a multi-level phenomenon, where the characteristics of the entrepreneur, firm, environment all influence the business formation process (Gartner, 1985). There are likely to be significant interactions among such characteristics of emerging ventures as: the quality of the opportunity pursued, the “quality” of the entrepreneurs pursuing these opportunities, the kinds of efforts undertaken to develop these opportunities, and, the sources of financing that these entrepreneurs both expect and are able to acquire. An entrepreneur’s expectation of acquiring outside funding (both informal and formal) is likely to have some correlation to the entrepreneur’s perceptions of the quality of the opportunity being pursued, but, these perceptions are likely to be significantly tempered by the entrepreneur’s skills and abilities to develop these opportunities. There is a need, then, for very detailed process research on the creation of ventures that follows both the

thinking and actions of entrepreneurs more frequently over a period of time. Case research that explores why entrepreneurs select particular high or low quality opportunities, and, then pursue various resource acquisition strategies might better ascertain the kinds of barriers entrepreneurs encounter for developing their ventures.

It is likely that many entrepreneurs have poor skills in accurately assessing the viability and value of the opportunities they pursue, as well as a poor assessment of their skills and abilities to successfully develop these ventures (Baron, 1998; 2007). Research that explored both the quality of the entrepreneur and the quality of the opportunity might better ascertain which kinds of entrepreneurs and which kinds of opportunities are more likely to receive funding. It may be that many entrepreneurs who use personal funds only, and not outside financing, end up failing. We suggest that “poor quality” entrepreneurs and opportunities are likely to be in this funding category. Yet, outside funded entrepreneurs may have a stronger belief in their capabilities and efforts, as well as the fear of failure because of their use of outside funding, which, in either case, might prompt them to work harder to insure venture success.

## **Conclusions**

This study provides evidence about the kinds of personal and external funding used by nascent entrepreneurs to fund their emerging firms. We have shown that the primary source of funding for venture development comes from the personal contributions of the entrepreneurs, themselves. Friends and family, as a source of capital, appear, overall, to play a minor role in funding new ventures. Firm characteristics, such as potential sales revenue, legal form of the business and whether it is registered, affect the acquisition of personal and external sources of financing. Personal characteristics such as race, education, and the entrepreneur’s net worth also affect the acquisition of certain types of financing.

We suggest that examining firm financing decisions early in the life-cycle of the firm may mean that traditional methods of understanding financing in these contexts are inadequate. There is a significant overlap between the nascent entrepreneur(s) and the emerging firm, as entities. And, entrepreneurs have various degrees of capacity to provide personal contributions to their businesses or generate external funding. Our study addresses some of these issues by focusing on the nature of the acquisition and provision of multiple sources of financing both internal and external to the entrepreneur, and analyzes how these funds are acquired over time.



Prior to this study, little evidence has been offered about the funding characteristics of emerging firms. The primary value of using the PSED II dataset is to provide facts about the phenomenon of venture creation, and to describe how the process of venture creation actually occurs. There is much anecdotal speculation about the venture creation process (for example, that entrepreneurs acquire their venture funding from friends and family) that does not have empirical evidence to support these claims. We believe that more studies using the PSED I and PSED II samples will provide a more complete and comprehensive picture of entrepreneurship and entrepreneurial processes. We suggest the challenge in entrepreneurship scholarship is to generate facts about the phenomenon. While current scholarship seems to be rich in theory about entrepreneurship, more evidence is needed to test the relevance of these theories to actual circumstances.

## References

- Ang, J.S. (1991). Small business uniqueness and the theory of financial management. *Journal of Small Business Finance*, 1(1), 1-13.
- Ang, J.S. (1992). On the theory of finance for privately held firms. *Journal of Small Business Finance*, 1(3), 185-203.
- Astebro, T. & Bernhardt, I. (2003). Startup-up financing, owner characteristics, and survival. *Journal of Economics and Business*, 55, 303-319.
- Audretsch, D.B., Bönte, W., & Mahagaonkar, P. (2009). Financial signaling by innovative nascent entrepreneurs. CEPR Discussion Paper No. DP7165. Available at CEPR: <http://www.cepr.org/pubs/new-dps/dplist.asp?dpno=7165>
- Australian Bureau of Statistics (2000). Business Longitudinal Survey: Confidentialised unit record file. Australian Bureau of Statistics, 8141.0.30.001. [http://www.abs.gov.au/websitedbs/D3310114.nsf/0/f7739966adba7636ca2572030016614c/\\$FILE/1994-95%20to%201997-98%20CURF%20docoV2.pdf](http://www.abs.gov.au/websitedbs/D3310114.nsf/0/f7739966adba7636ca2572030016614c/$FILE/1994-95%20to%201997-98%20CURF%20docoV2.pdf)
- Avery, R.B., Bostic, R. & Smolyk, K.A. (1998). The role of personal wealth in small business finance. *Journal of Banking and Finance*, 22, 1019-1061.
- Baker, T. & Nelson, R. E. (2005) Creating something from nothing: Resource construction through entrepreneurial Bricolage. *Administrative Science Quarterly*. 50: 329-366.
- Baron, R.A. (1998). Cognitive mechanisms in entrepreneurship: Why and when entrepreneurs think differently than other people. *Journal of Business Venturing*, 13, 275-294.

- Baron, R.A. (2007). Behavioral and cognitive factors in entrepreneurship: Entrepreneurs as the active element in new venture creation. *Strategic Entrepreneurship Journal*, 1, 167-182.
- Bates, T. (1990). Entrepreneur human capital inputs and small business longevity. *Review of Economics and Statistics*, 72(4), 551-559.
- Berger, A.N. & Udell, G.F. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking & Finance*, 22, 613-673.
- Berger, A.N. & Udell, G.F. (2003). Small business and debt finance. In Z.J. Acs & D.B. Audretsch (Eds.), *Handbook of Entrepreneurship Research* (pp. 299-328). Kulwer Academic Publishers: Boston.
- Carter, S. & Rose, P. (1998). The financing of male- and female-owned businesses. *Entrepreneurship and Regional Development*, 10(3), 225-241
- Cassar, G. (2004). The Financing of business start-ups. *Journal of Business Venturing*. 19, 261-283.
- Chaganti, R., DeCarolis, D., & Deeds, D. (1995). Predictors of capital structure in small ventures. *Entrepreneurship Theory and Practice*. 20(4), 7-18.
- Chirinko, R.S. & Singha, A.R. (2000). Testing static tradeoff against pecking order models of capital structure: a critical comment. *Journal of Financial Economics*, 58, 417-425.
- Coleman, S. & Chon, R. (2000). Small firms' use of financial leverage: Evidence from the 1993 National Survey of Small Business Finances. *Journal of Business Entrepreneurship*, 12(3), 81-98.
- Cosh, A.D. & Hughes, A. (1994). Size, financial structure and profitability: UK companies in the 1980's. In D.J. Hughes & D.J. Storey (Eds.), *Finance and the Small Firm* (pp. 18-63). London: Routledge.
- Cressy, R. (1996). Are business startups debt-rationed? *Economic Journal*, 106, 1253-1270.
- Ebben, J. & Johnson, A. (2006). Bootstrapping in small firms: An empirical analysis of change over time. *Journal of Business Venturing*, 21, 851-865.
- Fama, E. & French, K. (2002). Testing tradeoff and pecking order predictions about dividends and debt. *Review of Financial Studies*, 15, 1-33.
- Feit, J. O. & Patel, P. C. (2008). Forging business models for new ventures. *Entrepreneurship Theory and Practice*. 32 (4): 749-762.

- Fluck, Z., Holtz-Eakin, D., & Rosen, H.S. (1998). Where does the money come from? The financing of small entrepreneurial enterprises. NYU Working Paper No. FIN-98-038. Available at SSRN: <http://ssrn.com/abstract=1297105>
- Frank, M.Z. & Goyal, V.K. (2003). Testing the pecking order theory of capital structure. *Journal of Financial Economics*, 67, 217-248.
- Freedman, J. & Goodwin, M. (1994). Incorporating the micro business: Perceptions and misperceptions. In D.J. Hughes & D.J. Storey (Eds.), *Finance and the Small Firm* (pp. 232-283). London: Routledge.
- Gartner, William B. (1985). A framework for describing and classifying the phenomenon of new venture creation. *Academy of Management Review*, 10 (4), 696-706.
- Gartner, W.B., Shaver, K.G., Carter, N.M. & Reynolds, P.D. (Eds.). (2004) *Handbook of Entrepreneurial Dynamics: The Process of Business Creation*. London: Sage.
- Harris, M. & Raviv, A. (1991). The theory of capital structure. *Journal of Finance*, 46(1), 297-355.
- Haynes, G. W. & Hanyes, D. C. (1999). The debt structure of small businesses owned by women in 1987 and 1993. *Journal of Small Business Management*, 37(2), 1-19.
- Helwege, M. & Liang, N. (1996). Is there a pecking order? Evidence from a panel of IPO firms. *Journal of Financial Economics*, 40, 429-458.
- Jensen, M.C. & Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs, and capital structure. *Journal of Financial Economics*, 3, 305-360.
- Michaelas, N., Chittenden, F. & Poutziouris, P. (1999). Financial policy and capital structure choice in U.K. SMEs: empirical evidence from company panel data. *Small Business Economics*, 12(2), 113-130.
- Myers, S.C. (1984). The capital structure puzzle. *Journal of Finance*, 39, 575-592.
- Myers, S.C. & Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13, 187-221.
- Ou, C. & Haynes, G.W. (2006). Acquisition of additional equity capital by small firms: Findings from the National Survey of Small Business Finances. *Small Business Economics*, 27, 157-168.
- Parker, S.C. (2004). *The Economics of Self-Employment and Entrepreneurship*. Cambridge University Press.
- Reynolds, P.D. (2007) *Entrepreneurship in the US: The Future is Now*. New York: Springer.

- Reynolds, P.D. & Curtin, R. (2007). Business Creation in the United States in 2006: Panel Study of Entrepreneurial Dynamics 2. *Foundations and Trends in Entrepreneurship*, 4 (3), 155-307.
- Reynolds, P. D. & Curtin, R. (2009) Business creation in the United States: Entry, startup activities and the launch of new ventures. In C. Moutray (Ed.) *The Small Business Economy for Data Year 2008: Report to the President*. Washington, DC: U. S. Small Business Administration Office of Advocacy, pp. 165 – 240.
- Scherr, F.C., Sugrue, T.F., & Ward, J.B. (1993). Financing the small firm start-up: determinants of debt use. *Journal of Small Business Finance*, 3(1), 17-36.
- Shyam-Sunder, L. & Myers, S.C. (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics*, 51, 219-244.
- Stevenson, H.H. & Jarillo, J.C. (1990). A paradigm of entrepreneurship: Entrepreneurial management. *Strategic Management Journal*, 11, 17-27.
- Storey, D.J. (1994) The role of legal status in influencing bank financing and new firm growth. *Applied Economics*, 26(2), 129-136.
- Titman, S. & Wessels, R. (1988). The determinants of capital structure choice. *Journal of Finance*, 43(1), 1-19.
- Van Auken, H. (2005). Differences in the usage of bootstrap financing among technology-based versus nontechnology-based firms. *Journal of Small Business Management*, 43(1), 93-103.
- Verheul, I. & Thurik, R. (2001). Start-up capital: Does gender matter? *Small Business Economics*, 16(4), 329-345.
- Winborg, J. & Landström, H. (2000). Financial bootstrapping in small businesses: Examining small business managers' resource acquisition behaviors. *Journal of Business Venturing*, 16, 235-254.

Table 1: Dependent Variable Items from PSED II Data Set

	<b>Personal Sources</b>	<b>External Sources</b>
Q - Personal savings	●	-
R - Personal loans	●	-
R - Personal and team equity	●	-
R - Team member loans	●	-
Q - Credit card	●	-
R - Credit card	●	-
Q - 2 <sup>nd</sup> mortgage or car loan	●	-
Q - Family & relatives	-	●
Q - Friends, employers, & work colleagues	-	●
R - Loans from employees	-	●
Q - Bank or other financial institution	-	●
R - Bank loan	-	●
R - Bank line of credit or working capital	-	●
R - SBA guaranteed bank loans	-	●
R - Asset backed debt (e.g. land, equipment)	-	●
R - Leases on property and equipment	-	●
R - Supplier credit	-	●
R - Venture capital	-	●
R - Government agencies (not SBA)	-	●
R - Loans from other individuals	-	●
* R - Spouses, family, other kin	-	-
* Q - Other	-	-
* R - Other	-	-

Q = Before registered as a legal entity

R = After registered as a legal entity

\* = Not used in analysis

See Appendix 1 for specific item numbers and questions from the PSED II survey.

Table 2: Frequencies for Use of Internal and External Sources of Financing

	<b>Personal Sources</b>	<b>External Sources</b>	<b>Did Not Finance</b>	<b>External Financing Only</b>
Yes	1,017 (83.8%)	386 (31.8%)	175 (14.4%)	22 (1.8%)
No	197 (16.2%)	828 (68.2%)	1,039 (85.6%)	1,192 (98.2%)
Median amount	\$6,500	\$8,250	\$0.00	\$5,250
N	1,214	1,214	1,214	1,214

Table 3: Frequencies and Amounts of Financing Acquired (by Source)

Source	N	Median per Respondent	Total Across Sample	Proportion of Total
Personal contributions	1002 (82.5%)	\$5,500	\$116,282,536	57.34%
Team loans	35 (2.9%)	\$13,000	\$17,626,325	8.69%
Spouse, family & relatives *	202 (16.6%)	\$4,000	\$5,001,329	2.47%
Friends, employers, work colleagues	73 (6.0%)	\$2,000	\$1,996,219	0.98%
Credit card	173 (14.3%)	\$4,000	\$1,851,200	0.91%
2 <sup>nd</sup> mortgage or car loan	64 (5.3%)	\$19,000	\$8,222,305	4.05%
Bank loans, lines of credit, working capital, SBA guaranteed bank loans	180 (14.8%)	\$20,000	\$24,477,648	12.07%
Asset backed debt	57 (4.7%)	\$30,000	\$23,740,000	11.71%
Leases on property and equipment	32 (2.6%)	\$21,500	\$1,787,212	0.88%
Credit from suppliers	38 (3.1%)	\$6,000	\$1,033,600	0.51%
Venture capital	4 (0.3%)	\$50,000**	\$775,000	0.38%
Government agencies (non-SBA)	1 (0.1%)	\$2,000***	\$2,000	0.00%
Other individuals or institutions	36 (3.0%)	\$5,000	\$1,847,125	0.91%
<b>Total</b>			<b>\$204,642,499</b>	<b>100%</b>

\* Spousal contributions not included in subsequent analysis

\*\* The four respondents using venture capital acquired: \$650,000 | \$60,000 | \$40,000 | \$25,000.

\*\*\* Actual amount acquired by this respondent, from the government.

Table 4: Correlations for Logit and OLS Regressions

Variable	1	2	3	4	5	6	7	8	9	10	11
1 Expected revenue	1										
2 Legal form	.333**	1									
3 Intent for growth	.178**	.103**	1								
4 Industry	-.095**	-.043	.058*	1							
5 Financial projections	.193**	.192**	.059*	.014	1						
6 Registered business	.155**	.335**	.054	.025	.210	1					
7 Gender	.221**	.031	.046	-.107*	.015	.004	1				
8 Race	-.008	-.041	.074**	-.009	-.052	-.110**	.030	1			
9 Education	.105**	.171**	.018	.079**	.155**	.221**	-.093**	-.128**	1		
10 Net worth	.214**	.240**	-.007	-.037	.177**	.244**	-.005	-.111**	.299**	1	
11 Industry experience	.127**	.016	-.078**	-.127**	-.029	.024	.125**	-.020	.070*	.005	1

\* Correlation is significant at the .05 level (2-tailed)

\*\* Correlation is significant at the .01 level (2-tailed)



Table 5: Logit and OLS Regressions Explaining the Use (Logit) and Amount (OLS) of Nascent Funding Types

	<u>Personal Sources</u>		<u>External Sources</u>	
	Logit	OLS	Logit	OLS
Expected revenue	-.002 (.210)	.341*** (.038)	.163 (.132)	.541*** (.062)
Legal form	-1.095*** (.344)	.280*** (.068)	.234 (.210)	.451*** (.111)
Intent for growth	.436 (.364)	-.111 (.064)	.139 (.217)	-.280** (.105)
Industry	.079 (.333)	-.098 (.063)	.087 (.215)	.080 (.104)
Financial projections	.522 (.304)	.162** (.056)	.412* (.184)	.090 (.092)
Registered business	.799** (.336)	.265*** (.062)	.695*** (.190)	.450*** (.102)
Gender	.224 (.304)	.099 (.057)	.350 (.195)	.085 (.094)
Race		.004 (.055)		-.206* (.091)
Black	1.132* (.582)		-.273 (.255)	
Asian	-1.868* (.852)		-1.336 (.805)	
Hispanic	-.717* (.380)		-.990** (.328)	
Education				
Some college		.057 (.066)		.113 (.107)
Bachelor's Degree	1.151* (.586)	-.004 (.077)	.635 (.455)	.246* (.125)
Post graduate		.098 (.099)		.613*** (.163)
Net worth	.447** (.189)	.239*** (.036)	-.057 (.127)	.146** (.058)

Industry experience	-.131 (.268)	.132** (.051)	-.174 (.167)	-.057 (.084)
Constant	-.912 (1.288)	.706*** (.232)	-2.089* (.885)	.313 (.380)
<i>N</i>	691	1065	691	416
-2 Log likelihood	375.150		780.042	
Pseudo $R^2$	.120		.074	
$\chi^2$	51.064***		62.761***	
$R^2$		.376		.523
Adjusted $R^2$		.364		.501
<i>F</i> statistic		31.509***		23.193***

Standard errors are in parentheses.

\* Significant at .05 | \*\* Significant at .01 | \*\*\*Significant at .001.

Appendix 1: Item Numbers and Questions from PSED II Survey

<b>Item Number</b>	<b>Source</b>	<b>Question</b>
Q4	Personal savings	What is the dollar amount provided by (you/[NAME]) that came from personal savings (before the business was registered as a [C1])?
Q5	Family & Relatives	What is the dollar amount provided that came from personal loans received by (you/[NAME]) from (your/their)family members and relatives (before the business was registered as a [C1])?
Q6	Friends, employers, & work colleagues	What is the dollar amount provided that came from personal loans received by (you/[NAME]) from (your/their) friends, employers or work colleagues (before the business was registered as a [C1])?
Q7	Credit card	What is the dollar amount provided that came from credit card loans to (you/[NAME]) (before the business was registered as a [C1])?
Q8	Bank or other financial institution	What is the dollar amount provided that came from a personal loan from a bank or some other type of financial institution to (you/[NAME]) (before the business was registered as a [C1])?
Q9	2 <sup>nd</sup> Mortgage or car loan	What is the dollar amount provided that came from an asset backed loan like a second mortgage or car loan to (you/[NAME]) (before the business was registered as a [C1])?
Q10	Other	What is the dollar amount provided by (you/[NAME]) that came from any other sources (before the business was registered as a [C1])?
R6	Asset backed debt	What is the dollar amount of these debts that are backed by assets, such as land, vehicles, or equipment, that could be repossessed if the loan is not paid back?
R7	Leases on property and equipment	What is the dollar amount of the debts that are in the form of leases on property and equipment for the new business after it was registered as a [C1 LEGAL ENTITY]?
R8	Bank line of credit or working capital	What is the dollar amount of the debts that are in the form of a bank sponsored line of credit or working capital loan to the new business (after it was registered as a [C1 LEGAL ENTITY])?
R9	Supplier credit	What is the dollar amount of the debts that represent credit from suppliers for the new business (after it was registered as a [C1 LEGAL ENTITY])?
R10	Personal loans	What is the dollar amount of the debts that are in the form of personal loans you have made to the new business (after it was registered as a [C1 LEGAL ENTITY])?
R11	Team equity	What is the dollar amount of the debts that are in personal loans from other members of the start-up

		team of the new business (after it was registered as a [C1 LEGAL ENTITY])?
R12	Spouses, family, other kin	What is the dollar amount of the debts that are in personal loans from spouses, family members, or other kin of the start-up team of the new business(after it was registered as a [C1 LEGAL ENTITY])?
R13	Loans from employees	What is the dollar amount of the debts that are in personal loans from employees that do not share ownership in the new business (after it was registered as a [C1 LEGAL ENTITY])?
R14	Loans from other individuals	What is the dollar amount of the debts that are in personal loans from other individuals to the new business (after it was registered as a [C1 LEGAL ENTITY])?
R15	Credit card	What is the dollar amount of the debts that are credit card loans to the new business itself (after it was registered as a [C1 LEGAL ENTITY])?
R16	Bank loan	What is the dollar amount of the debts that are bank loans to the new business itself (after it was registered as a [C1 LEGAL ENTITY])?
R17	Venture capital	What is the dollar amount of the debts that are in loans from venture capital firms to the new business (after it was registered as a [C1 LEGAL ENTITY])?
R18	Government agencies (not SBA)	What is the dollar amount of the debts that are from government agencies of any kind, other than SBA guaranteed loans, to the new business (after it was registered as a [C1 LEGAL ENTITY])?
R19	SBA guaranteed bank loans	What is the dollar amount of the debts that are in the form of bank loans guaranteed by the SBA to the new business (after it was registered as a [C1 LEGAL ENTITY])?
R20	Other	What is the dollar amount of the debts that are any other loans or debts for the new business (after it was registered as a [C1 LEGAL ENTITY])?