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INTRODUCTION

In this Article we use data from the Kauffman Firm Survey[1] (KFS) to examine the financing sources and strategies for a large sample of new firms in the United States. Our results reveal that women-owned firms raised smaller amounts of capital to start than men. Women also went on to raise smaller amounts of capital in subsequent years. Finally, our findings reveal that women business owners relied heavily on internal rather than external sources of both debt and equity to finance their firms. This finding may reflect differences in motivation between women and men business owners, differences in their levels of risk aversion, or differences in access to external sources of financing.

I. THE IMPORTANCE OF WOMEN-OWNED FIRMS

Small firms play a key role in the economic growth and vitality of the United States. The U.S. Small Business Administration (SBA) defines a small firm as one that has 500 or fewer employees.[2] Using this definition, 99% of all firms in the United States would be categorized as small businesses.[3] Data compiled by the SBA indicate that there were 26.8 million small firms in this country in 2006.[4] These firms generated over half of the gross domestic product and

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1. The Kauffman Firm Survey, http://www.kauffman.org/kfs (last visited May 13, 2010). The public use data set for the KFS, as well as documentation for the survey, is included on this site.
2. OFFICE OF ADVOCACY, SMALL BUS. ASS'N, FREQUENTLY ASKED QUESTIONS 1 (2009), http://www.sba.gov/advo/stats/sbfaq.pdf [hereinafter FREQUENTLY ASKED QUESTIONS].
3. *Id.*
4. OFFICE OF ADVOCACY, SMALL BUS. ASS'N, THE SMALL BUSINESS ECONOMY FOR DATA YEAR 2006, at iv (2007), http://www.sba.gov/advo/research/sb_econ2007.pdf.

employed half of all private-sector employees.[5] In fact, small firms have been responsible for 60% to 80% of net new jobs.[6] Small firms are also an important source of innovation in the creation of new products, services, and technologies.[7]

Women-owned firms represent a growing component of the small-business sector. According to data from the U.S. Census Bureau, there were 6.5 million privately-held women-owned firms in the United States in 2002.[8] As shown in Table 1, these firms generated an estimated $940 billion in sales and employed 7.1 million people.[9] "Although women-owned firms still comprise a minority of all firms (28 percent), their numbers have been growing rapidly."[10] The number of women-owned firms increased by 19.8% from 1997 to 2002 compared with a growth rate of 10.3% for U.S. firms overall.[11] The number of firms with employees increased 8.3% for women-owned firms and just 4.3% for U.S. firms overall.[12]

Nevertheless, during this same timeframe,

> the revenues for women-owned firms increased by less than 15 percent, compared with 22 percent for all U.S. firms. Similarly, employment by women-owned firms grew by only one percent, compared with a growth rate of 7.2 percent for U.S. firms overall. Finally, payroll grew by 17 percent, compared with 30 percent for U.S. firms overall. These Census Bureau statistics reveal that, while the number of women-owned firms grew more rapidly than the number of firms owned by men, their performance in terms

5. FREQUENTLY ASKED QUESTIONS, *supra* note 2, at 1. R

6. Susan Coleman, *The Impact of Human Capital Measures on the Performance of Women-Owned Small Firms*, J. BUS. & ENTREPRENEURSHIP, Oct. 2005, at 39, *available at* http://findarticles.com/p/articles/mi_qa5424/is_200510/ai_n21364618/?tag=content;col1.

7. *See* FREQUENTLY ASKED QUESTIONS, *supra* note 2, at 1 (stating that small businesses "[h]ire 40 percent of high-tech workers" and "[p]roduce 13 times more patents per employee than large patenting firms"). R

8. U.S. CENSUS BUREAU, SURVEY OF BUSINESS OWNERS—WOMEN-OWNED FIRMS: 2002, http://www.census.gov/econ/sbo/02/womensof.html (last visited May 13, 2010).

9. *See infra* Table 1. Table 1 provides U.S. Census data on the total number of firms as well as the number of women-owned firms in both 1997 and 2002. It also provides data on those firms that actually added employees beyond the firm owner herself.

10. ALICIA M. ROBB & SUSAN COLEMAN, THE KAUFFMAN FIRM SURVEY, CHARACTERISTICS OF NEW FIRMS: A COMPARISON BY GENDER 1 (2009), http://www.kauffman.org/uploadedFiles/kfs_gender_020209.pdf [hereinafter CHARACTERISTICS].

11. *See infra* Table 1.

12. *See infra* Table 1.

of sales, employment, and payroll actually declined for the period of 1997-2002.[13]

"Women own less than 17 percent of firms with employees, employ less than 7 percent of the workforce, and account for just 5 percent of payroll. Women-owned businesses appear to have lost ground over the 1997-2002 period."[14]

Other sources have also suggested that women-owned firms continue to struggle in a variety of areas.[15] "Women-owned businesses tend to be significantly smaller than firms owned by men."[16] "In terms of performance, previous studies have revealed that women-owned firms were more likely to fail, and had lower levels of sales, profits, and employment."[17] As shown in Table 1, women-owned firms generate less than 5% of all firm revenues and less than 4% of revenues from firms with employees.[18] Women-owned firms also "remain heavily concentrated in the service and retail sectors. Because these industries are highly competitive, opportunities for growth and profitability are limited."[19] The National Wo-

13. CHARACTERISTICS, *supra* note 10, at 2. R

14. ALICIA M. ROBB & SUSAN COLEMAN, THE KAUFFMAN FIRM SURVEY, SOURCES OF FINANCING FOR NEW TECHNOLOGY FIRMS: A COMPARISON BY GENDER 1 (2009), *available at* http://www.kauffman.org/uploadedFiles/ResearchAndPolicy/Sources%20of%20Financing%20for%20New%20Technology%20Firms.pdf.

15. *See, e.g.*, Sheila Burt, *Is Not Time to Start a Business?: Women Turn to Others for Advice on Startups in a Jagged Economy*, CHI. TRIB., Jan. 8, 2010, at 2, *available at* 2010 WLNR 399876 (Westlaw) (quoting one woman business owner who "said that in general, women business owners struggle to gain more respect in a still male-dominated corporate world"); Jeff Cornwall, *Small Business Owners Still Struggle with Balance*, ENTREPRENEURIAL MIND, May 25, 2007, http://www.drjeffcornwall.com/2007/05/small-business-owners-still-st.html (last visited May 13, 2010) (stating that women business owners have more trouble achieving work-life balance than male business owners).

16. Susan Coleman, *The Role of Human and Financial Capital in the Profitability and Growth of Women-Owned Small Firms*, 45 J. SMALL BUS. MGMT. 303, 303 (2007).

17. *Id.* at 304 (citing Peter Rosa et al., *Gender as a Determinant of Small Business Performance: Insights from a British Study*, 8 SMALL BUS. ECON. 463, 463-64 (1996); John Watson, *Comparing the Performance of Male- and Female-Controlled Businesses: Relating Outputs to Inputs*, 26 ENTREPRENEURSHIP THEORY & PRAC. 91, 91 (2002)); *see* ROBERT W. FAIRLIE & ALICIA M. ROBB, RACE AND ENTREPRENEURIAL SUCCESS: BLACK-, ASIAN-, AND WHITE-OWNED BUSINESSES IN THE UNITED STATES 71 (2008).

18. *See infra* Table 1.

19. Coleman, *supra* note 16, at 303-04 (citation omitted) (citing Anna Du Rietz & Magnus Henrekson, *Testing the Female Underperformance Hypothesis*, 14 SMALL BUS. ECON. 1, 5-7 (2000); Karen A. Loscocco et al., *Gender and Small Business Success: An Inquiry into Women's Relative Disadvantage*, 70 SOC. FORCES 65, 74 (1991)); *see* Candida G. Brush, *Research on Women Business Owners: Past Trends, a New Perspective, and Future Directions*, 16 ENTREPRENEURSHIP THEORY & PRAC. 5, 13 (1992); Alicia M. Robb, *Entrepreneurial Performance by Women and Minorities: The Case of New Firms*, 7 J. DEVELOPMENTAL ENTREPRENEURSHIP 383, 387 (2002). R

men's Business Council reported in 2007 that 69% of women-owned firms were in the service sector in 2006, while 14.4% were in retail trade.[20]

Access to capital has been a frequently cited problem for women business owners, and a recent study noted that it has been more of a problem during the early stages of a firm's development.[21] Similarly, a study of nascent entrepreneurs observed that those firm owners who actually succeeded were much more likely to have had both personal and external sources of capital to draw upon.[22] A study of over 1,000 Canadian firms found that women were more concerned about access to capital than with any other business problem.[23] A number of studies contend that women-owned firms, consistent with their difficulties in acquiring capital, tend to "under-perform" relative to men-owned firms in measures of size, growth, and profits.[24]

This Article will use data from the Kauffman Firm Survey to compare firm, owner, and financing characteristics by gender. It will compare and contrast the financing sources and experiences of women and men firm owners in order to identify financing gaps, specific financial challenges and constraints, and differences in financing strategy.

II. CHARACTERISTICS OF WOMEN-OWNED FIRMS

Prior research has documented distinct differences in the characteristics of women- and men-owned small firms.[25] A number of studies have noted that women-owned firms are smaller than men-owned firms in terms of sales, assets, and number of employees.[26]

20. NAT'L WOMEN'S BUS. COUNCIL, FACT SHEET: WOMEN BUSINESS OWNERS AND THEIR ENTERPRISES 1 (2007), http://www.nwbc.gov/ResearchPublications/documents/KeyFactsWBOandtheirEnterprises.pdf.

21. Sang-Suk Lee & Diane Denslow, *A Study on the Major Problems of U.S. Women-Owned Small Businesses*, 15 J. SMALL BUS. STRATEGY 77, 84 (2004).

22. Simon C. Parker & Yacine Belghitar, *What Happens to Nascent Entrepreneurs? An Econometric Analysis of the PSED*, 27 SMALL BUS. ECON. 81, 90-93 (2006).

23. Barbara J. Orser et al., *Performance, Firm Size, and Management Problem Solving*, 38 J. SMALL BUS. MGMT. 42, 51 (2000).

24. Rosa et al., *supra* note 17, at 463-64; *see* Robert W. Fairlie & Alicia M. Robb, *Gender Differences in Business Performance: Evidence from the Characteristics of Business Owners Survey*, 33 SMALL BUS. ECON. 375, 375 (2009); Loscocco et al., *supra* note 19, at 65-66; *see also* Robb, *supra* note 19, at 395. **R**

25. Coleman, *supra* note 16, at 303-04. **R**

26. *Id.* at 304; Alicia Robb & John Wolken, *Firm, Owner, and Financing Characteristics: Differences Between Female- and Male-Owned Small Businesses* 15-16 (Fed. Reserve Bd., Working Paper No. 2002-18, 2002), *available at* http://www.federalreserve.

Also, as noted above, the majority of women-owned firms are concentrated in the service and retail sectors.[27] These industries tend to be highly competitive and provide limited opportunities for growth and profits. Conversely, a very small percentage of women-owned firms are in rapid growth or high technology lines of business.[28]

Previous studies have also noted differences between women and men small-business owners. Though well educated on average, women business owners are less likely to have degrees in business or technical fields.[29] Similarly, they have fewer years of prior experience in industry or in managerial roles.[30] In this sense, they have lower levels of human capital than male business owners. The same holds true for levels of financial capital. Prior research indicates that women start their businesses with smaller amounts of capital and are less likely to raise capital from external sources.[31]

Finally, prior research has revealed differences in the motivations and anticipated rewards of business ownership for women and men. Specifically, while men are more likely to be motivated by firm growth and profits, women seek personal fulfillment, flexibility, and a sense of having more control over their destinies.[32] Some researchers have suggested that the desire for control and a higher level of risk aversion leads women business owners to keep their

gov/PUBS/feds/2002/200218/200218pap.pdf; *see* Fairlie & Robb, *supra* note 24, at 376-77. R

27. Alexandra L. Anna et al., *Women Business Owners in Traditional and Non-Traditional Industries*, 15 J. BUS. VENTURING 279, 280-81 (1999); Du Rietz, *supra* note 19, at 4; Arne L. Kalleberg & Kevin T. Leicht, *Gender and Organizational Performance: Determinants of Small Business Survival and Success*, 34 ACAD. MGMT. J. 136, 140 (1991). R

28. Teresa V. Menzies et al., *Examining Venture-Related Myths Concerning Women Entrepreneurs*, 9 J. DEVELOPMENTAL ENTREPRENEURSHIP 89, 92, 102 (2004); Michael H. Morris et al., *The Dilemma of Growth: Understanding Venture Size Choices of Women Entrepreneurs*, 44 J. SMALL BUS. MGMT. 221, 222 (2006).

29. Menzies et al., *supra* note 28, at 95. R

30. Richard J. Boden, Jr. & Alfred R. Nucci, *On the Survival Prospects of Men's and Women's New Business Ventures*, 15 J. BUS. VENTURING 347, 352-53 (2000); Nancy M. Carter et al., *Discontinuance Among New Firms in Retail: The Influence of Initial Resources, Strategy, and Gender*, 12 J. BUS. VENTURING 125, 137 (1997); Fairlie & Robb, *supra* note 24, at 385. R

31. Christina Constantinidis et al., *Financing of Women-Owned Ventures: The Impact of Gender and Other Owner- and Firm-Related Variables*, 8 VENTURE CAPITAL 133, 134-36 (2006); Fairlie & Robb, *supra* note 16, at 385; Barbara J. Orser et al., *Women Entrepreneurs and Financial Capital*, 30 ENTREPRENEURSHIP THEORY & PRAC. 643, 643-45 (2006); Robb & Wolken, *supra* note 26, at 6-7 & tbl.2. R

32. Anna et al., *supra* note 27, at 286; Morris et al., *supra* note 28, at 224-26. R

firms small and manageable.[33] By the same token, women are more likely to avoid external sources of financing, which would force them to give up control and take on higher levels of risk.[34] Taken together, these various characteristics and motivations for women-owned firms may have an effect on the types of capital they seek and are able to obtain.

III. Women-Owned Firms and Financing

A number of studies have examined women business owners' uses of various sources of financing. Prior research suggests that issues exist with both the supply and the demand side of acquisition of capital. Supply side factors would include the preferences of investors for specific types of industries, firms, or entrepreneurs. Conversely, demand-side issues would include the preferences of the entrepreneur for growth, profits, industry sector, risk, and control. In this research, we will address both supply- and demand-side considerations as we examine women entrepreneurs' uses of debt and equity.

A. *Debt Financing*

In the area of debt financing, women continue to report difficulty in securing bank loans and dealing with lenders. This is troubling given that most studies indicate that women are no more likely to be turned down for loans than men. Women were more reluctant to apply, however, and also more likely to anticipate denial. There is also evidence that women apply for significantly smaller loans that may not be sufficient to fund the growth of their firms.[35] This suggests that both supply- and demand-side factors are at work

33. Jennifer E. Cliff, *Does One Size Fit All? Exploring the Relationship Between Attitudes Toward Growth, Gender, and Business Size*, 13 J. Bus. Venturing 523, 535 (1998); Morris et al., *supra* note 28, at 223; Barbara J. Orser & Sandra Hogarth-Scott, *Opting for Growth: Gender Dimensions of Choosing Enterprise Development*, 19 Canadian J. Admin. Sci. 284, 288 (2002). R

34. Constantinidis et al., *supra* note 31, at 134; Ingrid Verheul & Roy Thurik, *Start-Up Capital: "Does Gender Matter?*,*"* 16 Small Bus. Econ. 329, 337 (2001). R

35. Sara Carter & Peter Rosa, *The Financing of Male- and Female-Owned Businesses*, 10 Entrepreneurship & Regional Dev. 225, 229 tbl.1 (1998); Susan Coleman, *Access to Capital and Terms of Credit: A Comparison of Men- and Women-Owned Small Businesses*, J. Small Bus. Mgmt., July 2000, at 37 (2000); Susan Coleman, *Characteristics and Borrowing Behavior of Small, Women-Owned Firms: Evidence from the 1998 Survey of Small Business Finances*, J. Bus. & Entrepreneurship, Oct. 2002, at 151.

in terms of women's ability to obtain and willingness to seek debt capital.

One study of Canadian firms noted that women were less satisfied with their banking relationships, although they were no less likely to be granted loans.[36] Similarly, an article by Walker and Joyner observed that women continue to feel that they are discriminated against in their attempts to secure funding.[37] Using data from the 1998 Survey of Small Business Finances (SSBF), one of the authors of this article validated the observation that women were significantly more reluctant to apply for loans than men in spite of the fact that they were no more likely to be turned down if they did apply.[38] Cole and Mehran found similar results using the 2003 SSBF.[39] Although commercial banks are typically a major source of financing for small firms, only 27% of women-owned firms used them in 1998.[40]

These findings were echoed in a subsequent study by Treichel and Scott using data from three surveys conducted by the National Federation of Independent Business (NFIB).[41] Treichel and Scott's analysis of the different surveys concurred that women were less likely to apply for bank loans although they were no less likely to be approved.[42] Results from an NFIB-member study covering the years 1998-2001 show that firms owned by women were less likely to borrow.[43] They were less likely to have bank loans and to use trade credit but more likely to use credit cards, particularly to finance working capital and capital outlays, than firms owned by men. Similarly, a study by Robb and Wolken found that women

36. Lola Fabowale et al., *Gender, Structural Factors, and Credit Terms Between Canadian Small Businesses and Financial Institutions*, 19 ENTREPRENEURSHIP THEORY & PRAC. 41, 50 (1995).

37. Deborah Walker & Brenda E. Joyner, *Female Entrepreneurship and the Market Process: Gender-Based Public Policy Considerations*, 4 J. Developmental Entrepreneurship 95, 96 (1999).

38. Coleman, *supra* note 35, at 162. R

39. Rebel Cole & Hamid Mehran, Gender and the Availability of Credit to Privately Held Firms: Evidence from the Surveys of Small Business Finances (Fed. Reserve Bank of N.Y., Staff Report No. 383, Aug. 2009), *available at* http://www.newyorkfed.org/research/staff_reports/sr383.pdf.

40. Coleman, *supra* note 16, at 309. R

41. Monica Zimmerman Treichel & Jonathan A. Scott, *Women-Owned Businesses and Access to Bank Credit: Evidence from Three Surveys Since 1987*, 8 VENTURE CAPITAL 51, 57 (2006).

42. *Id.* at 58.

43. JONATHAN A. SCOTT ET AL., CREDIT, BANKS AND SMALL BUSINESS—THE NEW CENTURY 24 & n.2 (2003).

were more likely to borrow through the use of credit cards than men.[44]

Recent studies of bank borrowing by small firms suggest that loan applications may be affected by structural factors such as firm size and industry sector. In a study of Canadian firms, Orser et al. found no difference in the likelihood of seeking debt capital when they controlled for firm size and industry sector. Similarly, women were no less likely to be approved once they had applied for a loan.[45] Constantinidis et al. found differences in both demand- and supply-side patterns when they studied women entrepreneurs in Belgium.[46] Ironically, although 86% of loan requests by women were approved, nearly 50% of the women surveyed indicated they experienced barriers in their attempts to secure loans.[47] When Constantinidis et al. categorized the firms by growth potential, the authors found that women in high-growth or traditionally male-dominated lines of business encountered fewer gender-related barriers to borrowing than women in more traditional service or retail lines of business.[48] Additionally, the authors found a high level of risk aversion in the women entrepreneurs interviewed and concluded that women may choose businesses more suited towards balancing family and work demands.[49] These businesses tend to be smaller firms that are less dependent on external sources of capital.

B. *Equity Financing*

There is considerably less research on women entrepreneurs' use of equity capital. Although women rely heavily on internal sources of equity, only a small percentage of firms actually use external equity in the form of angel investments or venture capital.[50] Chaganti, DeCarolis, and Deeds found that women tend to use internal rather than external sources of equity for their firms.[51] They concluded that the reliance on internal equity hampers women business owners' ability to grow their firms and to introduce new

44. Robb & Wolken, *supra* note 26, at 15. R
45. *See* Orser et al., *supra* note 31, at 658-59. R
46. Constantinidis et al., *supra* note 31, at 153-54. R
47. *Id.* at 142.
48. *Id.* at 144-46.
49. *Id.* at 149.
50. Angel investors are wealthy individuals who invest their own capital in new firms. Venture capitalists are professional fund managers who invest the capital of others in new firms.
51. Rajeswararao Chaganti, Dona DeCarolis & David Deeds, *Predictors of Capital Structure in Small Ventures*, 20 ENTREPRENEURSHIP THEORY & PRAC. 7, 10 (1996).

products and services.[52] In a subsequent study of the financial structure of small firms, Haynes et al. found that women business owners with families had lower levels of income and owned firms with lower levels of equity than men.[53] These findings were echoed in a study by Carter et al. using a sample of over 200 women business owners.[54] They found that only 17% of their sample had any type of equity investment.[55]

The authors of the Diana Project[56] found that between 1953 and 1998, less than 5% of total venture-capital funding went to women-owned firms.[57] They concluded that this low level of funding was at least partially due to the relatively small number of women employed in the venture-capital industry. Becker-Blease and Sohl surveyed angel-investor portals and found that only 9% of the proposals received were from women entrepreneurs compared to the 91% from men.[58] Women were, however, significantly more likely to apply for funding to angel networks having a higher proportion of women angel investors.[59] This suggests that women entrepreneurs' willingness to apply for external equity may be suppressed by the relatively small number of women who are capable of being investors.

One consensus arising from several studies examining women entrepreneurs' use of both debt and equity is that, whatever the source of capital, women do not raise enough of it. This lack of capital depresses their ability to grow and increases the risk of financial distress if the firm does not have sufficient liquidity to weather periods of adversity. Amatucci and Sohl did a series of in-depth interviews with women entrepreneurs who used angel invest-

52. *Id.* at 16.

53. George W. Haynes et al., *The Differences in Financial Structure Between Women- and Men-Owned Family Businesses*, 21 J. FAM. & ECON. ISSUES 209, 221 (2000).

54. Nancy M. Carter et al., *Women Entrepreneurs Who Break Through to Equity Financing: The Influence of Human, Social, and Financial Capital*, 5 VENTURE CAPITAL 1, 12 (2003).

55. *Id.* at 17.

56. The Diana Project is a multi-university research program to identify factors that support and enable high growth in women-led ventures. Diana Project, http://www.dianaproject.org (last visited May 3, 2010).

57. CANDIDA BRUSH ET AL., THE DIANA PROJECT: WOMEN BUSINESS OWNERS AND EQUITY CAPITAL: THE MYTHS DISPELLED 2-3 (2001), *available at* http://ssrn.com/abstract=1262312.

58. John R. Becker-Blease & Jeffrey E. Sohl, *Do Women-Owned Businesses Have Equal Access to Angel Capital?*, 22 J. BUS. VENTURING 503, 511 (2007).

59. *Id.* at 515-16.

ments.[60] In general, the women indicated their wish to have sought funding sooner and to have raised more money. In a study of Norwegian firms, Alsos et al. found that women applied for significantly smaller amounts of capital than men.[61] Thus, although they were just as likely to apply for and receive loans, they did not raise enough capital to fund the growth of their firms. In a study of U.S. firms, Treichel and Scott also found that women-owned firms applied for significantly smaller loans than men, even controlling for other factors.[62]

Taken together, these studies point to continued difficulty on the part of women entrepreneurs in accessing both debt and equity sources of capital. Further, they suggest constraints and barriers in dealing with the providers of those sources of capital.

IV. Data

The Kauffman Firm Survey (KFS) is a survey of new businesses in the United States. This survey collected information on 4,928 firms that started in 2004 and went on to survey them regularly in subsequent years.[63] This cohort is the first large national sample of firm startups to be tracked over time. These data contain detailed information on both the firm and up to ten business owners per firm. In addition to the 2004 baseline-year data, three years of follow-up data (2005-2007) are now available. Additional years are planned. Detailed information on the firm includes industry, physical location, employment, profits, intellectual property, and financial capital (equity and debt) used at start-up and over time. Information on up to ten owners includes age, gender, race, ethnicity, education, work experience, and previous start-up experience. The detail provided by these data allows us to compare the financial strategies and the use of both debt and equity for new women- and men-owned firms from 2004 through 2007.[64] A data subset of firms reporting for all three years and on firms verified as going out of

60. Frances M. Amatucci & Jeffrey E. Sohl, *Women Entrepreneurs Securing Business Angel Financing: Tales from the Field*, 6 VENTURE CAPITAL 181, 187-89 (2004).

61. Gry Agnete Alsos et al., *New Venture Financing and Subsequent Business Growth in Men- and Women-Led Businesses*, 30 ENTREPRENEURSHIP THEORY & PRAC. 667, 680-81 (2006).

62. Treichel et al., *supra* note 41, at 61. **R**

63. JANICE BALLOU ET AL., THE KAUFFMAN FIRM SURVEY: RESULTS FROM THE BASELINE AND FIRST FOLLOW-UP SURVEYS 3 (2008), *available at* http://ssrn.com/abstract=1098173.

64. A public use dataset is available for download from the Kauffman Foundation's website, and a more detailed confidential dataset is available to researchers

business in either 2005 or 2006 is used in this research. This reduces the sample size to 4,159 businesses. The method for assigning owner demographics at the firm level was first to define a primary owner. For firms with multiple owners (35% of the sample), the primary owner was designated by the largest equity share. In cases where two or more owners owned equal shares, hours worked and a series of other variables were used to create a rank ordering of owners to define a primary owner.[65] Firms with a female primary owner are classified as women-owned firms. Multi-race/ethnic owners are classified into one race/ethnicity category based on the following hierarchy: black, Asian, other, Hispanic, and white. For example, an owner was defined as black, even if that individual was also Hispanic. As a result of the ordering, the white category includes only non-Hispanic white owners.[66]

Table 2 provides descriptive statistics, by primary owner gender, for various sources of equity and debt used at startup in 2004, the baseline year.[67] It reveals that roughly the same percentage of women and men used equity (80%) and debt (55%) for initial capital injections. Nevertheless, the specific sources differed by gender. Consistent with prior research, the vast majority of both women and men used internal rather than external equity to finance their firms. About 80% of women used internal equity while only 8.2% used external equity. Further, the major sources of external equity for women were funds provided by either a spouse or a parent. Only a very small percentage of women used outside equity investors (1.5%) or venture-capital financing (0.2%). Although men were more likely than women to use external equity during the first year of operation (10.2% vs. 8.2%), the percentages were still very low.[68]

Table 2 also reveals that a higher percentage of women than men used personal rather than business debt to finance their firms (49.7% vs. 20.9%).[69] Major sources of funding were personal credit-card balances (32.7%), personal bank loans (15.8%), business credit-card balances in the owner's name (13.4%), and family

through a data enclave provided by the National Opinion Research Center (NORC). This paper uses the confidential version of the dataset.

65. *See* BALLOU ET AL., *supra* note 63, at 15-18. R

66. *Id.* at 2.

67. *See infra* Table 2.

68. *See infra* Table 2.

69. *See infra* Table 2.

loans (10.7%).[70] Conversely, only 5.3% of women had bank loans for the firm, and only 4.9% had a line of credit.[71] Although the percentage of business debt was higher for men-owned firms (25.6% vs. 20.9%), it also reveals minimal use of bank financing.[72] This finding is consistent with prior research that attests to the difficulties faced by smaller and newer firms in their attempts to secure external sources of capital.[73]

In addition to providing information on sources of debt and equity for the baseline year, Table 2 also provides similar data for 2005 and 2006, which reveal similar patterns.[74] Both women and men were more likely to use internal rather than external sources of equity; outside investors and venture-capital funding continued to be minimal. Similarly, both men and women continued to be more reliant on personal debt rather than business debt. Nevertheless, by 2006, almost twice as many men used bank loans for the business or lines of credit than women. It is noteworthy that for 2004, 2005, and 2006, credit cards, either personal or business, were the major source of debt financing for both women and men.[75]

Table 3 sheds further light on the amounts of debt and equity used by new firms.[76] It reveals that women used dramatically lower amounts of total capital, debt, and equity to start their firms than men. Mean amounts of start-up capital in the baseline year (2004) were $55,410 for women compared with $82,632 for men. The differences are even more dramatic when we look at external sources of capital. Men used more than twice as much business debt to establish their firms as women ($21,885 vs. $9,312), while women were more reliant on owner or personal debt. Similarly, men used almost three times the amount of external equity as women ($11,224 vs. $3,196).[77] The fact that women business owners start their firms with much smaller amounts of capital may have implications for their ability to hire employees, develop new products and services, grow, or even survive.

As with Table 2, a similar pattern persists in 2005 and 2006.[78] In both years, women raised roughly half of the amount of incre-

70. *See infra* Table 2.
71. *See infra* Table 2.
72. *See infra* Table 2.
73. Lee, *supra* note 21, at 85. R
74. *See infra* Table 2.
75. *See infra* Table 2.
76. *See infra* Table 2.
77. *See infra* Table 2.
78. *See infra* Table 2.

mental financing that men did. The discrepancies are even more extreme when we examined the categories of business debt and external equity, where the amount of new capital raised by women was closer to one-third of that raised by men. To summarize, for the first three years of operation, women-owned firms raised an average of approximately $120,000, compared with more than $200,000 for firms owned by men. Similarly, women raised a total of $26,000 in business debt and $8,000 of external equity, compared with $64,000 in business debt and $26,000 of external equity for men.[79]

Our review of Tables 2 and 3 suggests differences in the financing sources and strategies of women- and men-owned firms. Specifically, women appear to start their firms with much smaller amounts of capital than men, and women are more likely to rely on internal rather than external sources of capital. Beyond those differences, only a small percentage of either women or men used external capital in the form of business loans, lines of credit, angel investments, or venture capital. These findings suggest the possibility of both supply- and demand-side constraints on new firms in general and on new women-owned firms in particular.

The fact that so few firms, male or female, use external sources of business debt or equity suggests constraints on supply, possibly driven by the high risk and potential for failure among newer firms. The fact that women-owned firms start their firms with dramatically less capital than men suggests constraints on demand. As suggested by prior research, women may be more risk averse than men,[80] or they may be more motivated to start smaller firms that will allow them to balance the demands of work and family.[81] Alternatively, women may experience subtle forms of discrimination or difficulty in securing access to networks used by providers of external capital.[82]

79. *See infra* Table 3.

80. *See* Cliff, *supra* note 33, at 528; Constantinidis et al., *supra* note 31, at 148. R

81. *See* Richard J. Boden, Jr., *Flexible Working Hours, Family Responsibilities, and Female Self-Employment: Gender Differences in Self-Employment Selection*, 58 AM. J. ECON. & SOC. 71, 79 (1999); Brush, *supra* note 19, at 19-20. R

82. *See* Candida G. Brush et al., *The Role of Social Capital and Gender in Linking Financial Suppliers and Entrepreneurial Firms: A Framework for Future Research*, 4 VENTURE CAPITAL 305, 316-17 (2002); Susan Marlow & Dean Patton, *All Credit to Men? Entrepreneurship, Finance, and Gender*, 29 ENTREPRENEURSHIP THEORY & PRAC. 717, 721-22 (2005).

CONCLUSION

In this Article we have provided a preliminary examination of differences in new firm financing by gender using data from the Kauffman Firm Survey, a longitudinal survey of nearly 5,000 new firms in the United States. Results reveal that, consistent with prior research, women started their firms with significantly less capital than men, and women raised significantly smaller amounts of follow-up capital, both debt and equity. Our findings show that women relied more heavily on personal rather than external sources of financing. In fact, by the third year of operation, approximately twice as many men were using external debt, such as bank loans for the business or lines of credit, as women, although a low percentage of both women and men used external equity.

Prior research has suggested both supply-side and demand-side constraints on women's access to capital. In terms of supply-side constraints, investors may choose to avoid newer firms in general, because they lack a track record and have a greater risk of failure. Supply-side constraints could also include investors' preferences for certain types of businesses or subtle forms of discrimination that exclude women from networks that could provide them access to capital.

The fact that women in this study raised substantially less capital and relied heavily on personal sources of debt and equity may also be evidence of demand-side constraints. Prior research attests to a higher level of risk aversion on the part of women, a preference for smaller firms that allow for work and family balance, and a desire to maintain control. These motivations may cause women to start smaller firms requiring smaller amounts of capital that can be supplied by personal rather than external sources. Whatever the cause, the fact that women use dramatically smaller amounts of start-up capital and rely on personal rather than external sources has implications for their ability to develop new products and services, grow their firms, hire employees, and survive periods of adversity.

This study lays the groundwork for further research on gender differences in financing sources and strategies. First, with regard to the possibility of both supply- and demand-side constraints on women's access to capital, further study is needed to determine precisely why women use the financing sources they do and why they avoid or are discouraged from others. Further research could also shed light on whether women raise smaller amounts of capital because they do not feel they need it or, alternatively, because they are unable to get it. A second possible direction for further research would be an examination of the link between financing sources, strategy, and firm outcomes in the form of sales, profits, growth, and employment. Specifically, are women at a disadvantage in terms of performance outcomes because of the financing sources and strategies they use? These preliminary results are intended to lay the groundwork for these important questions.

TABLE 1
U.S. NONFARM FIRMS BY GENDER AND OWNERSHIP, 1997 AND 2002

As Published	All Firms: Firms (Number)	All Firms: Receipts (Millions of dollars)	Firms with paid Employees: Firms (Number)	Firms with paid Employees: Receipts (Millions of dollars)	Firms with paid Employees: Employees (Number)	Firms with paid Employees: Annual payroll (Millions of dollars)
Women-owned firms						
2002[1]	6,489,483	940,775	916,768	804,097	7,146,229	173,709
1997[2]	5,417,034	818,669	846,780	717,764	7,076,081	149,116
growth (percent)	19.8%	14.9%	8.3%	12.0%	1.0%	16.5%
All U.S. firms						
2002	22,974,685	22,627,167	5,524,813	21,859,758	110,786,416	3,813,488
1997	20,821,934	18,553,243	5,295,151	17,907,940	103,359,815	2,936,493
growth (percent)	10.3%	22.0%	4.3%	22.1%	7.2%	29.9%
2002 percent of total U.S. firms						
Women-owned	**28.2**	**4.2**	**16.6**	**3.7**	**6.5**	**4.6**

[1] 2002 Survey of Business Owners, Women-Owned Firms.
[2] 1997 Survey of Women-Owned Business Enterprises.

Source: OFFICE OF ADVOCACY, U.S. SMALL BUS. ADMIN., WOMEN IN BUSINESS: A DEMOGRAPHIC REVIEW OF WOMEN'S BUSINESS OWNERSHIP 14 tbl.8 (2006), *available at* http://www.sba.gov/advo/research/rs280tot.pdf.

Table 2
New Firm Financing by Primary Owner Gender
Kauffman Firm Survey (Percent of Active Firms)

	Baseline 2004		First Follow Up 2005		Second Follow Up 2006	
	Female	Male	Female	Male	Female	Male
Total Equity	80.5%	80.1%	47.3%	50.1%	45.4%	40.4%
Total Debt	55.5%	55.7%	51.6%	55.6%	49.3%	58.4%
Inside Equity (Owner(s))	79.8%	79.1%	46.6%	47.8%	42.9%	38.2%
Outside Equity	8.2%	10.2%	4.5%	6.9%	6.0%	5.5%
Spouse Equity	2.1%	1.5%	1.1%	1.1%	0.9%	1.2%
Parent Equity	3.4%	3.5%	2.1%	2.4%	2.6%	1.4%
Angel Financing	1.5%	3.2%	1.1%	2.1%	1.6%	1.5%
Other Business Equity	0.3%	1.5%	0.6%	1.7%	0.8%	1.5%
Venture Capital Equity	0.2%	0.6%	0.2%	0.6%	0.0%	0.5%
Owner Debt (Used Resp. Debt)	49.7%	47.2%	64.9%	63.9%	62.5%	66.7%
Personal Credit Card Balances	32.7%	27.6%	27.7%	25.6%	22.5%	24.5%
Bank Loans	15.8%	17.5%	9.6%	10.6%	10.2%	11.9%
Business Credit Card Balances	13.4%	14.2%	21.5%	22.5%	23.3%	26.7%
Family Loan	10.7%	9.4%	8.3%	7.5%	6.5%	8.0%
Other Loan	1.5%	2.2%	0.9%	1.5%	0.5%	1.6%
Other Debt	0.9%	1.4%	0.8%	0.9%	0.6%	0.6%
Total Business Debt	20.9%	25.6%	23.3%	29.8%	22.8%	32.3%
Business Credit Card Balances	10.7%	11.9%	15.5%	17.3%	15.8%	19.4%
Bank Loan	5.3%	6.6%	4.0%	6.7%	3.8%	6.9%
Credit Line	4.9%	5.4%	5.1%	8.7%	6.7%	11.3%
Non Bank Loan	0.7%	2.0%	1.2%	1.6%	0.9%	1.8%
Family Loan	2.6%	3.1%	2.4%	2.8%	1.9%	2.7%
Owner Loan	1.4%	1.5%	1.5%	1.1%	0.5%	0.8%

Source: Tabulations of the Kauffman Firm Survey Confidential Microdata

TABLE 3
NEW FIRM FINANCING BY PRIMARY OWNER GENDER KAUFFMAN FIRM SURVEY

	Baseline 2004		First Follow Up 2005		Second Follow Up 2006	
	Female	Male	Female	Male	Female	Male
Total Financial Capital	$ 55,410	$ 82,632	$ 34,813	$ 64,242	$ 32,778	$ 62,013
Total Debt	$ 30,510	$ 41,488	$ 22,625	$ 39,598	$ 22,904	$ 42,662
Owner Debt	$ 21,198	$ 19,603	$ 14,926	$ 19,460	$ 13,693	$ 19,172
Business Debt	$ 9,312	$ 21,885	$ 7,699	$ 20,138	$ 9,211	$ 23,490
Equity Investment	$ 23,865	$ 38,797	$ 12,078	$ 24,952	$ 9,812	$ 18,874
Internal Equity	$ 21,704	$ 29,920	$ 8,831	$ 15,735	$ 7,908	$ 12,949
External Equity	$ 3,196	$ 11,224	$ 3,357	$ 8,909	$ 1,966	$ 6,402
Leverage Ratios						
Debt/Equity	127.8%	106.9%	187.3%	158.7%	233.4%	226.0%
Debt/Total FK	55.1%	50.2%	65.0%	61.6%	69.9%	68.8%
Internal Equity/Total FK	39.2%	36.2%	25.4%	24.5%	24.1%	20.9%
External Eq/Total FK	5.8%	13.6%	9.6%	13.9%	6.0%	10.3%

Source: Tabulations of the Kauffman Firm Survey Confidential Microdata