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## CONFIDENCE AND ANGEL INVESTORS: DOES GENDER MATTER?

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# CONFIDENCE AND ANGEL INVESTORS: DOES GENDER MATTER?

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## ABSTRACT

We investigate whether men and women angel investors have different levels of confidence based on participation in the angel capital market, rate of investments, and stage of investments. We find evidence consistent with women angels having lower levels of confidence compared to men, although we do not suggest that this difference is deleterious for women angel investor's wealth. However, women entrepreneurs, who disproportionately seek funding from women angels, may have more restricted access to early-stage capital than men.

## INTRODUCTION

In this paper, we investigate the investment patterns of men and women angels from the perspective of confidence. Recent empirical evidence suggests that women investors have lower levels of confidence than men investors and as a result, invest differently (Barber & Odean, 2001), and Harrison and Mason (2007) present suggestive evidence that women angels invest at a lower rate than do men among angel investors in the U.K. We investigate whether men and women angels differ in their levels of confidence in a large sample of U.S.-based angel investors between 2000 and 2006. The primary implication of different levels of confidence in the angel capital market is that women investors will be less willing to invest compared to men investors, and women will tend to invest in later stage investments. Given the extant homophily in the angel market, different confidence levels could lead to women entrepreneurs having impeded access to equity capital relative to men.

## HYPOTHESIS DEVELOPMENT

Angels and venture capitalists are predominantly cashed-out entrepreneurs and successful business executives. However, this success can lead to overconfidence. Gervais and Odean (2001) develop a model in which attribution bias, or the tendency to associate previous success with personal skill and previous failures with external factors such as luck, leads successful investors to become overconfident.<sup>1</sup> Given the past success of most early-stage investors as entrepreneurs and managers, it is plausible that overconfidence exists, and is indeed even prevalent among venture capitalists and angel investors. Overconfidence among angel investors has not been explored in the literature. Women are reported to have lower confidence in "male-oriented" tasks including mathematics (Janman, 1987; Mura, 1987), physics (Keys & Ormerod, 1976), spatial tasks (Gitelson, Petersen & Tobin-Richards, 1982; Rosenfield & Stephan, 1978), and business (Prince, 1993; Barber & Odean, 2001). This tendency of lower confidence is easily understood within the context of the Gervais and Odean (2001) model if, as Beyer and Bowden (1997) suggest, women begin with a lower degree of attribution bias than men, especially regarding historically male-oriented tasks.<sup>2</sup> The authors argue that if women begin with lower confidence in their ability to succeed at male-oriented tasks and women have lower attribution bias, then high performance will be attributed to "unstable causes" such as luck or effort, while poor performance, which is consistent with expectations, will be attributed to lack of ability. By comparison, men will overly

associate superior performance to personal ability and poor performance to unstable causes. As a result, women will possess lower levels of overall confidence in male-oriented tasks than do men. Among angel investors, lower confidence on the part of women angel investors will lead to a lower investment rate and more reluctant participation, *ceteris paribus*, relative to men.

Different levels of confidence can manifest in at least three ways among angels. More confident investors will perceive more viable investment opportunities because they perceive that they have a greater ability to identify promising ventures. Indeed, Camerer and Lovo (1999) show that overconfidence leads to excess market entry. If men and women angels have different levels of confidence, then, *ceteris paribus*, they will become angel investors at different rates. This leads to our first testable hypothesis:

*Hypothesis 1: Men angel investors will outnumber women angel investors.<sup>3</sup>*

Similarly, if men and women angels differ in confidence and therefore the perception of their ability to identify profitable investment opportunities, then this will manifest in men angels perceiving more investment opportunities than women and thus our second testable hypothesis:

*Hypothesis 2: Women angel investors invest at a lower rate than do men angel investors.*

Confidence also affects the perceived amount of information necessary in order to identify a promising venture. The more confident the investor, the greater is their perceived private information or their ability to correctly analyze available public information. The quantity of information regarding angel investments can be measured by the stage at which the investment is made. Thus, less confident investors are more likely to invest at later stages when more information is available compared to more confident investors. This leads to our third testable hypothesis:

*Hypothesis 3: Women angels invest at later stages than do men angels*

## **DATA AND METHODOLOGY**

The most complete database of angel portals in the U.S. is collected by The Center for Venture Research. This database is based on annual surveys distributed to angel portals beginning in 2000. We provide descriptive statistics of the angel portals in Table 1 and refer the interested reader to Becker-Blease and Sohl (2007) for a more complete description of the data collection techniques employed in the construction of the database. Response rates to the questionnaire range from 21% in 2005 to 27% in 2000 and 2001 and the number of respondents range from 33 in 2004 to 47 in 2000 and 2001. Responses were received from portals across a wide range of geographic areas and portals of different ages. Thus, the sample results are likely representative of the larger portal population.

## **RESULTS**

In this section, we report the results of analyses of our three hypotheses. In Table 2, we report characteristics of the angel investors themselves. Consistent with the predictions of hypothesis 1, and similar to the anecdotal and empirical evidence reported in Greene et al. (2001), Brush et al. (2001), Hudson, Kenefake and Grinstead (2006), Harrison and Mason (2007), and Becker-Blease and Sohl (2007), we find that a substantially higher proportion of angels are men compared to women. Women comprise only a small fraction of the angels within most portals, ranging from a

median of 3.33% in 2002 to 9.30% in 2006. Women angels comprise 50% or more of angel investors within a given portal in only 12 of the 230 portal-years in which we have data, or 5.2%. The sample contains women-only angel portals in four of the seven sample years. All women-only angel portals within our sample explicitly and exclusively target women entrepreneurs for funding.

Within our sample, we define two groups of portals based on the median proportion of women angels across all portals during a given sample year. We rely on proportions to account for the different sizes of portals and median values because mean values are skewed by the existence of all-women angel portals. During each sample year, we compare the portal's reported proportion of women angels to the median proportion across all portals. If the portal contains the median proportion or more of women angels, we consider the portal to have a high relative proportion of women angels (*High Prop*) and those with relatively low proportion to be *Low Prop*. If women angel investors, on average, have fewer resources with which to enter the angel market, we would expect that the overall portfolio value of High Prop portals will be significantly less than for Low Prop portals (reflecting the more restricted resources). However, within our sample, we find no difference at standard levels between High Prop and Low Prop portfolio value sizes. We interpret this as consistent with men and women having equal amounts to invest and therefore not the explanation for the different participation rates between women and men. Thus, our evidence supports hypothesis 1 that women participate in the angel market at a lower rate than do men.

### Univariate Analysis

Our second hypothesis is that women angel investors invest at a lower rate than do men angel investors. We provide univariate analysis for this hypothesis in Table 3. During each sample year, we count the number of funded and non-funded proposals for High Prop and Low Prop portals. This permits us to populate a 2x2 matrix of High (Low) Prop against funded (*F*) and not-funded (*NF*) proposals. Based upon hypothesis 2, we predict that angel portals with a high proportion of women angels will invest in a significantly lower proportion of deals compared to portals with a high proportion of men angels. Basing our analysis on proportions accounts for the different number of proposals submitted to different portals. We then calculate  $\chi^2$  statistics for equality of proportions. Panel A of Table 3 reports these results.

We find a significant difference in annual acceptance rates during five of the seven sample years between High and Low Prop portals, with High Prop portals having a lower acceptance rate. In the last column, we aggregate the data across all years and find that overall, this same pattern persists. On average, High Prop portals accept 14.22% of proposals compared to 18.35% for Low Prop portals.

Greene et al. (2001), Harrison and Mason (2007) and Becker-Blease and Sohl (2007) suggest that homophily is an important force in the angel capital market. Becker-Blease and Sohl also find that women entrepreneurs only submit a fraction of proposals to portals and submit these disproportionately to High Prop portals. In addition, they present limited evidence of homophily in the awarding of angel capital. If angels are more likely to provide funding to entrepreneurs of the same sex, then the different demographics of the submitting entrepreneurs may explain the different acceptance rates by high and low proportion angel portals. A natural test for this possibility is to separate the proposals into two groups based on the sex of the entrepreneur and test the acceptance rates by High and Low Prop portals. We do this and report the results in Panels B and C of Table 3.

The results, in general, are similar to those reported in Panel A. Of the proposals submitted by

women entrepreneurs, High Prop portals accept 14.19%, compared to 23.56% by Low Prop portals. For proposals brought forth by men entrepreneurs, High Prop portals accept 14.22% of these proposals while Low Prop portals accept 18.35%. Thus, the pattern of a lower acceptance rate by High Prop portals exists for both men and women business-owners.

### Multivariate Analysis of Investment Rate

Greene et al. (2001) report that women entrepreneurs are concentrated in the service and retail sectors that often do not offer the high growth potential early-stage investors seek. If women entrepreneurs have a greater propensity to submit non-high growth proposals such as for retail-oriented businesses to angel portals, then given homophily in the seeking process, High Prop portals may receive a disproportionate number of unattractive retail proposals. We control for this by including the variable *Retail*, which is the proportion of all funding provided that is awarded to retail ventures.<sup>4</sup>

If women entrepreneurs start ventures with fewer resources and have greater difficulty securing alternative forms of early capital (Goffee & Scase, 1983; Buttner & Rosen, 1988; Fay & Williams, 1993; Riding & Swift, 1990; Coleman, 2000; Greene et al., 2001; Brush et al., 2002), then they may submit earlier-stage proposals than men, which are less likely to receive funding. Again, given homophily in the seeking process, this pattern could result in High Prop portals receiving a disproportionate number of very early stage proposals and thus result in a higher rejection rate. We control for this possibility by including the variable *Early Financing*, which is the proportion of funding provided to entrepreneurs coded as “seed”, “start-up”, or “early-stage”.

High Prop portals may also have access to different levels of resources, notably investable funds, compared to Low Prop portals. Although we find no univariate difference in invested funds between High and Low Prop portals within our sample, it remains unclear how this factor will behave in a multivariate setting. To control for investable funds, we include the variable *Log(Total Portal Investments)*, which is the natural log of the product of the average investment made by the portals and the total number of investments made. We anticipate a positive relation between this variable and High Prop. An additional explanation for differences in investment rates is differences in the quality of proposals received. To control for this within the multivariate setting, we include the variable *Log (Total Number of Angels)*, based on the contention that the greater is the number of angels, the larger is the network from which proposals will be submitted, and therefore the greater variation among proposals and the greater the incidence of proposals perceived to be of poor quality.<sup>5</sup>

We report the coefficient estimates in model (1) of Table 4. The dependent variable is *Yield*, defined as the ratio of the number of proposals funded to the number of proposals made and our test variable is High Prop.<sup>6</sup> In addition to the controls discussed above, we also include annual indicator variables to control for temporal patterns. As predicted by hypothesis 2, we find a negative relation between Yield and High Prop. Having a high proportion of women angels reduces the probability of acceptance by 7.81%, consistent with women angels investing at lower rates than do men angels. Three of the four control variables enter the regression with significant coefficients at standard levels. Portals with more resources to invest are more likely to accept proposals although the greater the number of angels, the lower is the acceptance rate. The proportion of funded deals that are in retail is marginally negative, with one-tail significance.

In the second model, we include two additional controls for which we have more limited data. First, the amount of funding sought may negatively affect the probability of acceptance. If High Prop portals systematically receive requests for high levels of funding, which is possible if women

entrepreneurs who are most likely to apply to High Prop portals require more resources, then, *ceteris paribus*, one would expect a lower acceptance rate. To control for this possibility, we include *Log (Average Funding Requested)*.

Second, it is possible that women angels invest at a lower rate not because they have less confidence, but because they have lower risk tolerances. Jianakoplos and Bernasek (1998) contend that women investors, in general, are more risk averse than men, and supporting empirical evidence is presented by Bajtelsmit and Bernasek (1996), Powell and Ansic (1997), Grable (2000), and Grable and Joo (2000). However, contradictory evidence of no sex differences is reported in Grable and Joo (1999) and Ackert, Church and Englis (2002). We have no direct measure of risk-tolerance and instead rely on the average months of scrutiny prior to investment. We contend that more risk-averse investors will take longer to review a given proposal than more risk-tolerant investors.<sup>7</sup> We include the variable *Average Months Proposals Evaluated* to capture this possibility.

We report the coefficient estimates of this model in regression (2). We lose 46 observations due to missing data, but consistent with the results in regression (1), we find that High Prop portals fund at a lower level. Early Financing and *Log(Average Funding Requested)* enter the model with one-tailed significance and *Log(Total Portal Investments)* and *Log(Total Number of Angels)* remain significant predictors. Risk-tolerance does not appear to explain observed investment patterns.

In addition, we explore different dimensions of the rate at which proposals are accepted to gain a better understanding of the importance of homophily and the sex of the angel in the investment decision. In regression (3), we define the dependent variable *WOB Yield* as the ratio of the number of women-owned-businesses (WOBs) proposals funded to the total number of proposals submitted. This allows us to reexamine the result from the previous section that High Prop portals are both less likely to fund proposals from women and men entrepreneurs. As an additional control variable, we include *Women Seek Rate*, which is the proportion of all deals submitted that were submitted by WOBs, given that, on average, the higher the submission rate by women entrepreneurs, the higher will be the acceptance rate. We are missing data for 9 portals, reducing the sample size from 184 to 175.<sup>8</sup>

Consistent with earlier results, we find that High Prop portals fund a lower proportion of proposals. The only control variable with significance at standard levels is *Women Seek Rate*, which as predicted, is positive. However, within the sample are 5 observations of women-only angel portals, which exclusively fund WOBs. In regression (4), we remove these 5 observations and although the explanatory power of the model falls, as expected, the effect of having a high proportion of women angels remains. In regression (5), we re-estimate regression (4) but change the dependent variable to the yield on men-owned-businesses (*MOBs*). Similar to our earlier regression results and the results from the previous section, we find that High Prop portals fund at a lower level for both *MOBs* and *WOBs*.

In regression (6), we explore the role of homophily in the awarding process. We define *WOB Success* as the proportion of all funded proposals that were received from *WOB's*. Strong evidence of sex-based homophily among women would be evidenced by a positive relation between High Prop and *WOB Success*. Our results suggest that the proportion of funded proposals that go to *WOB's* is not positively associated with a high proportion of women angels capitalists participating in the portal. Thus, overall, our evidence is consistent with the second hypothesis that women angels invest at a lower rate than do men angels. In the next section, we investigate

the third hypothesis of whether women angels invest in later-stage investments compared to men.

### **Multivariate Analysis of Stage of Investment**

We investigate the relation between stage of investment and high proportion of women angels in a multivariate setting. We define the dependent variable as the proportion of funded proposals that are not “seed” or “start-up” funding. Hypothesis 3 suggests a positive relation between the presence of women angels and the later the stage of investments. In regression (1) we include only *Log(Total Portal Investments)* and *Log(Total Number of Angels)* control variables, in addition to annual dummies. As predicted, we find a positive coefficient on High Prop, although based on the F-statistic and p-value, the model specification is not significant at standard levels. In regression (2), we include *Retail*. Retail proposals are more likely to be single-stage later proposals rather than exploratory seed funding. As predicted, the coefficient on Retail is positive suggesting that retail investments are later stage investments. The test variable, High Prop, remains significant and positive and the explanatory power of the model improves. Overall, these results are consistent with hypothesis 3 and suggest that women angels invest, on average, in later stage investments.

### **DISCUSSION AND CONCLUSIONS**

The results of this study indicate that men and women angels invest at different rates. Compared to women, men are more likely to participate in the angel market, invest in earlier-stage projects and accept a greater proportion of proposals. These results are consistent with men investors having greater confidence compared to women. We are unable to test whether the level of confidence for either men or women is indicative of over-confidence, but the difference is consistent with other extant evidence of excessive confidence on the part of investors, especially men. Given that women angels invest at a lower rate than do men, this has important implications for women entrepreneur’s access to angel capital. The evidence of homophily in the seeking process for capital suggests that women entrepreneurs are more likely to seek capital from women investors. If women investors invest at a lower rate and women are more likely to seek capital from other women, this suggests that women entrepreneurs will have more restricted access to capital, *ceteris paribus*, than men. Limited resources limit the opportunity for entrepreneurship (Romanelli, 1989).

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### **NOTES**

1. Evidence of wide-spread attribution bias is found in Wolosin, Sherman and Till (1973), Langer and Roth (1975), Miller and Ross (1975), among others.

2. Overconfidence is related to poor calibration, in that overconfident investors overestimate the quantity and/or precision of their knowledge or the likelihood of favorable future events. Attribution bias is bias in the assignment of causes for either success or failure between personal skill and external factors such as luck.

3. Greene et al. (2001), Brush et al. (2001), Hudson, Kenefake and Grinstead (2006), Harrison and Mason (2007), Becker-Blease and Sohl (2007), and Sohl and Hill (2007) either report or suggest that men angels substantially outnumber women angels and we therefore accept that some may consider this question answered. However, to our knowledge, the question of the representation of men and women in the angel capital market has never been investigated based upon a theoretically predicted difference.

4. The Center for Venture Research database does not contain the proportion of retail proposals submitted. We therefore elect to use the proportion of retail proposals funded assuming that portals that make frequent retail investments are more likely to receive a high proportion of retail proposals.

5. An equally plausible interpretation is that a greater number of angel investors will increase the likelihood that an entrepreneur will find a willing investor. Therefore, we make no strong predictions on the sign on this coefficient.

6. *High Prop* is defined here as a dummy variable, taking the value of 1 if the portal is High Prop, 0 otherwise.

7. We find weak univariate evidence that High Prop portals review proposals for less time, on average, than Low Prop portals. There is no difference at standard levels between the average number of months review for High and Low Prop portals, and one-tailed significance between the High Prop median number of months (3) and the Low Prop median number of months (4).

8. To retain as many degrees of freedom as possible, we remove  $\text{Log}(\text{Average Funding Requested})$  and  $\text{Average Months Proposals Evaluated}$  from this regression specification. High Prop remains negative when we include these variables in Models 3 through 6.

9. Dependent variables are all defined at the portal-level and include *Yield*, which is defined as the ratio of all proposals funded to the total proposals submitted; *WOB(MOB) Yield*, which is the ratio of number of women(men)-owned-business proposals funded to the total proposals submitted; and *WOB Success*, which is the ratio of number of women-owned-business proposals funded to the total number of proposals funded. The test variable is *High Prop*, which is an indicator variable taking the value of 1 if the portal has a proportion of women angel investors to all angel investors at least equal to the median for the entire sample, 0 otherwise; *Retail*, which is the proportion of all funding provided by the portal made to retail-oriented business plans; *Early Financing*, which is the proportion of all funding provided by the portal made to businesses in the “seed”, “start-up”, or “early” stages;  $\text{Log}(\text{Total Portal Investments})$  is the natural log of the total value of financing provided by the portal during the fiscal year;  $\text{Log}(\text{Total Number of Angels})$  is the natural log of the count of all angels involved in the portal during the year;  $\text{Log}(\text{Average Funding Requested})$  is the natural log of the total amount requested from the portal during the year; *Average Months Proposals Evaluated* is the average number of months between the proposal first being presented and the actual transfer of funds to the entrepreneur; *Women Seek Rate* is the proportion of all deals submitted that were submitted by WOBs. *Data Limited to Non-All-Women portals* indicates whether the sample eliminated those portals years for portals that are comprised by all women.



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**Table 1: Questionnaire Response Rates and Descriptive Statistics**

	2000	2001	2002	2003	2004	2005	2006
Surveys Mailed	174	174	170	101	127	159	174
Completed Responses	47	47	45	36	33	34	45
Response Rate (%)	27	27	26	36	26	21	26
Total Number of Proposals Received	2268	2958	2470	1319	902	816	1023
Total Number of Proposals Funded	455	258	172	121	159	168	205
Proportion Funded (%)	20.1	8.7	7.0	9.2	17.6	20.6	20.0
Average Number of Funded Deals per Portal	15.7	8.1	4.1	3.8	5.0	4.9	4.7
Average Amount Invested per Deal (\$K)	777	806	505	310	386	268	409
Average Total Investment by Portal (\$MM)	12.2	6.5	2.1	1.2	1.9	1.3	1.9
Length of Review (months)	3.8	4.5	3.6	4.6	4.2	3.4	na
<u>Stage of Investment</u>							
Seed (%)	17.2 (15.0)	17.3 (17.5)	10.8 (0.0)	14.0 (0.0)	10.5 (0.0)	16.2 (0.0)	9.7 (0.0)
Start-Up (%)	35.7 (37.5)	36.3 (37.5)	35.7 (45.0)	38.0 (33.0)	34.3 (25.0)	36.1 (31.7)	36.4 (41.5)
Early-Stage (%)	34.3 (37.5)	34.2 (37.5)	33.3 (33.0)	34.7 (29.0)	42.7 (50.0)	38.7 (31.5)	40.2 (38.0)
Expansion (%)	6.7 (0.0)	6.4 (0.0)	15.8 (0.0)	10.8 (0.0)	7.5 (0.0)	5.7 (0.0)	13.2 (0.0)
Later-Stage (%)	3.5 (0.0)	0.8 (0.0)	4.3 (0.0)	2.5 (0.0)	4.8 (0.0)	0.0 (0.0)	0.5 (0.0)

**Table 2: Descriptive Statistics of Angel Investor Portals and Sponsored Deals**

Data From The Center for Venture Research Between 2000 and 2006.

	2000	2001	2002	2003	2004	2005	2006
Total Number of Angels	4,150	5,021	2,896	2,049	2,623	1,685	2,074
Total Number of Women-Angels	416	511	173	458	131	146	286
Women-Angels per Portal							
Mean	10.7	13.1	7.2	13.1	4.3	4.3	6.4
Median	2.0	4.0	1.0	3.0	2.0	3.0	3.0
Min	0	0	0	0	0	0	0
Max	85	160	100	100	50	30	350
Proportion of Women-Angels per Portal							
Mean (%)	11.13	11.13	7.60	21.41	6.24	13.11	15.67
Median (%)	6.67	6.67	3.33	7.14	5.03	7.77	9.30
Min (%)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Max (%)	97.70	97.65	100.00	100.00	16.67	100.00	100.00

**Table 3: Analysis of Frequency and Proportions for Men- and Women-Owned Business Proposals**

Frequency and proportions of men- and women-owned business proposals receiving funding based on the proportion of women angels within the angel portal. *High (Low) Prop* denotes angel portals with greater (less) than median proportion of women-angels based on annual data presented in Table 5. *Yield-High (Low)* is the proportion of total deals submitted overall (Panel A), by women (Panel B), and by men (Panel C) within the *High Proportion (Low Proportion)* categories that receive funding. *F* and *NF* denote funded and not-funded proposals, respectively. Chi-square tests of equality of proportions and (p-values) are presented.

Panel A: Funding of All Business Proposals																
	2000		2001		2002		2003		2004		2005		2006		Overall	
	F	NF	F	NF	F	NF	F	NF	F	NF	F	NF	F	NF	F	NF
High Prop	114	583	135	746	60	769	56	519	54	372	110	467	143	600	672	4055
Low Prop	111	318	100	581	100	888	56	221	132	349	58	179	62	218	619	2754
Yield-High	16.36		15.34		7.24		9.74		12.68		19.06		19.25		14.22	
Yield-Low	25.87		16.58		10.12		20.22		27.44		24.47		22.14		18.35	
X <sup>2</sup>	15.05		0.13		4.67		17.79		30.22		3.00		1.07		25.13	
(p-value)	(0.000)		(0.719)		(0.031)		(0.000)		(0.000)		(0.083)		(0.302)		(0.000)	
Panel B: Funding of Women-Owned Business Proposals																
	2000		2001		2002		2003		2004		2005		2006		Overall	
	F	NF	F	NF	F	NF	F	NF	F	NF	F	NF	F	NF	F	NF
High Prop	11	66	17	106	7	96	3	73	3	16	16	40	24	93	81	490
Low Prop	8	13	10	27	8	51	4	7	3	26	8	9	4	13	45	146
Yield-High	14.29		13.82		6.80		3.95		15.79		28.57		20.51		14.19	
Yield-Low	38.10		27.03		13.56		36.36		10.34		47.06		23.53		23.56	
X <sup>2</sup>	5.958		3.536		2.042		13.648		0.311		2.02		0.08		9.11	
(p-value)	(0.014)		(0.060)		(0.153)		(0.000)		(0.577)		(0.0155)		(0.775)		(0.003)	
Panel C: Funding of Men-Owned Business Proposals																
	2000		2001		2002		2003		2004		2005		2006		Overall	
	F	NF	F	NF	F	NF	F	NF	F	NF	F	NF	F	NF	F	NF
High Prop	103	517	118	639	53	673	53	446	51	356	94	427	119	507	591	3565
Low Prop	103	305	90	554	92	837	52	214	129	323	50	170	58	205	574	2608
Yield-High	16.61		15.59		7.30		10.62		12.53		18.04		19.01		14.22	
Yield-Low	25.25		13.98		9.90		19.55		28.54		22.73		22.05		18.04	
X <sup>2</sup>	11.443		0.716		3.454		11.678		33.137		2.17		1.08		19.68	
(p-value)	(0.001)		(0.398)		(0.063)		(0.001)		(0.000)		(0.141)		(0.300)		(0.000)	

**Table 4<sup>9</sup>: Regression Analysis of Successful Funding Requests**

	Dependent Variable					
	(1)	(2)	(3)	(4)	(5)	(6)
	Yield	Yield	WOB Yield	WOB Yield	MOB Yield	WOB Success
High Prop	-0.0781** (0.0359)	-0.0843* (0.0462)	-0.0165*** (0.0061)	-0.0174*** (0.0060)	-0.0509* (0.0293)	-0.0296* (0.0168)
Retail	-0.1818 <sup>a</sup> (0.1258)	-0.1781 (0.1511)	-0.0076 (0.0209)	-0.0070 (0.0206)	-0.1449 (0.1249)	0.0275 (0.0577)
Early Financing	0.0826 (0.0735)	0.1233 <sup>a</sup> (0.0937)	0.0073 (0.0123)	0.0073 (0.0121)	0.0708 (0.0734)	0.0021 (0.0338)
Log (Total Portal Investments)	0.0703*** (0.0151)	0.0939*** (0.0211)	0.0002 (0.0026)	0.0007 (0.0026)	0.0761*** (0.0155)	-0.0023 (0.0074)
Log (Total Number of Angels)	-0.0606*** (0.0215)	-0.0685*** (0.0276)	-0.0030 (0.0035)	-0.0030 (0.0035)	-0.0633*** (0.0211)	-0.0034 (0.0097)
Log (Average Funding Requested)		-0.0541 <sup>a</sup> (0.0372)				
Average Months Proposals Evaluated		0.0057 (0.0108)				
Women Seek Rate			0.2249*** (0.0210)	0.2183*** (0.0243)	-0.4543*** (0.1471)	0.9756*** (0.0683)
Annual Indicators	Yes	Yes	Yes	Yes	Yes	Yes
F-Statistic	3.28	2.60	11.13	8.23	3.44	18.64
(p-value)	(0.000)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)
Adj-R <sup>2</sup> (%)	11.03	12.20	38.89	31.48	13.45	55.02
Number Observations	184	138	175	170	170	170
Data Limited to Non-All-Women Portals?	No	No	No	Yes	Yes	Yes

<sup>a</sup> denotes one-tailed significance at the 10% level. \*\*\*, \*\*, \* denote two-tailed significance at the 10%, 5%, and 1% levels.

**Table 5: Regression Analysis of Later Stage Funding**

Dependent variable is proportion of deals that are not “seed” or “start-up”. The test variable is *High Prop*, which is an indicator variable taking the value of 1 if the portal has a proportion of women angels to all angels at least equal to the median for the entire sample, 0 otherwise; control variables include *Retail*, which is the proportion of all funding provided by the portal made to retail-oriented business plans; *Log(Total Portal Investments)* is the natural log of the total value of financing provided by the portal during the fiscal year; *Log(Total Number of Angels)* is the natural log of the count of all angels involved in the portal during the year; Each regression also includes annual indicator variables, and White-corrected standard errors are reported in parentheses.

	(1)	(2)
High Prop	0.099** (0.049)	0.107** (0.049)
Retail		0.395** (0.179)
Log (Total Portal Investments)	-0.008 (0.022)	-0.008 (0.022)
Log (Total Number of Angels)	-0.027 (0.031)	-0.030 (0.030)
Annual Indicators	Yes	Yes
F-Statistic	1.67	1.87
(p-value)	(0.107)	(0.059)
Adj-R <sup>2</sup> (%)	1.96	4.01
Number Observations	184	182
Data Limited to Non-All-Women Portals?	No	No

\*\*\*, \*\*, \* denote two-tailed significance at the 10%, 5%, and 1% levels.