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**Just the two of us, we can('t) make it if we try:
Owner-CEO gender and discouragement**

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Abstract

Research suggests that women are more discouraged from applying for a loan than men. Using cross-country data, we find that discouragement prevails only among woman-led firms with a higher share of woman owners, challenging the trend to promote gender diversity.

JEL Codes: G21, G34, J16.

Keywords: gender, access to credit, borrower discouragement.

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1. Introduction

Achieving gender equality in corporate leadership and governance processes contributes to driving women's empowerment. However, despite a growing number of women-led firms, several studies reveal that women still experience more difficulties in doing business and raising external funding than their counterparts (e.g., [Asiedu et al., 2013](#)). Moreover, [Ongena and Popov \(2016\)](#) show that women CEOs exhibit greater reluctance to apply for a loan, i.e., higher discouragement, arguably due to their fear of denial (see [Naegels et al., 2021](#)). Research supporting these divergences suggests that these differences in preferences arise from women's greater risk aversion (see [Croson and Gneezy, 2009](#)). However, little is known about how the corporate environment of a woman CEO, and more precisely firm ownership, shapes her attitude toward loan providers.

[Harjoto et al. \(2018\)](#) demonstrate that board diversity, including gender diversity, results in higher risk aversion, due to women's intrinsic risk aversion. Following this result, [Chatjuthamard et al. \(2021\)](#) document that board gender diversity leads to a reduction in managerial risk-taking in the sense that women directors' risk aversion exacerbates CEOs' risk aversion. Similarly, [Barber and Odean \(2001\)](#) show that woman leaders are less confident in their own ability than men such that they are more likely to be influenced by their corporate environments.

Thus, we expect that risk aversion can be transmitted from the woman owners of a firm to the CEO. The presence of a woman owner can lead to an increase in discouragement by exacerbating the CEO's risk aversion. Moreover, if the CEO is also a woman, the discouragement observed may dramatically increase.

We posit that a higher share of woman ownership increases the likelihood of being discouraged in general and exacerbates woman-led firms' discouragement. We test these hypotheses with a pooled cross-sectional dataset of 7,371 firms from 52 countries between 2013 and 2019.

Our results suggest that discouragement is reinforced by women owners only if the CEO is a woman. These findings contribute to the literature in multiple respects. First, we add to the literature on corporate ownership diversity by suggesting a novel channel whereby women affect corporate decision-making. Second, we identify a distinct moderating mechanism that effectively increases the prominence of woman-owned enterprises' discouragement.

The paper proceeds as follows. In section 2, the methodology and the data employed are explained. Section 3 presents the results. Finally, the article ends with relevant conclusions.

2. Data and methodology

We use firm-level data from the World Bank Enterprise Survey. This dataset includes different waves of single-country surveys covering a broad range of business environment topics, including access to credit. The survey targets registered firms with at least five employees. The final sample consists of 7,371 firms from 52 countries from 2013 to 2019.

Discouragement implies that a firm might not apply for credit despite needing it. We construct a dummy variable, namely *Discouraged*, following [Rostamkalaei et al. \(2020\)](#). A firm is discouraged (*Discouraged* = 1) if it needed credit but did not apply, and non-discouraged if it applies (*Discouraged* = 0).

To test our hypothesis, we run a probit regression with *Discouraged* as the dependent variable. The key independent variables are CEO gender (*Woman CEO*), a dummy variable equal to one if the firm's ownership¹ is composed of more than 50% women (*Majority Own. Women*) and their interaction. We add a set of control variables and fixed effects.² Table 1 displays the list of variables with their definitions and descriptive statistics. Standard errors are clustered by country.

3. Results

Table 2 displays our results.³ In column 1, *Woman CEO* is positive and significant, highlighting that women CEOs are more discouraged than men. Interestingly, *Majority Own. Women* is also positive and significant, i.e., when we have more than 50% of woman owners, the probability of being discouraged also increases. In column 2, the interaction term between *Woman CEO* and *Majority Own. Women* is positive and significant. When the CEO is a woman, the probability of being discouraged increases when more than 50% of a firm's owners are women. Looking at the marginal effect, this probability increases by 8.3%. Hence, we confirm that the ownership structure of a firm significantly impacts the decision-making process of its woman CEO. Furthermore, we contribute to the debate on gender behavioral bias by showing that women's discouragement appears to be significant for firms with

¹ Ownership is defined here as the percentage of equity owned, whatever the type of equity.

² We test several combinations of fixed effects; all results are the same and available.

³ For the sake of brevity, we do not display all control variables. Full results are available upon request.

women-oriented ownership. As such, we shed light on the importance of considering the ownership composition of a firm when studying gender differences. In columns 3 and 4, we split our sample based on the country income to control for credit market development. Interestingly, we observe that our results are only true for high-income countries. This result suggests that ownership structure has a greater effect on discouragement in countries where banking systems are more developed.

We run several robustness tests to evaluate the validity of our results (table 3). First, [Kon and Storey \(2003\)](#) provide a stricter definition of discouraged borrowers that includes only creditworthy individuals. We follow [Petersen and Rajan \(1994\)](#) and restrict our sample to firms with an existing line of credit, which signals that a bank has already analyzed the firms' creditworthiness (column 1). Second, the Enterprise Survey contains a question about the truthfulness of respondents. To ensure the quality of our results, we restrict our sample to respondents considered truthful according to the survey (column 2). In column 3, we control for the potential for self-selection using the probit self-selection (PSS) model ([Léon, 2015](#)). Finally, we remove sole-ownership firms to ensure that our results are not biased by the presence of companies where the CEO is also the unique owner (column 4). We observe that our interaction term remains positive and significant in all specifications, reinforcing our conclusions.

4. Conclusion

This paper investigates the influence of woman owners on discouragement in general and, more precisely, when the CEO is also a woman. Our estimations suggest that the presence of women among the owners of a firm leads to discouragement only for woman CEOs. In line with the literature, we speculate that women in ownership convey a part of their risk aversion to the CEO, which leads to a higher discouragement if the CEO is already risk averse. Our results challenge the policies implemented in several EU countries to promote gender equality in business environments. Motivated by the observation that women are dramatically marginalized in top leadership positions, these countries are calling for greater woman representation ([Adams and Funk, 2012](#)). In this paper, we provide new insights into the potential consequences this approach may have on firms' management.

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Table 1 - Definitions and descriptive statistics of variables

This table presents the definitions and descriptive statistics of all the variables used in the regressions.

Variable	Definition	Mean	Std. Dev.
Discouraged	=1 if the firm needed credit and refused to apply for bank credit and 0 if the firm needed credit and applied.	0.418	0.493
Woman CEO	=1 if the firm's top manager is a woman, 0 otherwise.	0.356	0.479
Majority Own. Women	=1 if the firm's ownership is composed of at least 50% women, 0 otherwise.	0.462	0.499
<i>Control variables</i>			
Size	Number of permanent full-time employees.	124.961	606.598
Age	Firm age in years.	52.486	247.108
Manager Experience	Manager experience in years.	20.740	23.901
Sole Ownership	=1 if the firm has only one owner, 0 if it has more.	0.287	0.452
Limited Corp.	=1 if the firm is a limited corporation, 0 otherwise.	0.154	0.361
Obstacle	=1 if the firm considers that access to finance is a "major obstacle" or a "very severe obstacle", 0 otherwise.	0.276	0.447
Certified	=1 if the firm's annual financial statements are checked or certified by an external auditor.	0.542	0.498
Saving Account	=1 if the firm has a checking or savings account, 0 otherwise.	0.915	0.278
Export	=1 if the firm is a direct exporter (i.e., more than 10% exports in its sales), 0 otherwise.	0.998	0.049
Foreign own.	=1 if the firm has a foreign owner, 0 otherwise.	0.074	0.262
Inflation	Rate of inflation.	5.696	7.565
Financial Development	Domestic banking credit to the private sector, as a share of GDP.	48.313	30.604
Rule of law	Index used to measure perceptions related to the extent to which people have confidence in and abide by the rules of society.	-0.269	0.573
GII	Gender Inequality Index, which measures inequalities in relation to human development.	0.365	0.151
WBL Index	Index capturing the legal inequalities between men and women.	76.713	14.202

Table 2 - Estimations

This table presents the results of the main estimations. The dependent variable is *Discouraged*. Columns 1 and 2 display our main estimations. In columns 3 and 4, we split the sample depending on the income level of the country. All the models contain our control variables, presented in table 1, and country, year and sector fixed effects; standard errors are clustered by country. P-values are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels.

	Main		High-Income	Emerging
	(1)	(2)	(3)	(4)
Woman CEO	0.030** (0.019)	0.012 (0.529)	-0.062 (0.377)	0.017 (0.384)
Majority Own. Women	0.023* (0.075)	0.013 (0.368)	0.049 (0.244)	0.008 (0.591)
Woman CEO x Majority Own. Women		0.030*** (0.003)	0.032** (0.016)	0.030 (0.229)
Observations	7,371	7,371	509	6,862
Pseudo R ²	0.266	0.266	0.244	0.257
Marginal effect		0.083		

Table 3 – Robustness tests

This table presents the results of the robustness tests. The dependent variable is *Discouraged*. In column 1, we display the results for people with a line of credit. Column 2 shows the results for people who are considered truthful in their responses. Column 3 displays the results for the probit self-selection model, and finally, column 4 provides the results without firms with only one owner. All the models contain our control variables, which are presented in table 1, and country, year and sector fixed effects; SE are clustered by country. P-values are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels.

	Line of Credit	Truthful	PSS	W/O Sole
	(1)	(2)	(3)	(4)
Woman CEO	-0.035 (0.672)	-0.040 (0.547)	-0.048 (0.469)	-0.051 (0.402)
Majority Own. Women	0.064 (0.310)	0.107** (0.038)	0.053 (0.311)	0.064 (0.310)
Woman CEO x Majority Own. Women	0.007** (0.048)	0.228*** (0.007)	0.048** (0.043)	0.006** (0.045)
Observations	5,356	6,763	7,374	6,476
Pseudo R ²	0.188	0.242	-	0.235