

Women Running for Office Are Less Risk Averse Than Men.

Evidence From Portugal*

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Abstract

Prior work shows that women are, on average, more risk averse than men. This evidence has been used to theorize about gender differences in elite behavior. However, whether differences in risk aversion hold among the subset of citizens willing to run for office remains an open question. We report a pre-registered experiment with parliamentary candidates in Portugal and find that women candidates are less risk averse than men candidates. This effect is driven by risk preferences in public investments and is not explained by gender differences in political experience. The findings are consistent with a process of gendered (self-)selection where women risk-takers are disproportionately attracted to enter a men-dominated career and run for office. Despite requiring future validation in different contexts, the evidence highlights the challenges of extrapolating from citizen samples to study elite behavior and suggests that risk perceptions are a relevant supply-side determinant of women representation.

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Prior research uncovered robust gender differences in risk preferences. Meta-analyses of over 150 studies in psychology and economics reveal that women, on average, are less likely to take risks than men (Eckel and Grossman, 2008*b*; Charness and Gneezy, 2012). Existing evidence comes from convenience as well as nationally representative samples and covers a broad range of decisions, from financial investments to physical activities.

These patterns have been used to explain differences in the behavior of policymakers. Gender differences in risk preferences may account for the negative relationship between women representation and corruption (Esarey and Schwindt-Bayer, 2018; Pereira and Fernandez-Vazquez, 2022), government instability (Krauss and Kroeber, 2021), or party cohesion in roll call votes (Dingler and Ramstetter, 2021). The perception that women legislators are more averse to risk is also prevalent among voters (Barnes and Beaulieu, 2019; Armstrong et al., 2022). Gender differences in risk preferences among elected officials may have other substantial consequences for policymaking. Risk aversion is associated with support for redistributive policies (Alesina and La Ferrara, 2005), participation in costly political activities (Kam, 2012), support for the status quo (Morgenstern and Zechmeister, 2001; Morisi, 2018), differences in foreign policy making (Kowert and Hermann, 1997), or susceptibility to framing effects (Kam and Simas, 2012).

However, whether women politicians are indeed more averse to risk than men in similar roles remains an open question. Due to the challenges of eliciting individual attitudes from public officials, existing scholarship relies on indirect evidence from non-elite samples. There are reasons to believe that studies on risk preferences from the general public may not extrapolate to the subset of citizens willing to run for office. Gender differences in risk profiles are contextual. Managerial and professional business positions constitute an exception to the general pattern of greater risk aversion among women (Croson and Gneezy, 2009). In a survey of Swedish CEOs and board members, Adams and Funk (2012) find that women are even more willing to take risks than men. A similar phenomenon has been observed for competitiveness and (over)confidence in contexts traditionally less open to women (Nekby,

Thoursie and Vahtrik, 2008). Politics, likewise, remains a male-dominated environment, with implications for recruitment, perceptions of political efficacy, and political ambition. Women in leadership positions are often held to different standards (Kaslovsky and Rogowski, 2022; O’Brien, 2015). Consequently, women are more selective in choosing when to run for office (Fulton et al., 2006; Lawless, 2015), and those who run end up outperforming men in both qualifications and performance across different activities (Bauer, 2020; Besley et al., 2017; Holman and Mahoney, 2022). This gendered political pipeline suggests the possibility that public office is disproportionately occupied by more risk-prone women.

Research Design

To study gender differences in risk attitudes among political elites, we fielded a pre-registered experiment with party list candidates for the national parliament in Portugal ($N = 348$).¹ The survey was embedded in wave 3 of the Comparative Candidates Survey (Freire, Queiroga and Serra-Silva, 2021). The sample reflects the demographic diversity of Portuguese Members of Parliament (MPs) and includes candidates from all major parties with parliamentary seats at the time of the study (Table B1).² Our focus on candidates is an added strength of the study. It allows us to overcome issues of statistical power in a context where parliament is relatively small (230 seats), while guaranteeing a sample with both high levels of political ambition and varying levels of experience in political office.

We elicited risk preferences using a version of the survey instrument developed by Eckel and Grossman (2008a). We presented candidates with a hypothetical scenario where they received a prize of €100,000 and have to decide how to invest it. Each investment option includes a high and a low payoff, with equal probability. The key fact is that the options with the highest expected payoff also have the highest risk: wider variance between high/low payoffs. Table B2 shows the expected payoffs for all investment choices. More risk averse

¹The response rate for the survey was 27.7%.

²The sample includes a disproportionate number of subjects from left-leaning parties. Following the pre-analysis plan, the main analyses include party fixed effects that account for this ideological imbalance.

candidates should opt for investments with lower expected payoffs but also lower risk. Following the dominant view in the literature, our main hypothesis is that women running for office are more averse to risk than men candidates. Additionally, we randomly assigned candidates to one of two scenarios: (1) an investment with public funds where we ask candidates to make a decision as public administrators; or (2) a personal investment where candidates make a decision as private citizens. We included this manipulation to add heterogeneity to the setting. As candidates for public office, we are mainly interested in their behavior as policymakers. However, risk preferences may vary by context (Dohmen et al., 2011) and our design allows us to test whether candidates’ gender predicts risk preferences independent of the type of investment. Box 1 presents the wording from the public investment scenario (see Appendix A for the full instrument). In both cases, the funds are provided exogenously.³

We measure risk aversion with two complementary outcomes. *Holdout* is a binary variable that takes the value of 1 if a candidate rejects any of the options involving risk, and 0 otherwise. This measure captures the willingness of candidates to accept any risk. *Risk Level*, in turn, is an ordinal variable that captures the amount invested. The measure ranges from 1 (€0 invested) to 6 (€100,000 invested) in constant increments of €20,000.⁴

We estimate the effects of gender on both measures of risk attitudes in linear regressions with a set of pre-registered covariates. The models reported below account for investment type, experience in office (years), incumbency status, education levels, and include party fixed effects.⁵ The same results are obtained in unadjusted models (Table C2).

³Existing work suggests that individuals can be less averse to risk when making decisions for others, arguably because personal stakes are lower (Polman and Wu, 2020). Although this is not the focus of the present study, in order to avoid HARKing – Hypothesizing After the Results are Known (Kerr, 1998) – we also pre-registered a prediction about the effects of investment type: that politicians would be more willing to take risks in the public investment scenario. We find no evidence that investment type has a causal effect on risk preferences, as reported in Table 1.

⁴Only the outcome *Risk Level* was included in the pre-analysis plan. However, *Holdout* is easier to interpret and the conclusions remain unchanged once we exclude this outcome.

⁵In Table C3, we also control for candidates’ age. The main results remain unchanged.

Box 1: Public investment vignette

Imagine that you are the administrator of a public agency and the agency received a prize of €100,000 from the European Union. Shortly after receiving the prize, the agency receives the following financial offer to invest the money obtained:

- There is a 50% chance of doubling the money within two years.
- It is equally possible (with 50% chance) that you lose half of the amount invested.

The agency has the opportunity to invest the full amount won in the prize, part of the amount, or to reject the offer. As an administrator, what share of the prize would you invest in this financially risky yet lucrative investment?

- €100,000
- €80,000
- €60,000
- €40,000
- €20,000
- None, The public agency should decline the offer

Results

In Table 1 we report the main results from the study. We measure the effects of candidates' gender on (1) the decision to holdout of the investment (Model 1); and (2) on the amount invested (Model 2). As described above, larger amounts invested had more risk (a wider gap between the high and low payoff) but also higher expected payoffs.

The results are consistent across outcome variables and suggest that women candidates are *less* risk averse than men candidates. According to Model 1, women candidates were on average 15.4 percentage points less likely to holdout from the investment. This result holds while accounting for investment type. The gender differences in the propensity to holdout are substantively meaningful and represent a change of 27.4% relative to the sample mean.⁶

The model predicting the level of risk accepted for the investment leads to the same

⁶Overall, 56.3% of the candidates in the sample held out from the investment: $0.154/0.564 = 0.274$.

Table 1: Gender differences in risk aversion.

	Holdout	Risk Level
	(1)	(2)
Woman	−0.154*** (0.054)	0.287** (0.138)
Personal investment	−0.068 (0.052)	0.0001 (0.135)
Experience in office	0.002 (0.005)	0.007 (0.012)
Education	0.006 (0.023)	−0.029 (0.060)
Incumbent	0.046 (0.062)	−0.125 (0.159)
Constant	0.802*** (0.203)	0.566 (0.522)
Party FEs	Yes	Yes
Observations	348	348
R ²	0.080	0.047

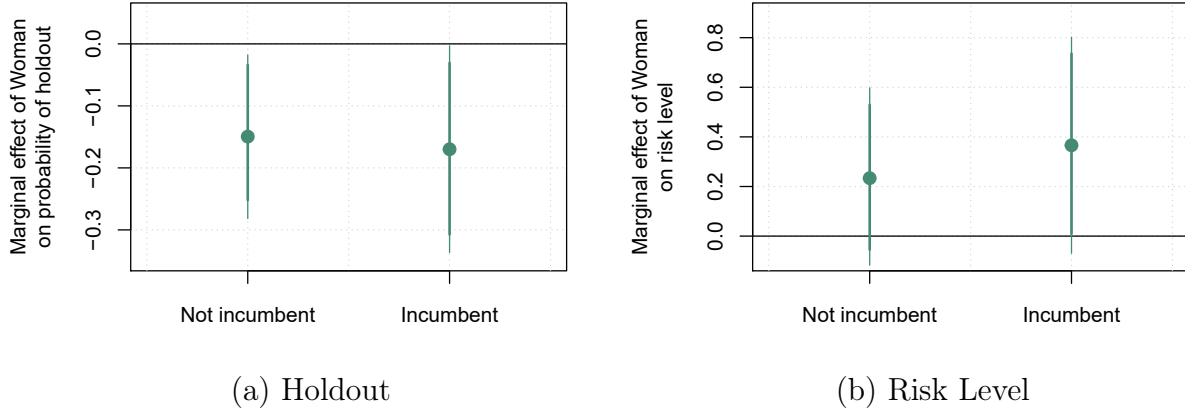
Note: Entries are coefficients (standard errors) of linear models on the effects of candidates' gender and type of investment on (1) the probability of holding out and (2) on risk level. Full model results in Table C1. *p<0.1; **p<0.05; ***p<0.01

conclusions (Model 2). On average, *Risk Level* was 0.29 units higher for women running for office (s.e. = 0.14; p-value = 0.04). The gender differences are moderate in magnitude, equivalent to 0.23 standard deviations. Together, the analysis shows that women in a sample of party list candidates for national office in Portugal were less averse to risk than men candidates. The results depart from existing evidence in non-elite samples (Charness and Gneezy, 2012).⁷

But what may explain the complete reversal in gender differences between prospective legislators and the general public? We consider two possible mechanisms: (1) women's adaptation to the occupational norms that prevail in men-dominated contexts; and (2) gendered

⁷In Table C4 we report the effects of gender on risk preferences among candidates willing to accept some level of risk (43.8% of the sample; N = 154). The coefficient for Woman remains positive but is smaller and indistinguishable from zero (0.10; p-value = 0.59). This result, although underpowered, suggests that the gender differences uncovered in the full sample may rest around the decision to incur in any level of risk.

Figure 1: The effects of gender on risk preferences, by incumbency status



Note: Points are estimates of gender differences in the probability to holdout (panel a) and in risk level (panel b), by incumbency status. Thinner/wider vertical bars are 95/90% confidence intervals derived from linear regressions with the same specification of the main models. Full model results in Table C5.

(self-)selection mechanisms that make risk-prone women systematically more likely to seek public office (Croson and Gneezy, 2009; Adams and Funk, 2012). We explore the first potential mechanism by examining whether incumbency status — holding political office at the time of survey — modifies gender differences in terms of risk aversion. Figure 1 provides the coefficient plots for the interaction between gender and incumbency status in models otherwise identical to those reported above. We find that the relationship between gender and risk preferences is substantively the same among candidates with and without experience in office.⁸ The results in panel (a) also show women candidates without experience were significantly less likely to holdout from the investment than men candidates without experience (-0.15 ; p -value = 0.03). Despite the loss in statistical power, the gender differences uncovered in the full sample hold for the subset of candidates without prior experience in national office. Together, these results lend greater credence to a gendered selection mechanism: women who seek political office appear to be less averse to risk than those in the general population, and the same selection process does not occur among men candidates.

⁸Likewise, in the supplementary appendix (Table C6), we show that the gender gap in risk aversion is not modified by the number of years spent as members of parliament.

Finally, we explore whether the type of investment moderates gender differences in risk preferences. The main results show that men candidates are more averse to risk despite the type of investment (see Table 1). Still, the implications for policymaking are less meaningful if this result is driven mainly by preferences of candidates in the private investment setting. The exploratory analyses reported in Figure ?? suggest that the opposite is true. Gender differences in risk preferences are mainly driven by candidates in the public investment setting. This pattern requires further inquiry but is consistent with recent findings from a non-elite sample pointing to women’s elevated risk taking when deciding for others (Andersson et al., 2020). A possible explanation is that gender norms and socialization lead women to more risk averse personal decisions (Booth, Cardona-Sosa and Nolen, 2014), but this mechanism does not extend to decisions made on behalf of others.

Discussion

Our findings suggest that, among candidates for political office in Portugal, women are less risk averse than men. This result holds independently of candidates’ educational attainment, incumbency status, experience in office, party, and whether the decision scenario comports risks for self or for others. We also found that this gender gap is unaffected by incumbency status or experience in office. The findings are therefore consistent with Bernhard and de Benedictis-Kessner (2021): women candidate’s lower risk aversion suggests that many women may select out of competing altogether compared to similar men.

To our knowledge, this is the first study directly eliciting risk preferences among candidates for political office. As such, we interpret the evidence not as the final word on the subject, but as a first step to understand the complex relationship between gender and risk preferences in public office. Whether the findings hold in other contexts remains to be examined. First, while we rely on a well established instrument to elicit risk preferences, Eckel and Grossman’s gamble-choice task is not comprehensive and focus narrowly on financial

matters. Prior work shows that “risk attitudes are strongly but not perfectly correlated across contexts” (Dohmen et al., 2011, 524). Hence, future work with politicians should explore risk preferences in other policymaking dimensions, such as coalition negotiations or roll-call voting. There is also a lack of consensus about the definition of loss aversion, a related concept that may have consequences to the study of gender differences (Bouchouicha et al., 2019). Furthermore, by relying on ‘house money’ in the survey, subjects may have been more willing to take risks (Thaler and Johnson, 1990). Although existing evidence does not point to more pronounced house money effects among women (Cárdenas et al., 2014; Hibbert, Lawrence and Prakash, 2018) — if anything, it suggests the opposite (Lam and Ozorio, 2013) —, future scholarship should explore the robustness of our findings to different elicitation methods. The role of party leaders in the exclusion of risk averse women from the lists also requires further investigation. It is possible that the (self-)selection process uncovered here is influenced less by the motivations of women considering a political career and more by party gatekeepers penalizing prospect candidates who do not behave like stereotypical men politicians (Cheng and Tavits, 2011; O’Brien et al., 2015). Still, these results suggest the need to remain cautious when deriving explanations for gender differences in the behavior of political elites on the basis of population-wide patterns.

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Supplementary Appendix to “Women Running for Office Are Less Risk Averse Than Men. Evidence From Parliamentary Candidates in Portugal”

Pedro Magalhães and Miguel M. Pereira

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Appendix A - Vignettes

Version 1: Public Investment

Imagine that you are the administrator of a public agency and the agency received a prize of €100,000 from the European Union. Shortly after receiving the prize, the agency receives the following financial offer to invest the money obtained:

- There is a 50% chance of doubling the money within two years.
- It is equally possible (with 50% chance) that you could lose half of the amount invested. The agency has the opportunity to invest the full amount won in the prize, part of the amount, or to reject the offer.

As an administrator, what share of the prize would you invest in this financially risky yet lucrative investment?

A €100,000

B €80,000

C €60,000

D €40,000

E €20,000

F Nothing, The public agency should decline the offer

Version 2: Personal Investment

Imagine that you won €100,000 in a lottery. Shortly after receiving the prize, you receive the following financial offer to invest the money obtained:

- There is a 50% chance of doubling the money within two years.
- It is equally possible (with 50% chance) that you could lose half of the amount invested. You have the opportunity to invest the full amount won in the lottery, part of the amount, or reject the offer.

What share of [the prize/your lottery winnings] would you invest in this financially risky yet lucrative investment?

A €100,000

B €80,000

C €60,000

D €40,000

E €20,000

F Nothing, I would decline the offer

Appendix B - Descriptives

Table B1 provides demographic and political information about the sample of candidates that took part in the study, along with the equivalent figures for the population of Portuguese Members of Parliament (MPs). Demographically, the sample mirrors the population of MPs. Ideologically, the sample includes a disproportionate number of subjects from left-leaning parties. The main analyses include party fixed effects to account for this sample imbalance. As described in the main text, the same results are obtained in models with and without party fixed effects (see Table 1 and Table C2).

Table B2, in turn, describes the possible payoffs associated with each investment choice. For each option, respondents had a 50% chance of receiving a high or a low payoff. The expected payoff is therefore calculated as $0.5 \times \text{Low Payoff} + 0.5 \times \text{High Payoff}$. As the table shows, higher levels of investment are associated with higher expected payoffs but also higher risk.

Table B1: Demographic characteristics of participants in candidate survey v. MPs

	Survey participants	MPs
Age (years)	47.8	49.0
Women (%)	44.1	40.0
College degree or more (%)	94.0	93.4
Experience in office (years)	2.52	7.2
Elected (%)	40.7	-
Left (%)	70.4	62.6
Right (%)	19.0	37.4
Socialist Party (PS)	38.9	36.3
Social Democratic Party (PSD)	17.5	27.8
Left Block (BE)	13.6	9.5
Unitary Democratic Coalition (CDU)	10.4	8.3
CDS - People's Party (CDS-PP)	10.2	4.2
People Animals Nature (PAN)	9.4	3.3

Note: Entries in column 1 are percentages or average values for the 348 candidates in the survey. Entries in column 2 are compiled from Inter-Parliamentary Union and the R package `legislatoR` (Göbel and Munzert 2021).

Table B2: Investment choices and expected payoffs

Investment choice (% of prize)	Payoff		
	Low	High	Expected
0	100	100	100
20	90	120	105
40	80	140	110
60	70	160	115
80	60	180	120
100	50	200	125

Note: Payoffs in thousands of euros. Equal probability of observing low/high payoff.

Appendix C - Additional analyses

Table C1 provides the full model results from the main analysis reported in the text (Table 1). Table C2 replicates the same analysis without covariates, as reported in the pre-analysis plan. Table C3 extends the main models by adding subjects' age as an additional predictor in the model and Table C4 replicates the model predicting risk level after excluding candidates who chose the options with no risk. Tables C5 and C6 are exploratory analyses testing the extent to which time in office moderates gender differences in risk preferences. *Incumbency* is a binary variable that takes the value of 1 if a respondent was an MP at the time of the survey, and 0 if the respondent was running for the first time. *Experience in office* is an ordinal variable capturing the number of years in parliament by the time of the survey. The results provide no evidence that experience in office moderates women's risk preferences.

Table C1: Gender differences in risk aversion. Complement to Table 1 in the main text.

	Holdout	Risk Level
	(1)	(2)
Woman	−0.154*** (0.054)	0.287** (0.138)
Personal investment	−0.068 (0.052)	0.0001 (0.135)
Experience in office	0.002 (0.005)	0.007 (0.012)
Education	0.006 (0.023)	−0.029 (0.060)
Incumbent	0.046 (0.062)	−0.125 (0.159)
CDS	−0.326*** (0.107)	0.569** (0.274)
CDU	−0.098 (0.105)	0.517* (0.270)
PAN	−0.242** (0.108)	0.601** (0.277)
PS	−0.247*** (0.082)	0.496** (0.211)
PSD	−0.329*** (0.094)	0.744*** (0.242)
Constant	0.802*** (0.203)	0.566 (0.522)
Observations	348	348
R ²	0.080	0.047

Note: Entries are coefficients (standard errors) of linear models on the effects of candidates' gender and type of investment on (1) the probability of holding out and (2) on risk level. *p<0.1; **p<0.05; ***p<0.01

Table C2: Unadjusted gender differences in risk aversion.

	Holdout	Risk Level
	(1)	(2)
Woman	−0.164*** (0.053)	0.290** (0.136)
Personal investment	−0.068 (0.053)	−0.008 (0.134)
Constant	0.666*** (0.044)	0.782*** (0.111)
Observations	348	348
R ²	0.031	0.013

Note: Entries are coefficients (standard errors) of linear models on the effects of candidates' gender and type of investment on (1) the probability of holding out and (2) on risk level. *p<0.1; **p<0.05; ***p<0.01

Table C3: Main models accounting for candidates' age

	Holdout	Risk Level
	(1)	(2)
Woman	−0.153*** (0.054)	0.287** (0.139)
Personal investment	−0.071 (0.053)	−0.001 (0.135)
Experience in office	0.002 (0.005)	0.007 (0.012)
Education	0.007 (0.023)	−0.028 (0.060)
Incumbent	0.047 (0.062)	−0.125 (0.159)
Age	0.001 (0.002)	0.001 (0.006)
Constant	0.732*** (0.237)	0.526 (0.610)
Party FEs	Yes	Yes
Observations	348	348
R ²	0.081	0.047

Note: Entries are coefficients (standard errors) of linear models on the effects of candidates' gender and type of investment on (1) the probability of holding out and (2) on risk level. *p<0.1; **p<0.05; ***p<0.01

Table C4: The effect of candidates' gender and type of investment on risk preferences, excluding zero risk

	Risk Level
Woman	0.097 (0.185)
Personal investment	−0.399** (0.185)
Experience in office	0.027* (0.015)
Education	−0.081 (0.085)
Incumbent	−0.012 (0.202)
Age	0.032 (0.410)
Constant	2.654*** (0.770)
Party FEs	Yes
Observations	152
R ²	0.118

Note: Entries are coefficients (standard errors) of a linear models on the effects of candidates' gender and type of investment on risk level, after excluding respondents who chose the no-risk option (56.3% of the sample). *p<0.1; **p<0.05; ***p<0.01

Table C5: The effects of candidates' gender on risk attitudes, by incumbency status

	Holdout	Risk Level
	(1)	(2)
Woman	−0.146** (0.069)	0.238 (0.176)
Incumbent	0.056 (0.079)	−0.181 (0.202)
Woman × Incumbent	−0.022 (0.110)	0.126 (0.283)
Personal investment	−0.068 (0.052)	−0.0004 (0.135)
Experience in office	0.002 (0.005)	0.008 (0.012)
Education	0.006 (0.024)	−0.027 (0.060)
Constant	0.803*** (0.203)	0.564 (0.522)
Party FEs	Yes	Yes
Observations	348	348
R ²	0.083	0.053

Note: Entries are coefficients (standard errors) of linear models on the effects of candidates' gender and type of investment on (1) the probability of holding out and (2) on risk level. *p<0.1; **p<0.05; ***p<0.01

Table C6: The effects of candidates' gender on risk attitudes, by time in office

	Holdout	Risk Level
	(1)	(2)
Woman	−0.177*** (0.058)	0.367** (0.149)
Experience in office	−0.060 (0.053)	−0.027 (0.136)
Woman × Experience in office	0.010 (0.009)	−0.034 (0.023)
Personal investment	−0.002 (0.006)	0.022 (0.016)
Education	0.007 (0.023)	−0.031 (0.060)
Incumbent	0.053 (0.062)	−0.149 (0.160)
Constant	0.799*** (0.203)	0.577 (0.521)
Party FEs	Yes	Yes
Observations	348	348
R ²	0.083	0.053

Note: Entries are coefficients (standard errors) of linear models on the effects of candidates' gender and type of investment on (1) the probability of holding out and (2) on risk level. *p<0.1; **p<0.05; ***p<0.01

Appendix References

Göbel, Sascha, and Simon Munzert. 2021. “The comparative legislators database.” *British Journal of Political Science*. Available online: doi:10.1017/S0007123420000897.