

WORKING PAPER (2024)

Does Mandating Women on Corporate Boards Backfire?

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Introduction

Overview

- The paper investigates the unintended consequences of board gender quotas on female labor demand.
 - Applying textual analysis to job ads in the US, the paper shows that firms with a higher share of female directors write less female-friendly job ads.
 - Using SB 826 in California as an exogenous shock, the paper establishes a negative causal effect of board gender quotas on female labor demand.
- Results show that board gender quotas trigger *backlashes* in firms, worsening female labor market outcomes



Introduction

Motivation

- The past two decades have witnessed major progress in female representation in corporate boards
 - Due to board gender diversity mandates and policies (Ahern and Dittmar, 2012), social pressure fueled by the #MeToo Movement, engagement and policies from the biggest asset managers (Gormley et al., 2023).
- While such policies and pressure reduce gender inequality at the top, little is known about the impact on gender equality outside the boardroom (Bertrand et al., 2019).
- This paper documents the unintended consequences of external pressure to enhance board gender diversity on the overall firms' female labor demand



Introduction

Motivation

- **“Backlash”** interpretation:
 - When legislative efforts clash with individuals’ ideological preferences, to preserve those preferences and regain autonomy, individuals may endorse an ideological viewpoint in opposition (Benabou and Tirole, 2011; Bowles and Polania-Reyes, 2012; Acemoglu and Jackson, 2017; Wheaton, 2022)
 - As a result, empowering women through mandates or policies may trigger backlash, which could lower demand for female labor



Literature Review & Contributions

- This paper contributes by separating labor demand from supply, and show that board gender quotas not only fail to deliver broad benefits, but can backfire.
 - Bertrand et al. (2019) examine the effect of board quotas on female labor market outcomes in Norway
 - They conclude that there is no evidence suggesting that such quotas help improve female employment outcomes beyond women who made it into boardrooms.



Literature Review & Contributions

- This paper adds to the research that uses computational linguistic methods to gain insights into labor market dynamics and corporate outcomes
 - Deming and Kahn (2018) and Hershbein and Kahn (2018) use job posting data to study skill requirements across firms and labor markets
 - Babina et al. (2021) develop firm-level measures of AI investments to study firm growth and product innovation.
 - Li et al. (2021) develop measures of corporate culture and relate the presence of a strong culture to shareholder value by applying machine learning to earnings call transcripts.



Literature Review & Contributions

- This paper contributes to the economics literature on backlash against regulatory and legislative efforts that push for social changes.
 - A number of papers provide evidence consistent with backlash against major social policy laws (Ang, 2019; Wheaton, 2022; Acemoglu and Angrist, 2001; Cullen and Pakzad-Hurson, 2021; Bailey et al., 2022)
 - In empowering women in business, legislative tools may have unintended consequences—they can harm women's advancement in business, because firms push back by reducing their demand for female labor



Data construction

"LinkUp" job ad data



- **LinkUp** : an employment intelligence company that scrapes job postings *directly* from public companies' websites
 - Data include job title, full-text description of each job, information about the employer, the date of the posting, the location in which a job is posted, and basic occupation information
- **Advantages of LinkUp** : regular updates, employers post job opening only once on their company's website
 - LinkUp data suffer less from stale postings or duplicate postings compared to job posting data obtained from other job boards

Data construction

Measuring gendered wording in job ads

- Gendered word dictionary
 - Employs the gendered word dictionary created by **Gaucher et al. (2011)**, describing social traits and behaviors that differentiate females and males.

List of Masculine and Feminine Words Coded in Studies 1 and 2

Masculine words	Feminine words
Active	Affectionate
Adventurous	Child*
Aggress*	Cheer*
Ambitio*	Commit*
Analy*	Communal
Assert*	Compassion*
Athlet*	Connect*
Autonom*	Considerate
Boast*	Cooperat*
Challeng*	Depend*
Compet*	Emotiona*
Confident	Empath*
Courag*	Feminine
Decide	Flatterable
Decisive	Gentle
Decision*	Honest
Determin*	Interpersonal
Dominant	Interdependen*
Domina*	Interpersona*
Force*	Kind
Greedy	Kinship
Headstrong	Loyal*
Hierarch*	Modesty
Hostil*	Nag
Implusive	Nurtur*
Independen*	Pleasant*
Individual*	Polite
Intellect*	Quiet*
Lead*	Respon*
Logic	Sensitiv*
Masculine	Submissive
Objective	Support*
Opinion	Sympath*
Outspoken	Tender*
Persist	Together*
Principle*	Trust*
Reckless	Understand*
Stubborn	Warm*
Superior	Whin*
Self-confiden*	Yield*
Self-sufficien*	
Self-relian*	

Gaucher et al. (2011) Evidence That Gendered Wording in Job Advertisements Exists and Sustains Gender Inequality

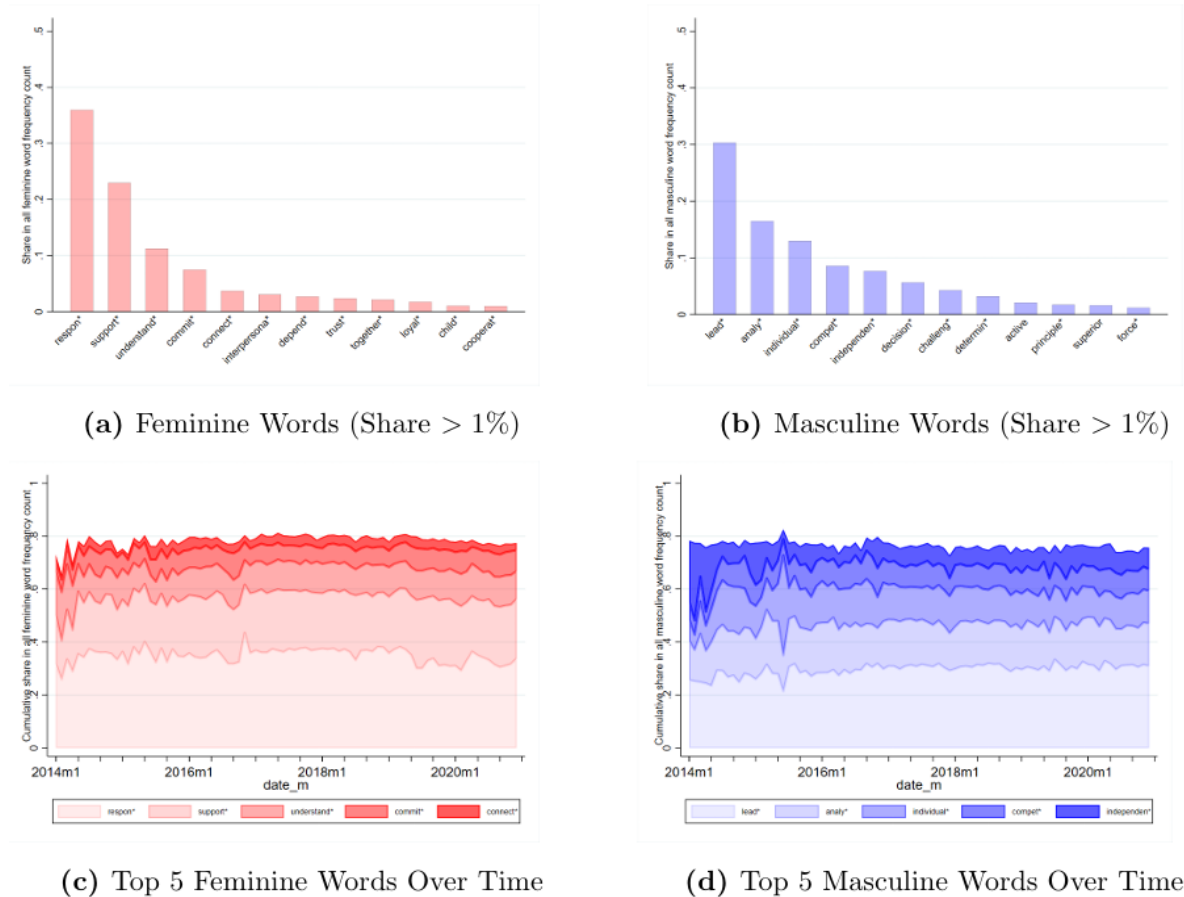
Data construction

Measuring gendered wording in job ads

- Variable measure:
 - The share of feminine words over the total number of feminine and masculine words for each job ad

→ Proxy for female labor demand.

Figure 1: Frequency Counts of Top Feminine & Masculine Words



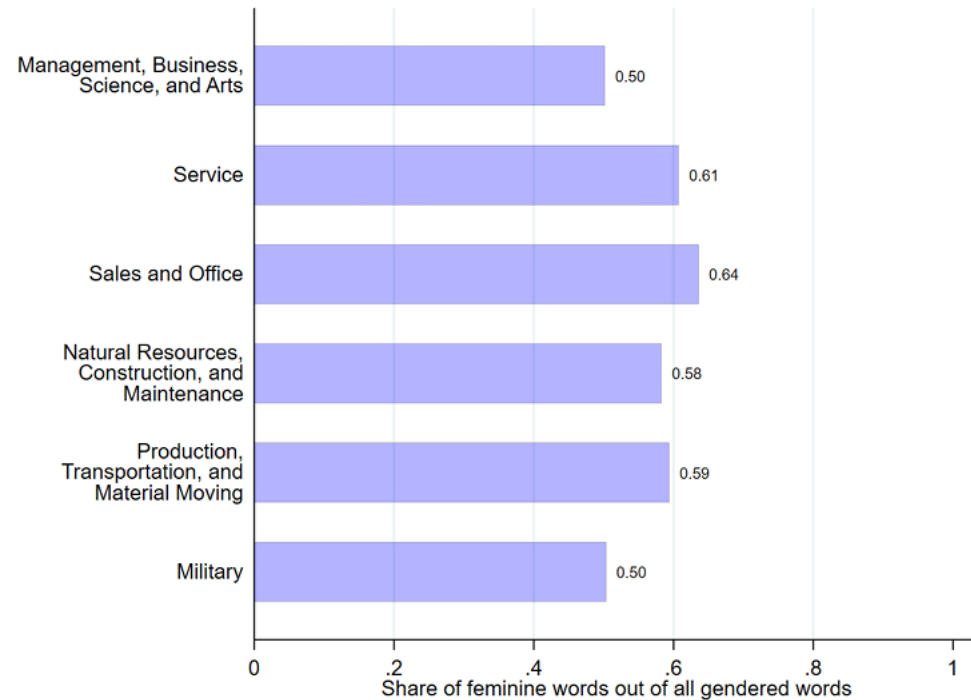


Data construction

Measuring gendered wording in job ads

- Gendered language usage in job ads is a reasonable proxy for gendered labor demand
 - Sales and office sector and the service sector, traditionally associated with high shares of female employment, have the highest shares of feminine words
 - The military sector has the lowest share of feminine words

Figure B5: Gendered Language Usage in Different Occupations
– High-Level Aggregation





Data construction

Financial data

- Compustat : Firm financial information
- BoardEx : Board characteristics
- ExecuComp : Information on executives.
- Total sample : 30 million US job-level ads from over 3,000 unique public companies over the period 2014–2020.



Empirical Strategy

Baseline model

$$Y_{p,t} = \gamma_i + \delta_{l,t} + \alpha_{k,t} + \vartheta_q + \beta \times \%Fem\ dir_{i,t} + \theta' X_{i,t} + \varepsilon_{p,t}$$

- p : job ad
 - i : firm
 - l : two-digit SIC industry
 - k : region (state/zip)
 - q : occupation
 - t : year-month when a job is posted
-
- Dependent variable $Y_{p,t}$: the share of feminine words out of all gendered words in a job ad (ad-level measure of gendered labor demand)
 - Coefficient of interest β : captures the relationship between female board representation and gendered labor demand



Empirical Strategy

DiD setting using SB 826 in California

$$Y_{p,t} = \gamma_i + \delta_{l,t} + \alpha_{k,t} + \vartheta_q + \beta \times Flag_CA_i \times Post_2018m9_t + \boldsymbol{\theta}' \mathbf{X}_{i,t} + \varepsilon_{p,t}$$

- Dependent variable $Y_{p,t}$: the share of feminine words out of all gendered words in a job ad (ad-level measure of gendered labor demand)
- $Flag_CA_i$: 1 for public firms headquartered in California, 0 otherwise.
- $Post_2018m9_t$: 1 after September 30, 2018, and 0 otherwise.
- The coefficient of interest β : captures the effect of SB 826.

Summary Statistics

Table 1: Summary Statistics

Panel A: US Job Level

Variable	N	Mean	Std. Dev.	Median	p1	p99
%Fem words	1,857,301	0.58	0.27	0.57	0.00	1.00
#Fem words	1,857,156	4.51	3.84	4.00	0.00	17.00
#Mas words	1,857,156	3.71	4.04	2.00	0.00	18.00
#Words	1,857,156	425.87	245.96	389.00	79.00	1139.00
Job zone	1,296,275	2.74	1.01	2.00	1.00	5.00
Mean wage	1,359,316	28.48	16.30	22.74	12.36	74.49
Entry education	1,360,709	2.01	2.02	1.00	0.00	7.00
STEM	1,360,709	0.07	0.25	0.00	0.00	1.00

Panel B: US Firm-Year Level

Variable	N	Mean	Std. Dev.	Median	p1	p99
#Job	14,601	2,223	14,050	214	1	36,956
%Fem words [mean]	14,601	0.547	0.135	0.541	0.205	0.91
#Dir	14,601	9.07	2.35	9.00	5.00	15.00
%Fem dir	14,601	0.18	0.12	0.17	0.00	0.50
Female CEO	8,888	0.07	0.25	0.00	0.00	1.00
Female CFO	8,888	0.13	0.34	0.00	0.00	1.00
Female COO	8,888	0.02	0.14	0.00	0.00	1.00
Firm Size (log assets)	8,888	8.40	1.74	8.32	4.72	12.80
Cash holdings	8,888	0.14	0.15	0.08	0.00	0.68
Tangibility	8,888	0.23	0.23	0.14	0.00	0.88
Tobin's Q	8,888	2.16	1.76	1.59	0.77	9.61
Leverage	8,888	0.28	0.23	0.26	0.00	0.95
ROA	8,888	0.11	0.12	0.11	-0.18	0.37
Capex	8,888	0.04	0.04	0.02	0.00	0.20

Results

Baseline Results

Table 2: Female Directors and Gendered Language Usage in Job Ads

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	Share of feminine words out of all gendered words (%Fem words)					
%Fem dir	-0.071* [0.040]	-0.085** [0.039]	-0.091** [0.034]	-0.076* [0.044]	-0.094** [0.045]	-0.103** [0.040]
Log (#Words)				-0.037*** [0.013]	-0.026*** [0.009]	-0.025** [0.010]
Female CEO				-0.061*** [0.021]	-0.047** [0.023]	-0.041** [0.018]
Female CFO				-0.023 [0.014]	-0.023 [0.014]	-0.024** [0.012]
Female COO				0.014 [0.025]	0.019 [0.023]	0.008 [0.020]
Firm size	0.016 [0.012]	0.013 [0.011]	0.01 [0.009]	0.013 [0.013]	0.01 [0.012]	0.007 [0.010]
Cash holdings	-0.101*** [0.032]	-0.090*** [0.032]	-0.075** [0.029]	-0.155*** [0.038]	-0.137*** [0.038]	-0.121*** [0.034]
Tangibility	-0.129 [0.078]	-0.152* [0.087]	-0.142* [0.079]	-0.202** [0.079]	-0.222** [0.091]	-0.209** [0.084]
Tobin's Q	0.007** [0.003]	0.008*** [0.003]	0.006** [0.003]	0.008** [0.004]	0.010** [0.004]	0.007** [0.003]
Leverage	0.008 [0.020]	0.015 [0.020]	0.01 [0.018]	-0.013 [0.022]	-0.001 [0.024]	-0.008 [0.021]
ROA	-0.148** [0.058]	-0.149*** [0.053]	-0.112*** [0.042]	-0.224*** [0.071]	-0.222*** [0.067]	-0.183*** [0.059]
Capex	0.219 [0.176]	0.237 [0.174]	0.311** [0.148]	0.445* [0.233]	0.463* [0.231]	0.496** [0.213]
Firm FE	YES	YES	YES	YES	YES	YES
Industry × Year-Month FE	YES	YES	YES	YES	YES	YES
Job State × Year-Month FE	YES	YES	-	YES	YES	-
Job Zip × Year-Month FE	NO	NO	YES	NO	NO	YES
Occupation (ONET 6 digit) FE	NO	YES	YES	NO	YES	YES
Obs	1,802,618	1,802,618	1,802,618	1,629,816	1,629,816	1,629,816
Adj R2	0.355	0.414	0.429	0.361	0.419	0.434



Results

Gendered job ads vs. gendered jobs

Table 3: Female Directors and Gendered Language Usage in Job Ads
Gendered Job Ads vs. Gendered Jobs

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	Share of feminine words out of all gendered words (%Fem words)					
	Same job title			Drop gendered jobs		Drop job-specific gendered words
%Fem dir	-0.089* [0.053]	-0.085* [0.046]	-0.083* [0.049]	-0.084** [0.039]	-0.088** [0.041]	-0.117** [0.045]
Job Title FE (full)	YES	-	NO	NO	NO	NO
Job Title FE (first 3 words)	NO	YES	-	NO	NO	NO
Job Title × Occupation × Firm FE	NO	NO	YES	NO	NO	NO
Firm FE	YES	YES	-	YES	YES	YES
Industry × Year-Month FE	YES	YES	YES	YES	YES	YES
Job Zip × Year-Month FE	YES	YES	YES	YES	YES	YES
Occupation (ONET 6 digit) FE	NO	NO	-	YES	YES	YES
Obs	1,641,670	1,641,670	1,641,670	1,364,478	1,019,866	1,639,456
Adj R2	0.714	0.665	0.778	0.446	0.431	0.399



Results

Interpretation of the negative association

Table 4: Female Directors and Gendered Language Usage in Job Ads
Heterogeneity: “The Big Three”, Competition, Leadership, and Partisanship

	(1)	(2)	(3)	(4)	(5)
Dep. Var.	Share of feminine words out of all gendered words (%Fem words)				
%Fem dir	-0.067 [0.045]	-0.055 [0.044]	-0.037 [0.064]	-0.127*** [0.046]	-0.119*** [0.043]
%Fem dir × High Big3 ownership	-0.118*** [0.044]				
%Fem dir × High concentration		-0.200** [0.093]			
%Fem dir × >50% Republican contribution			-0.203*** [0.052]		
%Fem dir × Female Top3 exec				0.113** [0.055]	
%Fem dir × Female COO					0.438*** [0.122]
Controls	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES
Industry × Year-Month FE	YES	YES	YES	YES	YES
Job Zip × Year-Month FE	YES	YES	YES	YES	YES
Occupation (ONET 6-digit) FE	YES	YES	YES	YES	YES
Obs	1,143,596	1,143,596	767,802	1,143,596	1,143,596
Adj R2	0.463	0.463	0.435	0.463	0.463



Additional Analysis

Identification through California's SB 826

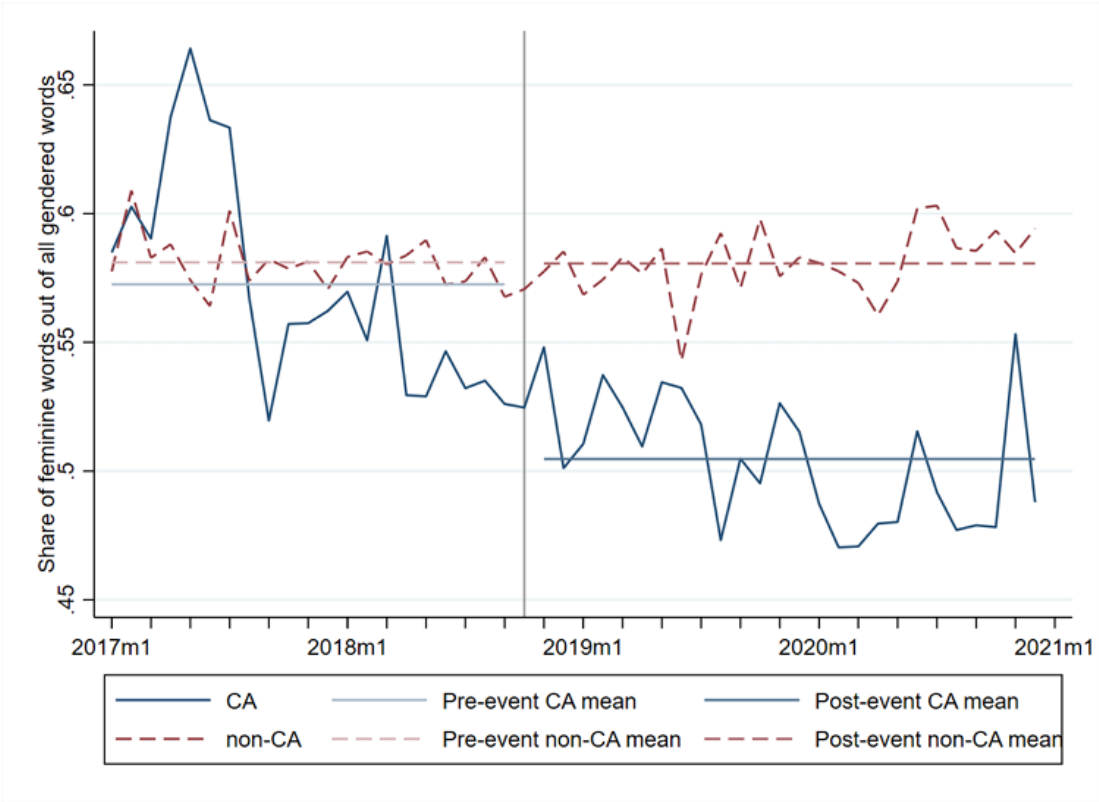
- California's SB 826 Bill
 - Requires companies listed on major US stock exchanges and headquartered in the state to have at least one female director on their boards by the end of 2019
 - Enacted on September 30, 2018, applied to US and foreign firms listed on major US stock exchanges and headquartered in California.



Additional Analysis

Identification through California's SB 826

Figure 2: California Statute and Gendered Language Usage in Job Ads
– Dynamics (Univariate)





Additional Analysis

Identification through California's SB 826

Table 6: Effect of California Statute on Gendered Language Usage in Job Ads

Panel A: Baseline						
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	Share of feminine words out of all gendered words (%Fem words)					
Flag_CA × Post_2018m9	-0.053*** [0.008]	-0.046*** [0.008]	-0.041*** [0.008]	-0.054*** [0.010]	-0.047*** [0.011]	-0.042*** [0.010]
Controls	NO	NO	NO	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Industry × Year-Month FE	YES	YES	YES	YES	YES	YES
Job State × Year-Month FE	YES	YES	-	YES	YES	-
Job Zip × Year-Month FE	NO	NO	YES	NO	NO	YES
Occupation (ONET 6 digit) FE	NO	YES	YES	NO	YES	YES
Obs	1,816,477	1,816,477	1,816,477	1,642,550	1,642,550	1,642,550
Adj R2	0.354	0.414	0.429	0.36	0.419	0.434



Additional Analysis

Other Female Labor Market Outcomes

- Employee reviews of female-friendly amenities
 - Using textual analysis of Glassdoor employee reviews, the paper focus on eight “Female-friendly” amenities that are important for female employees
 - 5-Paid time off, 10-Work-life balance, 11-Hours, 12-Work schedule, 16-Teleworking, 19-Respect/abuse, 21-Support, and 31-Diversity/inclusion
 - If quota-triggered gender discrimination exists, more (female) employees will express their dissatisfaction by leaving negative reviews



Additional Analysis

Other Female Labor Market Outcomes

Table 8: Female Directors and Employee Reviews of Female-Friendly Amenities

Panel A: Correlation with Female Directors								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Coverage of 8 amenities in Glassdoor job reviews (word frequency)							
Dep. Var.	Pros	Pros	Cons	Cons	Pros - Cons	Pros - Cons	Pros - Cons (weighted)	Pros - Cons (weighted)
%Fem dir	-0.242** [0.115]	-0.238* [0.132]	0.241* [0.136]	0.283 [0.183]	-0.241*** [0.088]	-0.298*** [0.114]	-0.268** [0.110]	-0.346** [0.152]
List of words for amenities	Anchor	Anchor&Top20	Anchor	Anchor&Top20	Anchor	Anchor&Top20	Anchor	Anchor&Top20
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry $\times$ Year-Month FE	YES	YES	YES	YES	YES	YES	YES	YES
Obs	54,814	54,814	54,814	54,814	54,814	54,814	54,814	54,814
Adj R2	0.054	0.057	0.084	0.089	0.074	0.075	0.081	0.084

Panel B: Effect of California Statute								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Coverage of 8 amenities in Glassdoor job reviews (word frequency)							
Dep. Var.	Pros	Pros	Cons	Cons	Pros - Cons	Pros - Cons	Pros - Cons (weighted)	Pros - Cons (weighted)
Flag_CA $\times$ Post_2018m9	-0.035 [0.023]	-0.019 [0.022]	0.048* [0.028]	0.067 [0.048]	-0.043*** [0.012]	-0.041* [0.021]	-0.044** [0.020]	-0.048 [0.033]
List of words for amenities	Anchor	Anchor&Top20	Anchor	Anchor&Top20	Anchor	Anchor&Top20	Anchor	Anchor&Top20
Controls	YES	YES	YES	YES	YES	YES	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES	YES	YES
Industry $\times$ Year-Month FE	YES	YES	YES	YES	YES	YES	YES	YES
Obs	52,856	52,856	52,856	52,856	52,856	52,856	52,856	52,856
Adj R2	0.056	0.059	0.087	0.092	0.077	0.077	0.083	0.085



Additional Analysis

Other Female Labor Market Outcomes

- External validity: Aggregate female employment in Europe
 - The paper exploits staggered adoptions of board gender quotas across European countries
 - Mensi-Klarbach and Seierstad (2020) classify board gender quotas into soft (e.g., Spain and Iceland) versus non-soft (e.g., Norway and France).

Additional Analysis

Other Female Labor Market Outcomes

Table 10: External Validity – Effect of Board Gender Quotas in Europe on Female Labor Market Participation

Panel A: All Quotas						
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	Share of female employment out of total employment (%Fem Emp $\times$ 100)					
Quota	-0.289*** [0.105]	-0.252** [0.106]	-0.228** [0.092]	-0.358*** [0.130]	-0.294** [0.127]	-0.299*** [0.098]
%Fem population				0.268 [0.268]	0.276 [0.238]	0.156 [0.139]
Log (population)				7.311** [2.991]	6.052** [2.834]	4.244* [2.160]
Population growth				0.066 [0.050]	0.025 [0.081]	0.088* [0.044]
Log (GDP per capita)				0.959 [0.807]	1.543* [0.872]	0.991* [0.548]
GDP per capita growth				-0.002 [0.012]	0.004 [0.019]	-0.007 [0.011]
Industry FE	YES	-	-	YES	-	-
Country FE	YES	YES	-	YES	YES	-
Region $\times$ Year FE	YES	YES	YES	YES	YES	YES
Industry $\times$ Year FE	NO	YES	YES	NO	YES	YES
Country $\times$ Industry FE	NO	NO	YES	NO	NO	YES
Obs	29,734	29,734	29,688	29,734	29,734	29,688
Adj R2	0.918	0.917	0.991	0.918	0.917	0.991

Panel B: Hard vs. Soft Quotas						
	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	Share of female employment out of total employment (%Fem Emp $\times$ 100)					
Hard quota	-0.311** [0.117]	-0.265** [0.110]	-0.238** [0.095]	-0.385*** [0.139]	-0.311** [0.130]	-0.313*** [0.101]
Soft quota	0.194 [0.119]	0.009 [0.277]	-0.013 [0.307]	0.093 [0.163]	-0.012 [0.286]	-0.06 [0.300]
%Fem population				0.22 [0.264]	0.247 [0.239]	0.132 [0.143]
Log (population)				7.074** [2.949]	5.929** [2.847]	4.132* [2.171]
Population growth				0.067 [0.048]	0.025 [0.081]	0.089* [0.044]
Log (GDP per capita)				1.046 [0.834]	1.605* [0.887]	1.038* [0.555]
GDP per capita growth				-0.003 [0.012]	0.004 [0.019]	-0.007 [0.011]
Industry FE	YES	-	-	YES	-	-
Country FE	YES	YES	-	YES	YES	-
Region $\times$ Year FE	YES	YES	YES	YES	YES	YES
Industry $\times$ Year FE	NO	YES	YES	NO	YES	YES
Country $\times$ Industry FE	NO	NO	YES	NO	NO	YES
Obs	29,734	29,734	29,688	29,734	29,734	29,688
Adj R2	0.918	0.917	0.991	0.918	0.917	0.991



Conclusion

- The paper uncovers a negative correlation between a firm's share of female directors and its female labor demand.
 - The negative association is accentuated in firms with a higher ownership by the three largest asset managers– State Street, BlackRock, and Vanguard
- The enactment of SB 826 results in a significant drop in female labor demand.
- All evidence points to the backlash interpretation that board gender quotas/ policies could backfire, resulting in worse labor market outcomes for women.
- The findings highlight complex welfare implications of gender equality policies that might have long-run effects when firms fail to internalize the social cost of such policies.