

Public Attention to Gender Equality and Board Gender Diversity

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Abstract

We document that heightened public attention to gender equality is associated with an increase in board gender diversity. Improvements in diversity are more pronounced in firms with a corporate culture that is already sympathetic to gender equality. When public attention to gender equality increases, firms reach out to a larger pool of women, such as women without industry experience or outside their network, but female director appointments do not appear to be dilutive of the board's skills. Instead, we observe less reliance on connections for director appointments and a decrease in the propensity to appoint connected men.

1. Introduction

Public attention to gender equality varies over time, spurred by political and other public events, such as the debate surrounding the Fair Pay Act, Hillary Clinton's presidential campaign, or Women's March. How are these spikes in public attention, which reflect societal concerns and awareness of discrimination, reflected in corporate leadership? Do corporate boards become more diverse? Are there any changes in recruiting practices aiming to increase female board representation?

This article investigates whether firms are permeable to societal concerns by exploring how changes in public attention to gender equality are associated with changes in board composition. We also ask whether heightened public attention to gender equality is associated with changes in director recruiting practices and whether companies, driven by their desire to cater to societal preferences, make worse board appointments.

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We start by showing that spikes in public attention are associated with changes in corporate behavior. Corporations are more likely to appoint women to their boards in periods of high public attention to gender equality. However, not all firms are equally attuned to societal demands. The effects of public attention are more pronounced in firms with an *ex ante* corporate culture more favorable to women. This conclusion is robust when we use alternative measures for a firm's *ex ante* attitudes toward gender diversity, including firms' diversity ratings or a corporate culture of respect toward others, as defined by Li, Mai, Shen, and Yan (2021). The differential effects of corporate culture appear to reflect differences in corporate leadership as board gender diversity increases to a larger extent in firms with female leaders, with directors more exposed to female leadership, and in firms that are likely to have a democratic-leaning management team, as is consistent with the fact that the Democratic platform is typically more receptive of gender equality issues.

These findings are robust when we consider a number of alternative specifications. In particular, we show that our results are not driven by pro-diversity institutional investors' pressure or industry- and state-level shocks. Overall, our findings suggest that heightened public attention to gender equality may lead to divergence in board gender diversity between firms if corporate culture toward women does not change.

We also examine how female directors' characteristics and recruiting practices change when public attention to gender equality and female director appointments increase. We find that heightened public attention leads listed companies to reach out to a broader pool of potential female directors, including women from other industries and women outside the existing board members' connection circle. There is, however, no obvious deterioration in the characteristics of newly appointed female directors. Heightened public attention to gender equality does not change the existing gender differences in director characteristics. Using a market-based measure of director human capital, we find that the gender gap in director human capital actually decreases as public attention to gender equality increases. In addition, consistent with the idea that the qualities and expertise of female directors are well suited to the boards on which they serve, female directors are as likely as other directors to sit on key committees, such as the audit committee and the compensation committee. This tendency does not change with public attention to gender equality, and female directors become more likely to obtain positions of leadership. Overall, our results suggest that during these periods of high demand for female directors' skills, the increase in female board representation is not achieved by compromising on director quality.

We also find that female directors are less likely to have previously overlapped with other members of the board and become even more so in periods of high public attention to gender equality. On the one hand, this may reflect shortage in the supply of women within the network. Firms may thus incur large search costs to identify and appoint female directors from outside the network. On the other hand, biases due to homophily, that is, individuals' desire to associate with similar people, may prevail in network-based appointments and lead directors to prefer male candidates within their networks.

To shed light on why female directors are less connected to other board members, we explore how firms choose whom to appoint between all individuals

who are connected with the firms' existing board members. We consider different types of connections through prior jobs, educational programs, or social activities. We find that connected men are more likely to be appointed to the board of a listed company than connected women, even after controlling for directors' qualifications and experiences. An increase in public attention to gender equality not only reduces the differential effect of connections for men and women, but it is also associated with lower reliance on connections in director appointments. These effects contribute to higher female board representation and suggest that, when public attention to gender equality is weak, network-based appointments constrain female board representation.

This article contributes to the literature on the labor market for corporate directors. This literature investigates the characteristics of directors (see, e.g., Boone, Field, Karpoff, and Raheja (2007), Denis, Denis, and Walker (2015), Kim and Starks (2016), Adams, Akyol, and Verwijmeren (2018), Erel, Stern, Tan, and Weisbach (2018), and Field, Souther, and Yore (2020)). We explore how changes in societal concerns, reflected in time-varying public attention to gender equality, are associated with gender diversity and other characteristics of the appointed directors.

Another strand of the literature evaluates different interventions to increase minority representation in leadership positions. For instance, a growing literature in economics and finance evaluates gender quotas in politics and corporate boards as instruments to promote gender equality.¹ We show that greater public attention to gender equality also spurs changes in board composition and recruiting practices. In this respect, our findings can inform the more general diversity discussion, including the debate on racial equality. To the extent that public attention to gender or racial equality can be induced by policymakers, it may be a less contentious instrument than affirmative-action policies to achieve a change in recruiting practices. However, we also show that just increasing public attention has limits due to firms' ex ante corporate culture. In this respect, our findings support the conclusions of Gorton and Zentefis' (2019) theoretical model that changes in societal views in favor of minority groups may not affect all firms equally.

II. Data

A. Measuring Public Attention to Gender Equality

We use Google Search Trends to construct an index of public attention to gender equality. Google Search Trends constructs the Google search volume index (SVI) starting from Jan. 2004 as the ratio of the monthly total queries for a specific search term or topic in a given geographical region relative to the total number of queries in the same month and region. Google rescales the monthly ratios in a given time period so that the month with the peak (lowest) search intensity for the given search term or topic gets a value of 100 (0).

¹See, for example, Beaman, Chattopadhyay, Duflo, Pande, and Topalov (2009), Matsa and Miller (2011), Ahern and Dittmar (2012), Besley, Folke, Persson, and Rickne (2017), Ferreira, Ginglinger, Laguna, and Skalli (2017), Hwang, Shivdasani, and Simintzi (2018), Bertrand, Black, Lleras-Muney, and Jensen (2019), Eckbo, Nygaard, and Thorburn (2022), and Gertsberg, Mollerstrom, and Pagel (2021).

The results we present hereafter are based on the search for the term “gender equality.” However, the results are robust if we set the search for the terms “gender inequality” or “feminism.” The results are equally robust if we consider searches on the topics (instead of the terms) “gender equality” or “gender inequality.” A search topic is broader than a search term but is less precisely defined. These alternative searches lead to SVI indices that have a correlation in excess of 0.9 with our main proxy based on the search term “gender equality.”

Google Search Trends provides the time series SVI for the United States as a whole as well as for each of the U.S. states. However, the state SVI is normalized by Google to indicate the relative public attention over time within a state, and thus the values are comparable within-state over time, but not across states.² To overcome this limitation and exploit cross-sectional differences between states, for each year in our sample, we download SVI data on the term “gender equality,” constructed by Google to capture the relative public attention across states within a year. The values of this yearly SVI are not comparable over time.³ To create a public attention measure that is comparable across states and over time, we construct GENDER_EQUALITY_SVI_(STATE) as the interaction between state SVI and yearly SVI.

The SVI indexes harness millions of users’ collective interest in a particular issue better than news coverage (Da, Engelberg, and Gao (2011)) and have proved useful in a variety of settings. For instance, Google searches related to the flu accurately estimate influenza epidemics across different regions (Ginsberg et al. (2009)). Search frequency is related to contemporaneous home sales, automotive sales, and tourism (Choi and Varian (2012)). Google searches on particular firms are good proxies for investors’ demand for information (Drake, Rouldstone, and Thornock (2015)). They can thus provide a good metrics to explore how board composition and recruiting practices change with societal preferences about gender equality.

Panel A of Table 1 provides summary statistics for the GENDER_EQUALITY_SVI, the average SVI on the search term “gender equality” over the previous 12 months in the United States. We scale the original SVI data by 100 so that the values fall between 0 (the month with the lowest attention) and 1 (the month with the peak attention). We also summarize GENDER_EQUALITY_SVI_(STATE).

Figure 1 shows the time-series pattern of the GENDER_EQUALITY_SVI. Although public attention to gender equality increases dramatically in the later part of our sample, the pattern is nonmonotonic. Public attention to gender equality decreases between 2005 and 2008, temporarily increases around 2010, and is pretty low up to 2013, after which it increases dramatically. In particular, the intensity of Google searches for gender equality is strongly and positively correlated with the intensity of searches for feminism, for famous career women, such as Hillary

²For example, a value of 100 in California and in Texas indicates each state’s peak search time during the sample period, but it does not imply the same absolute search intensity between these two states.

³A value of 100 in California in 2010 and in 2011 does not necessarily indicate the same absolute search intensity across these two years.

TABLE 1
Summary Statistics

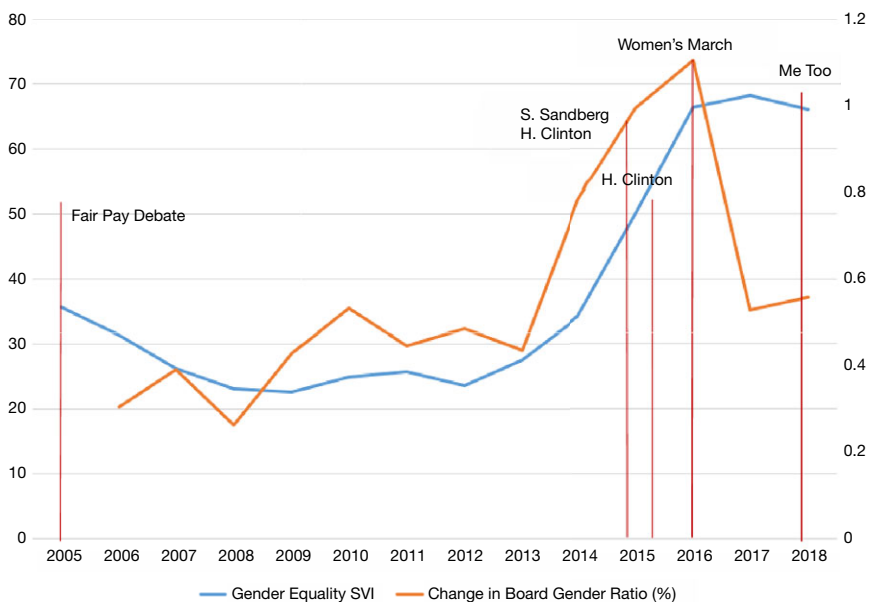
Table 1 presents summary statistics for the different samples used in the empirical analysis.

	<u>No. of Obs.</u>	<u>Mean</u>	<u>Median</u>	<u>Std. Dev.</u>
<i>Panel A. Google Search Trends Data</i>				
GENDER_EQUALITY_SVI	156	0.366	0.288	0.166
GENDER_EQUALITY_SVI(STATE)	588	0.039	0.025	0.047
Panel B. BoardEx Data				
<i>Firm Level</i>				
BOARD_GENDER_RATIO	51,399	0.104	0.100	0.111
DIVERSITY_STRENGTH	24,844	0.074	0.000	0.179
DIVERSITY_CONCERN	27,467	0.177	0.000	0.227
RESPECTFUL_CULTURE	33,392	0.250	0.000	0.433
DISRESPECTFUL_CULTURE	33,392	0.250	0.000	0.433
LEAST_SEXIST_STATE_CULTURE	53,644	0.182	0.000	0.386
MOST_SEXIST_STATE_CULTURE	53,644	0.239	0.000	0.427
HAS_FEMALE	49,831	0.559	1.000	0.497
DIRECTOR_GENDER_EXPOSURE	49,831	0.080	0.000	0.125
DEMOCRATIC_FIRM	51,399	0.277	0.000	0.448
REPUBLICAN_FIRM	51,399	0.069	0.000	0.254
log(BOARD_SIZE)	51,399	2.038	2.079	0.349
SHARE_BIG_THREE	38,316	0.076	0.055	0.073
<i>Director Level (newly appointed, listed companies)</i>				
FEMALE	47,804	0.128	0.000	0.334
BRAND_NEW_TO_BOARD	47,804	0.305	0.000	0.461
BRAND_NEW_TO_LISTED_CO	47,804	0.597	1.000	0.491
#_OF_OTHER_BOARD_SEATS	47,804	1.029	0.000	4.128
NO_INDUSTRY_EXPERIENCE	47,804	0.200	0.000	0.400
CONNECTED	47,804	0.205	0.000	0.403
DIRECTOR_AGE	47,557	55.920	56.000	9.227
ADVANCED_DEGREE	47,804	0.158	0.000	0.365
PROFESSIONAL_AWARDS	47,804	0.333	0.000	0.471
CEO	47,804	0.278	0.000	0.448
EXECUTIVE	47,804	0.614	1.000	0.487
BOARD_CHAIRMAN	47,804	0.272	0.000	0.445
#_OF_BOARDS_PREVIOUSLY_SERVED	47,804	3.682	2.000	4.942
LISTED_COMPANY	47,804	0.502	1.000	0.500
#_OF_INDUSTRIES	47,804	3.609	3.000	2.759
MILITARY	47,804	0.031	0.000	0.173
GOVERNMENT	47,804	0.125	0.000	0.331
ACADEMIA	47,804	0.126	0.000	0.333
SOCIAL	47,804	0.043	0.000	0.202
FINANCE	47,804	0.503	1.000	0.500
DIRECTOR_HUMAN_CAPITAL (%)	13,626	0.350	0.372	0.458
<i>Director Level (all, listed companies)</i>				
FEMALE	321,406	0.121	0.000	0.326
COMPENSATION_COMMITTEE	321,406	0.510	1.000	0.500
AUDIT_COMMITTEE	321,406	0.560	1.000	0.496
NOMINATION_COMMITTEE	321,406	0.469	0.000	0.499
EXECUTIVE_COMMITTEE	321,406	0.142	0.000	0.349
COMMITTEE_CHAIR	321,406	0.456	0.000	0.498
BOARD_CHAIRMAN	321,406	0.065	0.000	0.247
DIRECTOR_AGE	321,406	68.540	69.000	9.289
DIRECTOR_TENURE	321,406	7.795	6.000	6.259
ADVANCED_DEGREE	321,406	0.151	0.000	0.358
PROFESSIONAL_AWARDS	321,406	0.377	0.000	0.485
#_OF_OTHER_BOARD_SEATS	321,406	1.199	0.000	4.755
CEO_EXPERIENCE	321,406	0.315	0.000	0.465
<i>Director Level (all connected directors)</i>				
APPOINTED (%)	272,996,290	0.003	0.000	0.580
FEMALE	272,996,290	0.140	0.000	0.347
CONNECTION_TO_THE_CEO	272,996,290	0.074	0.000	0.262
CONNECTIONS	272,996,290	1.344	1.000	1.113
EXECUTIVE_EXPERIENCE	272,996,290	0.356	0.000	0.479
MILITARY	272,996,290	0.006	0.000	0.078
GOVERNMENT	272,996,290	0.050	0.000	0.217
ACADEMIA	272,996,290	0.067	0.000	0.249
SOCIAL	272,996,290	0.021	0.000	0.142
LISTED_COMPANY	272,996,290	0.094	0.000	0.291
DIRECTOR_AGE	272,996,290	62.50	62.00	10.10
#_OF_POSITIONS	272,996,290	0.736	0.000	2.053

FIGURE 1

Public Attention to Gender Equality and Female Board Representation

Figure 1 plots the 12-month moving average of the monthly Google search volume index (SVI) for the term "gender equality" and the change in the average board gender ratio between Jan. 2005 and Jan. 2018. In the empirical analysis, the Google SVI is divided by 100. We highlight the peak search times for events or individuals that coincide with higher public attention to gender equality, such as the Fair Pay Debate, Sheryl Sandberg, Hillary Clinton, Women's March, and the MeToo movement.



Clinton, for national public events related to women's rights, such as the debate on fair pay in the period leading to the 2007 Supreme Court's decision on *Ledbetter v. Goodyear*, the Women's March, and the MeToo movement.

B. Corporate Boards and Firm-Level Data

We obtain corporate board data from BoardEx, which provides full biographies of directors and senior managers of U.S. public and private companies. For each director, we obtain information on gender, education, professional experience, certifications, social networks, and committee appointments. Our main sample includes 5,936 U.S. listed companies from 2005 to 2017, for a total of 34,283 directors. We construct proxies for board experience and industry experience considering also directors' prior appointments in unlisted companies. We obtain the industries of prior employers from COMPUSTAT for listed companies and Bureau Van Dick's Orbis for unlisted companies.

In some tests, we also consider the directors of U.S. unlisted companies and nonprofit organizations. The sample of connected directors that are not appointed to a listed company's board during our sample period includes 489,847 individuals. Slightly over 13% of these directors of unlisted firms are women, a similar percentage to that of listed companies' boards.

Figure 1 plots the change in the average board gender ratio of U.S. listed companies. The speed at which female board representation varies appears to be related to public attention to gender equality. Hereafter, we explore to what extent this pattern is robust to more rigorous analysis. Importantly, the nonmonotonic pattern, together with the fact that the results we present hereafter are generally robust if we limit the sample up to 2013, indicates that we do not merely capture recent trends.

We merge BoardEx data with various other data sources. First, we obtain firms' financial information from COMPUSTAT. Second, we use the MSCI database, which provides ratings on strengths and concerns regarding firms' diversity policies. Specifically, MSCI provides strength ratings on seven dimensions (CEO, promotion, gender, benefits, women and minority contracting, gay and lesbian policies, and other) and concern ratings on five dimensions (controversies, nonrepresentation, board gender diversity, board minority diversity, and other). Since the number of strengths and concerns considered varies over time, we compute the average strength rating (DIVERSITY_STRENGTH) and the average concern rating (DIVERSITY_CONCERN) for each firm in each year. The correlation between DIVERSITY_STRENGTH and DIVERSITY_CONCERN is negative and relatively low at -23% . We consider high strength ratings and low concern ratings as indicative of a corporate culture that provides an equitable and hospitable place to women. Besides DIVERSITY_STRENGTH and DIVERSITY_CONCERN, we use a number of additional proxies for corporate culture that we introduce in the subsequent sections.

Panel B of Table 1 provides summary statistics for the firm-level sample, for the directors of listed companies, and for the more comprehensive sample of directors of listed and unlisted companies.

III. Public Attention to Gender Equality and Board Composition

A. Baseline Results

This section explores to what extent corporate leadership changes with societal preferences about gender equality. Table 2 relates the proportion of female directors on a board during a year to the GENDER_EQUALITY_SVI over the previous year, controlling for board size. In all specifications, we include firm fixed effects to control for firms' time-invariant characteristics. Since public attention is correlated across firms over time, but our panel has a relatively short time series, we bootstrap standard errors considering that observations may be correlated across firms and over time.

In column 1 of Table 2, stronger attention to gender equality over the previous year is associated with significantly higher female board representation. The economic magnitude of the effect is nontrivial. A one-standard-deviation increase in the GENDER_EQUALITY_SVI corresponds to a 2 percentage point average increase in the gender ratio of listed companies' boards, equivalent to a 20% increase relative to the sample mean.

TABLE 2
Public Attention to Gender Equality and Board Gender Ratio

In Table 2, the dependent variable is BOARD_GENDER_RATIO. GENDER_EQUALITY_SVI is the average Google search intensity of the term "gender equality" in the prior year (scaled by 100). In column 2, we include year t and year t squared to control for a potential convex time trend in both GENDER_EQUALITY_SVI and BOARD_GENDER_RATIO. All variables are defined in the Appendix. Wild bootstrapped t -statistics are obtained by resampling 999 times over firm-year clusters using the Boottest command in Stata 16 (Roodman, Nielsen, MacKinnon, and Webb (2019)) and are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	1	2
GENDER_EQUALITY_SVI	0.117*** (10.403)	0.034*** (13.557)
log(BOARD_SIZE)	0.754 (1.602)	0.008 (2.559)
Firm FE	Yes	Yes
Linear and quadratic trends	No	Yes
No. of obs.	54,413	54,413
Adj. R^2	0.736	0.749

In column 2 of Table 2, we explore to what extent the positive relation between public attention to gender equality and BOARD_GENDER_RATIO just captures increasing time trends in these two variables that accelerate in the last part of the sample, by including linear and quadratic polynomial trends in the regression. Although the coefficient on public attention to gender equality becomes smaller, it is statistically significant and quantitatively meaningful. Specifically, a one-standard-deviation increase in the GENDER_EQUALITY_SVI corresponds to a 0.6 percentage point average increase in the gender ratio of listed companies' boards, equivalent to a 6% increase relative to the sample mean.

B. Cross-Sectional Differences

Public attention to gender equality may increase female board representation to a larger extent in firms that are ex ante more female friendly because in these firms, management, shareholders, and other stakeholders are likely to be already better disposed toward gender equality and be more responsive to societal pressure to reduce gender gaps. We thus differentiate firms on the basis of ex ante characteristics associated with a corporate culture more or less inclusive toward women. By allowing firms to have different exposure to public attention to gender equality, we are able to study the effects of public attention by including year fixed effects and controlling for concurring trends. Although the year fixed effects absorb the direct effects of public attention to gender equality, the results we present hereafter are qualitatively invariant if we omit the year fixed effects and include public attention to gender equality together with the linear and quadratic polynomials to capture time trends in the regression.

Table 3 explores cross-sectional heterogeneity in firms' responses to public attention to gender equality. Our first proxy for a female-friendly (unfriendly) corporate culture is DIVERSITY_STRENGTH (DIVERSITY_CONCERN), based on the lagged MSCI ratings of a firm's diversity policies. In column 1, the sensitivity of the board's gender ratio to public attention to gender equality increases in a

TABLE 3
The Role of Firm Culture

In Table 3, the dependent variable is BOARD_GENDER_RATIO. GENDER_EQUALITY_SVI is the average Google search intensity of the term "gender equality" in the prior year (scaled by 100). DIVERSITY_STRENGTH (DIVERSITY_CONCERN) is the number of diversity strengths (concerns) of a firm, divided by the total number of diversity dimensions on which the firm is evaluated. HAS_FEMALE is a dummy variable that equals 1 if a board has at least one female director in the prior year, and 0 otherwise. DIRECTOR_GENDER_EXPOSURE is the average board gender ratio in companies connected to a firm's directors. RESPECTFUL_CULTURE (DISRESPECTFUL_CULTURE) is a dummy variable that equals 1 if in a given year a firm is in the top (bottom) quartile of the sample distribution for a culture of "respect" (Li et al. (2021)). DEMOCRATIC_FIRM (REPUBLICAN_FIRM) is a dummy variable that equals 1 if a firm's headquarters are located in a state that voted in favor of (> 60%) of a Democratic (Republican) presidential candidate in the most recent presidential election, and 0 otherwise. LEAST_SEXIST_STATE_CULTURE (MOST_SEXIST_STATE_CULTURE) is a dummy variable that equals 1 if a state's sexism ranking is in the two lowest (highest) categories based on Figure 2 of Charles et al. (2018). All variables are defined in the Appendix. Wild bootstrapped *t*-statistics are obtained by resampling 999 times over firm-year clusters using the Boottest command in Stata 16 (Roodman et al. (2019)) and are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
DIVERSITY_STRENGTH	0.000 (0.008)					
DIVERSITY_STRENGTH × GENDER_EQUALITY_SVI	0.086*** (3.109)					
DIVERSITY_CONCERN	-0.002 (-0.097)					
DIVERSITY_CONCERN × GENDER_EQUALITY_SVI	-0.136*** (-3.377)					
RESPECTFUL_CULTURE		-0.006* (-1.875)				
RESPECTFUL_CULTURE × GENDER_EQUALITY_SVI		0.014* (1.780)				
DISRESPECTFUL_CULTURE		0.004 (1.345)				
DISRESPECTFUL_CULTURE × GENDER_EQUALITY_SVI		-0.015** (-2.415)				
LEAST_SEXIST_STATE_CULTURE × GENDER_EQUALITY_SVI			0.024** (2.133)			
MOST_SEXIST_STATE_CULTURE × GENDER_EQUALITY_SVI			-0.009 (-0.959)			
HAS_FEMALE				0.073*** (11.061)		
HAS_FEMALE × GENDER_EQUALITY_SVI				0.085*** (3.546)		
DIRECTOR_GENDER_EXPOSURE					-0.012 (-1.281)	
DIRECTOR_GENDER_EXPOSURE × GENDER_EQUALITY_SVI					0.090*** (2.982)	
DEMOCRATIC_FIRM						-0.005 (-1.458)
DEMOCRATIC_FIRM × GENDER_EQUALITY_SVI						0.017* (1.812)
REPUBLICAN_FIRM						-0.004 (-0.640)
REPUBLICAN_FIRM × GENDER_EQUALITY_SVI						0.013 (0.405)
log(BOARD_SIZE)	-0.002 (-0.318)	0.001 (0.144)	0.008** (2.313)	-0.009*** (-3.222)	0.006* (1.819)	0.008** (2.403)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	24,277	52,813	52,813	52,813	52,813	54,441
Adj. <i>R</i> ²	0.775	0.749	0.749	0.808	0.751	0.749

firm's diversity strengths and decreases in a firm's diversity concerns, suggesting that public attention to gender equality does not lead to convergence in corporate practices.

Results are robust when we use different proxies for a corporate culture related to gender and diversity issues. Li et al. (2021) measure corporate culture using machine learning techniques applied to earnings call transcripts. They construct a core corporate value of respect, which is associated with stronger diversity policies, but differently from diversity ratings, it is more likely to capture a firm's aspirations. We create a dummy variable `RESPECTFUL_CULTURE` (`DISRESPECTFUL_CULTURE`) that equals one if in a given year a firm's core value of respect in Li et al. (2021) is in the top (bottom) quartile of the sample distribution. The results in column 2 of Table 3 show that firms with a respectful culture tend to respond positively to heightened public attention to gender equality, whereas we observe the contrary in firms with a disrespectful corporate culture, consistent with our findings based on firms' diversity ratings.

We also consider culture in a firm's headquarters state as an alternative proxy. Charles, Guryan, and Pan (2018) construct a state-level sexism index from the 1977–1998 waves of the General Social Survey. Based on their index, we create a dummy variable `LEAST_SEXIST_CULTURE` (`MOST_SEXIST_CULTURE`) that equals one if the state's sexism ranking is in the lowest (highest) two categories (out of a total of seven).⁴ Using this proxy that reflects past, but persistent cultural values in the headquarters' state, we find that firms headquartered in the least sexist states tend to respond positively to heightened public attention to gender equality, whereas we find no effect of public attention to gender equality for firms in the most sexist states.

In the rest of Table 3, we proxy for corporate culture using characteristics of the management team. Top management plays a vital role in establishing and maintaining a firm's culture and attitudes toward gender equality (Tate and Yang (2015), Duchin, Simutin, and Sosyura (2021)). We thus expect that firms whose leadership is more favorable to gender equality respond more positively to increases in public attention.

To capture managerial awareness of gender equality issues, we consider several measures. First, the presence of female directors may reflect awareness of gender biases and other challenges to gender diversity not only because female directors may tune into changing public attention to gender equality more than male directors, but also because women in managerial positions create a female-friendly culture (Tate and Yang (2015)). We thus expect boards with female directors to respond more positively to heightened public attention than those with no female directors. Indeed, in column 4 of Table 3, following years of stronger public attention to gender equality, the proportion of female directors increases more in firms that already have female directors.

Next, the psychology and economics literatures suggest that individuals more exposed to female role models in professional settings tend to be less biased against career women (see, e.g., Marx and Roman (2002), Stout, Dasgupta, Hunsinger, and McManus (2011)). We thus conjecture that directors that have been more exposed

⁴Since these dummies are not time-varying, the direct effects are absorbed by the firm fixed effects.

to female directors on other boards might be more receptive of public attention to gender equality. We define `DIRECTOR_GENDER_EXPOSURE` as the average board gender ratio in listed companies in which a firm's current directors previously served. Column 5 of [Table 3](#) shows that the board gender ratio of firms whose directors have been more exposed to female directors indeed responds more positively to public attention to gender equality.

We also consider the political orientation of the top management. Since the Democratic platform emphasizes gender equality and affirmative action more than the Republican platform, we expect Democratic-leaning managers to be more receptive and respond more positively to increases in public attention to gender equality than Republican-leaning managers. We conjecture that the state-level political orientation should be related to the political stance of a firm's management because a firm's leadership is largely local and responds to the pressure of local stakeholders. We thus collect information on state-level presidential elections outcomes. We define a dummy `DEMOCRATIC_FIRM` (`REPUBLICAN_FIRM`) that takes a value equal to one if the firm is headquartered in a state in which more than 60% of the votes went for a Democratic (Republican) presidential candidate in the most recent presidential election.

Consistent with our prior, column 6 of [Table 3](#) shows that firms in Democratic-leaning states increase female board representation following periods of high public attention to gender equality, whereas we do not find a significant effect for firms in Republican-leaning states.

C. Robustness

[Table 4](#) presents an array of robustness tests. First, it explores whether our findings are driven by the large increase in public attention to gender equality in the most recent years of the sample. In the beginning of the sample, public attention to gender equality was relatively high and then decreased. Column 1 estimates the specification in column 1 of [Table 3](#) over a sample period up to 2013. Our results are invariant, suggesting that our findings are not exclusively driven by the recent surge in public attention to gender equality.

To address the concern that the cross-sectional differences in female board representation we observe are driven by other national trends during the sample period, in column 2 of [Table 4](#), we consider the state-level index of public attention to gender equality. We still find that board gender diversity increases to a larger extent in firms with high diversity ratings in periods of high public attention to gender equality.

In columns 3 and 4 of [Table 4](#), we consider that board composition is slow to change because boards do not necessarily have open positions every year. Our empirical specifications so far capture that heightened public attention may lead firms to increase board size to appoint a woman, and that during periods of high public attention, firms have an incentive to substitute departing male directors with women. We expect the effect of public attention to be more pronounced in a subsample of firms that have to appoint new directors because current directors are retiring. We identify those firms as firms with a fraction of directors at retirement age above the sample median. Following Pan, Wang, and Weisbach (2016), we set

TABLE 4
Robustness

In Table 4, the dependent variable is BOARD_GENDER_RATIO. GENDER_EQUALITY_SVI is the average Google search intensity of the term "gender equality" in the prior year (scaled by 100). GENDER_EQUALITY_SVI_(STATE) is the average Google search intensity of the term "gender equality" in the prior year (scaled by 100) and varies by state-year. DIVERSITY_STRENGTH (DIVERSITY_CONCERN) is the number of diversity strengths (concerns) of a firm, divided by the total number of diversity dimensions on which the firm is evaluated. The subsamples "Greater (Less) Need-to-Hire" include firm-years in which the fraction of directors at retirement age is greater (less) than the sample median. The retirement age is set at 65 for inside directors and 72 for independent directors. SHARE_BIG_THREE is the total percentage ownership held by the largest 3 institutional investors of a firm as of year 2016. All variables are defined in the Appendix. In all columns, but column 5, wild bootstrapped *t*-statistics are obtained by resampling 999 times over firm-year clusters using the Boottest command in Stata 16 (Roodman et al.(2019)) and are reported in parentheses. In column 5, the *t*-statistics cannot be bootstrapped using Boottest due to the large number of fixed effects, and we cluster standard errors by firm and year. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	Up to 2013	Full Sample	Greater Need- to-Hire	Less Need- to-Hire	Full Sample	Full Sample	Full Sample
	1	2	3	4	5	6	7
DIVERSITY_STRENGTH	-0.038 (-1.258)	0.027** (2.643)	-0.014 (-1.193)	0.016 (0.991)	-0.006 (-0.659)	-0.004 (-0.261)	0.015 (0.506)
DIVERSITY_STRENGTH × GENDER_EQUALITY_SVI	0.214* (1.819)		0.099** (2.799)	0.022 (0.709)	0.082** (3.815)	0.096*** (3.334)	0.086** (2.847)
DIVERSITY_CONCERN	0.045** (1.966)	-0.038*** (-2.887)	0.020 (1.088)	-0.013 (-0.615)	-0.005 (-0.203)	0.009 (0.403)	-0.003 (-0.218)
DIVERSITY_CONCERN × GENDER_EQUALITY_SVI	-0.275*** (-3.187)		-0.124** (-2.924)	-0.039 (-0.991)	-0.139** (-2.930)	-0.173*** (-3.725)	-0.126** (-2.708)
GENDER_EQUALITY_SVI_(STATE)		-0.014 (0.018)					
DIVERSITY_STRENGTH × GENDER_EQUALITY_SVI_(STATE)		0.061*** (2.936)					
DIVERSITY_CONCERN × GENDER_EQUALITY_SVI_(STATE)		-0.074 (-1.283)					
log(BOARD_SIZE) × GENDER_EQUALITY_SVI						-0.080*** (0.011)	
SHARE_BIG_THREE × AFTER_2016							0.030 (0.686)
DIVERSITY_STRENGTH × SHARE_BIG_THREE × AFTER_2016							0.065 (0.398)
DIVERSITY_CONCERN × SHARE_BIG_THREE × AFTER_2016							0.216 (1.523)
DIVERSITY_STRENGTH × SHARE_BIG_THREE							-0.054 (-0.453)
DIVERSITY_CONCERN × SHARE_BIG_THREE							-0.043 (-0.672)
DIVERSITY_STRENGTH × AFTER_2016							-0.018 (-0.624)
DIVERSITY_CONCERN × AFTER_2016							-0.029 (-1.236)
log(BOARD_SIZE)	0.002 (0.397)	-0.038 (-0.283)	0.001 (0.172)	0.003 (0.194)	0.002 (0.521)	0.023** (2.844)	-0.004 (-0.717)
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State-industry-tear FEs					Yes		
No. of obs.	20,253	24,267	6,442	5,617	19,286	24,277	18,874
Adj. R ²	0.803	0.774	0.839	0.809	0.769	0.776	0.736

the retirement age at 65 for inside directors and 72 for independent directors. The results in columns 3 and 4 confirm that the effect of public attention on firms with different culture is driven by firms that have to appoint a larger number of new directors. We do not observe any differential response for firms that are unlikely to have to appoint new directors. This supports our interpretation of the results and

mitigates concerns that our proxies for corporate culture based on predetermined diversity ratings may capture other firm characteristics.

Another possible concern is that the differential effect of public attention that we attribute to corporate culture reflects differences in the availability of female directors across industries or geographical areas. For instance, firms with a culture more favorable to women may actually be in industries or states with more women in female leadership. Since the supply of directors is largely local and industry-specific (Knyazeva, Knyazeva, and Masulis (2013), Alam, Chen, Ciccotello, and Ryan (2014)), this could explain why some firms are able to react to public attention by increasing the proportion of female directors.

To evaluate the merit of this alternative explanation, in column 5 of Table 4, we control for interactions of state, industry, and year fixed effects. The coefficient on the interaction term between DIVERSITY_STRENGTH (DIVERSITY_CONCERN) and the GENDER_EQUALITY_SVI remains unchanged after including state–industry–year fixed effects, suggesting that supply constraints are unlikely to explain our results.⁵

In column 6 of Table 4, we evaluate the possibility that the effects of DIVERSITY_STRENGTH (DIVERSITY_CONCERN) may conceal differences in board size. If all boards have at least a woman, smaller boards may have a higher proportion of female directors and appear more diverse. Although it is true that firms with ex ante smaller boards experience larger increases in the gender ratio when public attention to gender equality increases, we find no evidence that this effect is related to that of DIVERSITY_STRENGTH (DIVERSITY_CONCERN). If anything, the effect of DIVERSITY_STRENGTH (DIVERSITY_CONCERN) in response to changes in public attention to gender equality is even larger once we take into account board size.

D. The Role of Institutional Investors

A potential mechanism underlying the effect of public attention to gender equality is that firms cater to changing investor preferences on gender equality and board diversity, which in turn may be related to broader societal preferences. We thus examine the role of institutional investors in explaining the effect of public attention to gender equality on board gender diversity.

To capture this mechanism, following Gormley, Gupta, Matsa, Mortal, and Yang (2020), we consider the campaigns that the Big Three institutional investors, Blackrock, State Street, and Vanguard, started in 2017 to increase female directorships. We compute the percentage ownership of the Big Three in a firm as of 2016 using Thompson Reuters 13F data and interact the Big Three ownership with a dummy variable that takes a value equal to one after 2016. We also allow the effects of institutional investor pressure to differ between firms with different culture.

In column 7 of Table 4, the effect of public attention to gender equality on firms with different culture is qualitatively and quantitatively unchanged after we control for the potential effects of the Big Three's campaigns. Even if not

⁵In this specification, we cluster standard errors by firm and year, instead of bootstrapping, because the boottest procedure in Stata cannot be run with high-dimensional fixed effects. The statistical significance of the interaction term of interest would be larger if we clustered only by firm.

statistically significant at conventional levels, the coefficients on the triple interaction between `BIG_THREE_SHARE`, `POST_2016`, and `DIVERSITY_CONCERN` suggests that the Big Three campaigns increase board diversity in companies with an ex ante corporate culture that is *less* well disposed toward gender equality, which is consistent with the Big Three's stated campaign goals.⁶

Overall, institutional investor pressure does not appear to explain the effect of public attention to gender equality on board diversity. This suggests that the documented changes in board diversity in different types of firms during periods of heightened public attention are likely to be driven by forces within the firm.

E. Discussion

Overall, it appears that although corporate leadership reflects societal concerns about gender equality, public attention to gender equality reinforces differences between firms. Decision-makers in firms that are already better disposed toward gender equality are likely to always have been more favorable to women, and their awareness of gender issues may be further strengthened by public attention. In contrast, in organizations in which traditional gender stereotypes prevail, public attention to gender equality could create a perceived sense of injustice and lead to backlash against women, effects that have shown in experiments following quotas and affirmative action (Leibbrandt, Wang, and Foo (2018)). Backlash against unpopular judicial decisions has also been documented to exacerbate racist rhetoric in Southern politics and resistance to LGBT rights (Keck (2009)).

IV. Director Appointments

This section explores how greater female representation is achieved during periods of high public attention to gender equality. Specifically, we explore how recruiting practices change and whether there is evidence that the skills of directors are diluted during periods of high public attention to gender equality.

A. Broadening the Female Director Pool

We investigate whether public attention to gender equality increases gender differences in the qualifications and experiences of the newly appointed directors. To examine how gender differences in director characteristics vary with public attention to gender equality, we consider different director skills and qualifications as dependent variables and test whether the interaction between the female director dummy and the `GENDER_EQUALITY_SVI` in the 12 months before the director appointment is statistically significant. Specifically, Table 5 presents estimates of the following equation:

$$\text{CHARACTERISTICS}_{i,f,m,y} = \beta_1 \text{FEMALE}_i + \beta_2 \text{FEMALE}_i \times \text{SVI}_{m,y} + \Gamma_{f,y} + \varepsilon_{i,m,y},$$

where $\text{CHARACTERISTICS}_{i,f,m,y}$ is a characteristic (e.g., industry experience) of director i whose appointment by firm f starts in month m of year y . The dummy

⁶For example, State Street targeted firms with no female director, and BlackRock emphasized its expectation that each board should have at least two female directors.

TABLE 5
Public Attention to Gender Equality and Characteristics of Newly Appointed Directors

Table 5 reports the effect of public attention to gender equality on the characteristics of newly appointed directors. The dependent variables capture characteristics and qualifications of a newly appointed director at the time of appointment. In Panel A, BRAND_NEW_TO_BOARDEX indicates that a director has not held any corporate directorships even in unlisted companies in BoardEx at the time of appointment. BRAND_NEW_TO_LISTED_CO indicates that a director serves as a publicly traded company director for the first time. #_OF_OTHER_BOARD_SEATS is the number of listed companies' boards on which a director currently serves other than the given appointment. NO_INDUSTRY_EXPERIENCE indicates that the director has no experience in the current board's (2-digit SIC) industry before the appointment. CONNECTED indicates that the director has overlapped with the existing director(s) before the appointment. In Panel B, ADVANCED_DEGREE is a dummy variable that takes a value equal to 1 if a director has an academic degree more advanced than college. PROFESSIONAL_AWARDS is a dummy variable that takes a value equal to 1 if a director has won professional awards. "CEO/EXECUTIVE/BOARD_CHAIRMAN" indicates that a director has been a CEO/top executive/board chairman before the appointment. #_OF_BOARDS_PREVIOUSLY_SERVED is the number of distinctive boards (of public or private companies) in which a director has served before the appointment. QUOTED_COMPANY indicates that the director has experience in publicly traded companies before the appointment. #_OF_INDUSTRIES is the number of distinctive (2-digit SIC) industries in which a director gained experience before the appointment. MILITARY/GOVERNMENT/ACADEMIA/SOCIAL/FINANCE indicates that a director has military/government/academia/social (e.g., charities, clubs, and sporting companies)/finance sector (banking, insurance, private equity, investment companies, and other specialty finance) experience. GENDER_EQUALITY_SVI is the average Google search intensity of the term "gender equality" during the 12 months before a director's appointment starts (scaled by 100). "Female Director" indicates that the director is a female. Director age is the age of the director based on his or her birth year. All remaining variables are defined in the Appendix. t-Statistics with standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Does Public Attention to Gender Equality Broaden the Female Director Pool?

	BRAND_NEW_TO_BOARDEX	BRAND_NEW_TO_LISTED_CO	#_OF_OTHER_BOARD_SEATS	NO_INDUSTRY_EXPERIENCE	CONNECTED
	1	2	3	4	5
FEMALE	0.057*** (4.247)	0.028** (2.031)	0.167*** (2.779)	-0.021*** (-3.115)	-0.039*** (-3.764)
FEMALE x GENDER_EQUALITY_SVI	0.072 (0.730)	0.185* (1.908)	-0.675** (2.133)	0.058** (2.280)	-0.168* (-1.936)
GENDER_EQUALITY_SVI	0.759** (2.450)	-0.111 (-0.358)	0.226 (0.324)	0.094 (0.875)	-0.293 (-1.014)
log(DIRECTOR_AGE)	-0.199*** (-8.289)	-0.640*** (-24.788)	1.118*** (17.413)	-0.041*** (2.996)	0.038** (2.176)
Firm-year FEs	Yes	Yes	Yes	Yes	Yes
No. of obs.	42,683	42,683	42,683	42,683	42,683
Adj. R ²	0.252	0.257	0.920	0.595	0.452

Panel B. General Experiences and Qualifications

	log(AGE)	ADVANCED_DEGREE	PROFESSIONAL_AWARDS	CEO	EXECUTIVE	BOARD_CHAIRMAN	#_OF_BOARDS_PREVIOUSLY_SERVED	LISTED_COMPANY	#_OF_INDUSTRIES	MILITARY	GOVERNMENT	ACADEMIA	SOCIAL	FINANCE	Director HUMAN CAPITAL
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
FEMALE	-0.041*** (-8.576)	0.088*** (6.692)	0.164*** (10.865)	-0.112*** (-8.476)	-0.105*** (-6.969)	-0.150*** (-12.355)	-0.962*** (-7.233)	0.003 (0.225)	-0.210*** (-2.611)	-0.020*** (-5.447)	0.059*** (5.178)	0.056*** (4.980)	0.029*** (3.917)	-0.034** (-2.267)	-0.094*** (-7.899)
FEMALE x GENDER_EQUALITY_SVI	0.012 (0.383)	-0.121 (-1.309)	0.124 (1.155)	-0.175* (-1.749)	0.020 (0.192)	-0.134 (-1.527)	1.955* (1.852)	-0.133 (-1.505)	-0.462 (-0.785)	0.023 (0.859)	-0.023 (-0.290)	-0.118 (-1.550)	-0.030 (-0.614)	0.114 (1.107)	0.176** (2.421)
GENDER_EQUALITY_SVI	-0.165 (-1.428)	-0.113 (-0.448)	-0.443 (-1.439)	0.035 (0.104)	-0.168 (-0.553)	-0.490 (-1.622)	-4.933 (-1.640)	0.046 (0.161)	-3.155* (-1.760)	-0.034 (-0.376)	-0.128 (-0.596)	-0.176 (-0.788)	-0.065 (-0.454)	-0.212 (0.656)	0.122 (0.683)
log(DIRECTOR_AGE)		-0.046** (-2.161)	0.362*** (14.383)	0.034 (1.357)	0.195*** (7.041)	0.446*** (18.204)	2.375*** (7.717)	0.380*** (14.394)	2.294*** (13.431)	0.116*** (10.976)	0.199*** (11.177)	0.187*** (10.297)	0.069*** (5.925)	0.006 (0.222)	
Firm-Year FEs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	42,683	42,683	42,683	42,683	42,683	42,683	42,683	42,683	42,374	42,683	42,683	42,683	42,683	42,683	14,645
Adj. R ²	0.082	0.043	0.142	0.055	0.116	0.066	0.011	0.262	0.070	0.036	0.091	0.020	0.010	0.185	0.234

FEMALE_{*i*} takes a value equal to one if director *i* is female. The matrix $\Gamma_{f,y}$ includes interactions of firm and year fixed effects.

In practice, we compare female directors and male directors appointed by the same firm during the same year by including interactions of firm and year fixed effects. Although this implies that our inference is based on 13% of the firms that appoint both new male and female directors in a year, the within-firm estimator allows us to control for shocks that may affect the way firms recruit both male and female directors and make sure that any differences between female and male directors are not driven by the fact that different firms require different director skills.⁷ Since director appointments can occur in different months of the year, the direct effect of the GENDER_EQUALITY_SVI over the previous 12 months can be estimated even if we include year fixed effects.

In Panel A of Table 5, we ask whether public attention to gender equality increases the pool of women that are available to serve on boards. To evaluate whether this is the case, we consider that BoardEx also includes directors of unlisted companies and nonprofit organizations. Presumably, all the existing directors in BoardEx are available to serve on the more remunerative and prestigious boards of listed companies. For public attention to gender equality to increase the total supply of women for board positions, we should observe that the female directors newly appointed by listed companies during periods of heightened public attention to gender equality are more likely to be new entries in BoardEx. Column 1 suggests that this is not the case. Although female directors are more likely to be new entries in BoardEx relative to their male counterparts, heightened public attention to gender equality does not draw more women into BoardEx.

Column 2 of Table 5 suggests that public attention to gender equality does increase the probability that women not serving on the boards of listed companies are appointed to those boards, as captured by the indicator variable BRAND_NEW_TO_LISTED_CO, which equals 1 if the newly appointed director did not serve on the board of a listed company before the current appointment. Women are more likely than men not to have served on the board of a listed company before the current appointment and become even more so following an increase in public attention to gender equality. This result suggests that heightened public attention is associated with a greater pool of women (already in BoardEx) serving on listed companies' boards.

In column 3 of Table 5, the dependent variable #_OF_OTHER_BOARD_SEATS is the number of other public company directorships that a person has at the time of the current appointment. Typically, female directors are more likely than their male counterparts to have other directorships in public companies at the time of the appointment. However, heightened public attention is associated with a decrease in the number of other public company directorships. This result confirms the finding in column 2 that the increased demand due to public attention does not simply translate into more directorships for women who are already on listed companies' boards.

⁷The characteristics of male and female directors do not appear to differ between firms with different culture.

Firms tend to appoint directors with experience in their own industry (Denis, Denis, and Walker (2018)). Although directors' industry experience is often found to add value (Dass, Kini, Nanda, Onal, and Wan (2013), Adams et al. (2018), and Kang, Kim, and Lu (2018)), competences from other industries may bring firms a broader perspective and complementary skills (Custodio, Ferreira, and Matos (2013)).

To evaluate whether there are any differences in industry experience between directors appointed to the board of the same firm, we define a dummy variable, `NO_INDUSTRY_EXPERIENCE`, which equals one if a director has no prior experience in the firm's 2-digit SIC industry before the current appointment. Column 4 of Panel A of Table 5 shows that women are less likely than men to have no industry experience, suggesting that women may need more certification to be viewed as qualified. Deeper networks between men, which span across industries, may also lead firms to appoint relatively more men without industry experience. However, heightened public attention to gender equality is associated with an increase in the probability that a woman with no prior industry experience is appointed. Interestingly, women continue to be more likely to have industry experience than newly appointed men, when public attention to gender equality is equal to the sample median. This result suggests that when public attention to gender equality increases, listed companies appear to be willing to search more broadly for their female directors.

Social ties are known to be an important determinant of employees' selection (e.g., Hensvik and Nordström Skans (2016)) and to matter also for the selection of directors on corporate boards (e.g., Shivdasani and Yermack (1999), Fracassi and Tate (2012), and Cai, Nguyen, and Walkling (2019)). We study whether there are any differences in prior connections to the board between newly appointed female and male directors. We define two individuals as connected if they have overlapped in prior employment, university, social clubs, or nonprofit organizations. We define a dummy variable, `CONNECTED`, which equals one if a newly appointed director has previous connections with current members of a board. Column 5 of Panel A of Table 5 suggests that female directors are less likely to have connections with current board members relative to their male counterparts and become even more so when public attention to gender equality increases, suggesting that public attention makes firms more open to female candidates outside their board network.

B. Qualifications and Experiences

Panel B of Table 5 examines how gender differences in directors' general qualifications and leadership experience vary with public attention to gender equality. All the experience variables reflect a director's cumulative experience up to the current board appointment. The first three columns in Panel B of Table 5 suggest that compared to male directors appointed by the same firm in the same year, female directors are on average younger, but are more likely to have obtained advanced educational degrees (above college) and professional awards, consistent with the findings of Ahern and Dittmar (2012). Public attention to gender

equality does not affect gender differences in these characteristics for newly appointed directors.

Columns 4–7 of Panel B of [Table 5](#) show that compared to male directors, female directors are expectedly less likely to have top leadership experience as CEO, top executive, or board chairman. They also have sat on the boards of fewer companies before the appointment.⁸ Following heightened public attention to gender equality, newly appointed female directors are even less likely to have CEO experience, but they are more likely to have prior board experience. Overall, there is no systematic widening of the gender leadership gap following an increase in public attention to gender equality.

Columns 8–14 of Panel B of [Table 5](#) explore several other dimensions of the director's background. The results again indicate that there are gender differences in director experience. Compared to male directors appointed by the same firm at the same time, female directors tend to have worked in fewer industries, are less likely to have finance or military experience, but more likely to have prior experience in government, academia, and nonprofit organizations, such as charities and clubs. Public attention to gender equality does not change the extent of these differences.

Finally, we create a summary statistic of a director's human capital as follows: Using the first half of our sample period (2004–2010), we regress the announcement returns of director appointments on all the director characteristics considered in [Table 5](#). Then, we use the coefficient estimates from this regression to predict director appointment announcement returns in the second half of the sample period (2011–2017). The predicted announcement returns can be interpreted as a proxy for the director's human capital, because they reflect how in the past the market assessed a director's value added based on his or her characteristics. Column 15 of Panel B shows that the gender gap in director human capital actually decreases as public attention to gender equality increases, indicating that the increase in female board representation is not achieved by compromising on director quality.

Not only the skills of the women appointed to a board in periods of high public attention are such that they were highly valued by the market in the past, but in [Table 6](#), the female directors also appear as likely as before to serve on important committees, such as the compensation committee, the audit committee, and the nomination committee.

In columns 4–6 of [Table 6](#), female directors appear to be less likely to have leadership roles (e.g., to chair a committee or be the Chairman of the Board), which resonates with the findings of Field, Souther, and Yore (2020). However, heightened public attention to gender equality tends to increase the probability of women becoming executives or obtaining leadership roles on the board. A one-standard-deviation increase in public attention corresponds to a 19% reduction of the gender gap in board committee chair positions and a 12% reduction of the gender gap in the board chairman position.

⁸Note that `#_OF_BOARDS_PREVIOUSLY_SERVED` in Panel B of [Table 5](#) is different from `#_OF_OTHER_BOARD_SEATS` in Panel A, as the former reflects the cumulative board experience of an individual up to the current board appointment and it includes experiences in boards of public, private, or nonprofit companies, whereas the latter reflects only current board appointments and includes only listed companies.

TABLE 6
Public Attention to Gender Equality and Director Responsibilities

Table 6 reports the effect of public attention to gender equality on a director's probability of serving on a particular board committee, as the chair of a board committee or of the Board. All dependent variables are indicated on top of each column. All variables are defined in the Appendix. *t*-Statistics with standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

	COMPENSATION_ COMMITTEE	AUDIT_ COMMITTEE	NOMINATION_ COMMITTEE	EXECUTIVE_ COMMITTEE	COMMITTEE_ CHAIR	BOARD_ CHAIR
	1	2	3	4	5	6
FEMALE	0.012 (0.077)	0.035** (2.486)	0.038*** (3.099)	-0.058*** (-7.279)	-0.069*** (-5.308)	-0.057*** (-13.010)
FEMALE × GENDER_ EQUALITY_SVI	0.007 (0.294)	-0.045 (1.616)	0.011 (0.470)	0.032** (2.254)	0.081*** (2.893)	0.038*** (4.574)
log(DIRECTOR_AGE)	0.075*** (3.589)	0.140*** (6.216)	0.148*** (7.609)	-0.034*** (-3.009)	0.179*** (10.529)	0.079*** (7.407)
log(DIRECTOR_ TENURE)	0.052*** (14.639)	-0.026*** (-6.813)	0.063*** (18.367)	0.065*** (22.846)	0.148*** (49.333)	0.022*** (12.702)
ADVANCED_DEGREE	0.010 (0.171)	-0.016** (-2.027)	0.026*** (3.677)	-0.005 (-1.125)	0.004 (0.667)	-0.003 (-0.908)
PROFESSIONAL_ AWARDS	0.021*** (3.318)	-0.113*** (-16.883)	0.036*** (6.361)	0.002 (0.636)	-0.018*** (-3.600)	0.010*** (3.108)
#_OF_OTHER_ BOARD_SEATS	0.008*** (3.581)	0.009** (5.130)	0.010*** (5.415)	-0.003 (-1.559)	0.022*** (7.333)	0.002** (2.430)
CEO_EXPERIENCE	0.001 (0.157)	-0.103*** (-16.701)	-0.050*** (-9.026)	0.047*** (13.340)	-0.043*** (-8.600)	0.052*** (15.666)
Firm-year FEs	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	184,732	184,732	184,732	184,732	184,732	184,732
Adj. R^2	0.080	0.011	0.228	0.342	0.028	0.087

Overall, these results indicate that broadening the female directors' pool does not appear to dilute the board's skills, but rather leads to the appointment of directors that can effectively contribute to the boards on which they serve.

C. Connections and Recruiting Policies

As shown in Panel B of Table 1, 20% of the directors of the listed companies in our sample belong to the social circle of existing board members because they overlapped in previous jobs, educational programs, or social activities. Thus, individuals with prior connections to current directors are a relevant pool from which firms select new directors.

Existing literature suggests that hiring through connections can be efficient because it reduces information asymmetry and search costs (Hensvik and Nordström Skans (2016)). Newly appointed female directors may be less likely to be connected to current board members than their male counterparts because the networks of current directors mostly include men. Firms with high demand for female directors may be willing to go a long way to identify and appoint unconnected women, even if this implies overcoming search costs and information asymmetries.

However, network-based appointments can also accentuate homophilistic biases if current directors prefer to interact with their male acquaintances and consider them more qualified or simply more likable than women.⁹

⁹Homophilistic biases refer to the tendency of individuals to associate, interact, and bond with others who possess similar characteristics and backgrounds, including gender (e.g., McPherson, Smith-Lovin, and Cook (2001), Gompers, Mukharlyamov, and Xuan (2016), and Ewens and Townsend (2020)).

To explore why women are less likely to have connections to current board members and become even more so when public attention to gender equality increases, we focus on all individuals in BoardEx that are connected to existing board members of listed companies because of past overlaps in previous jobs, during their university education, or in some social activities. This sample includes not only individuals who serve or have served on the boards of listed companies, but also individuals on the boards of private firms and nonprofit organizations.

Controlling for individuals' qualifications and experience, we ask whether there are any gender differences in the probability that these connected individuals are appointed to the board of a listed company. If boards were to strive to identify female candidates, *ceteris paribus*, connected female directors should be more likely to be appointed to the boards of listed companies than connected male candidates. If instead biases prevailed when new appointees come from the current directors' social circle, women with connections may be less likely to be appointed to the boards of listed companies than similarly qualified men. We also explore how public attention to gender equality affects gender differences, if any, in connected directors' appointments.

The results are reported in [Table 7](#). All specifications include interactions of firm and time fixed effects, which fully absorb firm-specific shocks and the yearly SVI.¹⁰ Column 1 of Panel A shows that compared to connected male directors, connected female directors are less likely to be appointed to the board of a listed company. Such gender differences are somewhat reduced, but still statistically significant in column 2, when we control for the nature of the directors' previous experiences, for whether the potential candidate ever held a board appointment in a listed company, for the number of positions held in the past, proxied using job titles, and for the director age. Given the small probability that any connected director is appointed, the coefficient estimate in column 2 implies that connected women are 10% less likely to be appointed to the board of a listed company than connected men. This suggests that search costs are unlikely to play a role in explaining female board underrepresentation as connected women, which are as easy to identify as their male counterparts, are less likely to be appointed.

If homophilistic biases lead male-dominated boards to favor connected men over connected women, then we should observe that the disadvantage of connected women becomes less pronounced in boards that already have women. Column 3 of [Table 7](#) shows that the lower probability of connected women being appointed is indeed driven by firms without female directors, suggesting that homophilistic biases, rather than skills, lower the probability that connected women are appointed. As public attention to gender equality increases and boards appoint more women, homophilistic biases in the appointment of female directors should decrease.

Column 4 of [Table 7](#) confirms this conjecture. We test how the propensity to appoint connected directors of different genders varies with public attention to

¹⁰Differently from the sample in [Table 5](#), this sample includes individuals in the network that are never appointed to the board. For this reason, we explore differences between individuals that are appointed by a firm during a year and other individuals who belong to the network of current directors that are not appointed.

gender equality. Since public attention does not change the quality of past connections, an increase in the probability of connected women being appointed relative to connected men would indicate a change in director selection practices.

We find that when public attention to gender equality is higher, connected female directors become relatively more likely to be appointed. However, connections favor the appointment of female over male directors only when public attention to gender equality is in the top quartile of its distribution (> 0.5). The results in column 4 of Table 7 are qualitatively unchanged if we restrict the sample to current directors' previous connections through work experiences in listed companies (column 5).

Since all potential directors have previously overlapped with current members of the board, we also examine the role played by the intensity of the connections. Women may have loose connections with members of their networks, explaining why they are less likely to be appointed.

TABLE 7
Connections and Director Appointments

In Table 7, the dependent variable is equal to 100 if director j is appointed to the board of listed company i in year t and equal to 0 if the potential director is not appointed. In all columns, but column 5 of Panel A, potential directors of listed company i include any individuals in BoardEx that have previously overlapped with the current directors of listed company i . The current directors of listed company i are excluded. HAS_FEMALE is a dummy variable that equals 1 if a board has at least one female director in the prior year, and 0 otherwise. In column 5 of Panel A, we restrict the sample to previous connections that entail previous work connections in listed companies. In Panel B, CONNECTIONS is a dummy variable capturing whether a potential director j has a prior connection with the current CEO of firm i in columns 1–3, and it is the number of connections between the potential director j and a company's existing directors in columns 4–6. GENDER_EQUALITY_SVI is the average Google search intensity of the term "gender equality" in the prior year. All remaining variables are defined in the Appendix. t -Statistics with standard errors clustered at the firm level are reported in parentheses. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Basic Findings

Sample	All Connections				Connection via Listed Companies Only
	1	2	3	4	5
FEMALE	-0.0005*** (-5.178)	-0.0003*** (-2.713)	-0.001*** (-6.771)	-0.001*** (-4.743)	-0.001*** (-2.738)
HAS_FEMALE × FEMALE			0.001*** (6.198)		
FEMALE × GENDER_EQUALITY_SVI				0.002*** (4.240)	0.003*** (3.731)
EXECUTIVE_EXPERIENCE		0.003*** (31.478)	0.003*** (31.470)	0.003*** (31.473)	0.001*** (10.315)
SOCIAL		-0.002*** (-7.411)	-0.002*** (-7.467)	-0.002*** (-7.475)	-0.000 (-0.320)
ACADEMIC		-0.001*** (-7.845)	-0.001*** (-7.851)	-0.001*** (-7.851)	-0.000 (-0.294)
GOVERNMENT		-0.000*** (-2.616)	-0.000*** (-2.639)	-0.000*** (-2.644)	0.000* (1.830)
MILITARY		-0.001*** (-3.049)	-0.001*** (-3.041)	-0.001*** (-3.044)	-0.001** (-2.309)
LISTED_COMPANY		0.003*** (14.872)	0.003*** (14.864)	0.003*** (14.866)	0.001*** (5.141)
log(DIRECTOR_AGE)		0.003*** (7.033)	0.003*** (7.033)	0.003*** (7.020)	0.003*** (6.411)
#_OF_POSITIONS		0.000*** (9.006)	0.000*** (9.004)	0.000*** (8.994)	0.000** (2.225)
Firm-year FEs	Yes	Yes	Yes	Yes	Yes
No. of obs.	272,996,290	272,996,290	272,996,290	272,996,290	99,684,644
Adj. R ²	0.001	0.001	0.001	0.001	0.003

(continued on next page)

TABLE 7 (continued)
Connections and Director Appointments

Panel B. Intensity of Connections						
Connections	CONNECTION_TO_THE_CEO			#_OF_CONNECTIONS_TO_BOARD_MEMBERS		
	1	2	3	4	5	6
FEMALE	0.001 (1.297)	0.001* (1.828)	0.004*** (3.633)	-0.000*** (-4.003)	-0.000 (-1.565)	-0.001*** (-3.508)
CONNECTIONS	0.007*** (25.470)	0.007*** (25.530)	0.009*** (18.581)	0.003*** (11.863)	0.003*** (11.740)	0.005*** (8.755)
FEMALE × CONNECTIONS	-0.001** (-2.196)	-0.001** (-2.300)	-0.004*** (-4.249)	-0.001*** (-3.179)	-0.001*** (-3.199)	-0.004*** (-3.364)
CONNECTIONS × GENDER_EQUALITY_SVI			-0.006*** (-7.913)			-0.005*** (-4.605)
FEMALE × CONNECTIONS × GENDER_EQUALITY_SVI			0.008*** (3.525)			0.006** (2.296)
FEMALE × GENDER_EQUALITY_SVI			-0.009*** (-3.048)			0.002*** (3.354)
EXECUTIVE_EXPERIENCE		0.003*** (30.587)	0.003*** (30.671)		0.003*** (31.359)	0.003*** (31.371)
SOCIAL		-0.001*** (-2.620)	-0.001*** (-2.814)		-0.002*** (-7.386)	-0.002*** (-7.450)
ACADEMIC		-0.001*** (-6.878)	-0.001*** (-7.055)		-0.001*** (-7.618)	-0.001*** (-7.621)
GOVERNMENT		-0.000 (-1.150)	-0.000 (-1.257)		-0.000** (-2.537)	-0.000** (-2.555)
MILITARY		-0.005*** (-12.131)	-0.005*** (-12.058)		-0.001*** (-3.040)	-0.001*** (-3.031)
LISTED_COMPANY		0.002*** (11.201)	0.002*** (11.118)		0.003*** (14.849)	0.003*** (14.841)
log(DIRECTOR_AGE)		0.002*** (4.478)	0.002*** (4.426)		0.003*** (7.323)	0.003*** (7.316)
#_OF_POSITIONS		0.000*** (8.278)	0.000*** (8.501)		0.000*** (9.032)	0.000*** (9.027)
Firm-year FEs	Yes	Yes	Yes	Yes	Yes	Yes
No. of obs.	272,996,290	272,996,290	272,996,290	272,996,290	272,996,290	272,996,290
Adj. R ²	0.001	0.001	0.001	0.001	0.001	0.001

Existing literature highlights that directors with prior connections to the CEO tend to favor the CEO (Shivdasani and Yermack (1999), Fracassi and Tate (2012)). Hence, connections with a firm's CEO may be important for director appointment. In columns 1–3 of Panel B of Table 7, we define CONNECTIONS as a dummy variable capturing whether a director previously overlapped with a firm's current CEO. We interact this dummy with the FEMALE dummy to test for the existence of gender effects. The results suggest that individuals with prior connections to a firm's CEO are significantly more likely to be appointed to the board. However, the probability that a woman connected to the CEO is appointed is significantly lower relative to a similarly connected man. This result is unlikely to be due to gender differences in qualifications and experiences, as the effect of connections is invariant in column 2 where we control for experience, including leadership and board experience.

In column 3 of Panel B of Table 7, we examine how public attention to gender equality affects the appointment of directors connected to the CEO. We obtain a negative and significant coefficient on the interaction between CONNECTIONS and the GENDER_EQUALITY_SVI and a positive and significant coefficient on the triple interaction among FEMALE, CONNECTIONS, and the GENDER_EQUALITY_SVI. The sum of the two coefficients is not statistically different

from zero. This result suggests that public attention to gender equality decreases the probability that connected men are appointed, while leaving the probability for connected women unchanged.

In columns 4–6 of Panel B of [Table 7](#), we measure the intensity of connections by counting a potential director's number of connections with current members of the board. We obtain results similar to those in columns 1–3. The intensity of connections to current board members helps to explain which directors are appointed to the board of a listed company. However, similarly connected women are less likely to be appointed than men. Column 6 shows that public attention to gender equality decreases the probability that connected men are appointed, while increasing the probability of appointment for connected women.

Overall, the results in [Table 7](#) suggest that search costs are unlikely to explain the underrepresentation of connected women relative to connected men. Connection-based appointments thus appear to be an important reason for female board underrepresentation. This is consistent with anecdotal evidence. For instance, State Street Global Advisors put “excessive reliance on existing director networks and connections” in director appointments as the top reason for female underrepresentation on boards (State Street (2017), p. 1).

V. Conclusion

We show that public attention to gender equality is associated with an overall increase in board gender diversity, but also with divergence in female board representation. The improvement in board gender diversity during periods of heightened public attention is more pronounced in firms with a corporate culture favorable to women than in other firms. We provide evidence that the effect of public attention on these firms is likely to be driven by internal initiatives of the top management rather than by the external pressure from pro-diversity institutional investors.

We also document systematic changes in director recruiting practices in periods of high public attention to gender equality that could foster long-term improvement in female board representation. During periods of heightened public attention, boards reach out to a larger pool of women (e.g., women outside the directors' network or without industry experience), but market-based measures of directors' human capital do not imply that the new female directors' appointments are dilutive of the board's skills. Instead, public attention to gender equality decreases the reliance on social networks in directors' appointments and the appointment of connected men, leading to an increase in female board representation.

Our results can inform the broader debate on diversity and shed light on the interventions that may lead to greater gender (or racial) equality in leadership positions. To the extent that public attention can be induced by policymakers, increasing public awareness could be an alternative intervention to quotas and other affirmative action policies, to overcome inequality and discrimination. The strength of this alternative intervention is that it avoids the cost of imposing one-size-fit-all policies. However, increased public attention appears to have larger effects in firms with a more inclusive culture and may thus fail to achieve convergence between firms regarding these social issues, suggesting that fully achieving social progress may ultimately require more formal government interventions.

Appendix: Variable Definitions

Google Search Trends Data

GENDER_EQUALITY_SVI: The average monthly Google SVI on the term “gender equality” in the previous 12 months.

GENDER_EQUALITY_SVI(STATE): The average monthly Google SVI on the term “gender equality” in the previous 12 months in a state.

Board or Firm-Level Data

BOARD_GENDER_RATIO: The fraction of directors that are female.

BOARD_SIZE: The number of directors on the board.

DIVERSITY_STRENGTH (DIVERSITY_CONCERN): The number of diversity strengths (concerns) that a firm has divided by the total number of diversity dimensions on which the firm is evaluated. Source: the KLD database.

HAS_FEMALE: A dummy variable that equals 1 if a board has female director(s) in a year, and 0 otherwise.

DIRECTOR_GENDER_EXPOSURE: The average board gender ratio in companies connected to a firm’s board of directors.

DEMOCRATIC_FIRM (REPUBLICAN_FIRM): A dummy variable that equals 1 if a firm’s headquarters are located in a state with over 60% of the votes for the Democratic (Republican) presidential candidate in the most recent presidential election, and 0 otherwise.

LEAST_SEXIST_STATE_CULTURE (MOST_SEXIST_STATE_CULTURE): A dummy variable that equals 1 if a state’s sexism ranking is in the two lowest (highest) categories based on Figure 2 of Charles et al. (2018).

RESPECTFUL_CULTURE (DISRESPECTFUL_CULTURE): A dummy variable that equals 1 if in a given year, a firm’s cultural value of respect (Li et al. (2021)) is in the top (bottom) quartile of the sample distribution.

SHARE_BIG_THREE: Proportion of shares outstanding held by Blackrock, Vanguard, and State Street.

SMALL_FIRM: A dummy variable that equals 1 if a firm is in the bottom tercile of the sample distribution in terms of market value of equity, and 0 otherwise.

Director-Level Data

ACADEMIA: Equals 1 if a director has work experience in universities, and 0 otherwise.

ADVANCED_DEGREE: Equals 1 if a director has an academic degree beyond college, and 0 otherwise.

BOARD_CHAIRMAN: Equals 1 if a director has been a board chairman before the appointment, and 0 otherwise.

- BRAND_NEW_TO_BOARDEx:** Equals 1 if a director is a new entry in the BoardEx database, and 0 otherwise.
- BRAND_NEW_TO_LISTED_CO:** Equals 1 if a director serves as a director of a publicly traded company for the first time, and 0 otherwise.
- CEO:** Equals 1 if a director has been a CEO before the appointment, and 0 otherwise.
- COMMITTEE_CHAIR:** A dummy variable that equals 1 if a director serves as the chair of a committee during a year, and 0 otherwise. Multiplied by 100 in the regressions.
- COMPENSATION_COMMITTEE (AUDIT_COMMITTEE, NOMINATION_COMMITTEE, and EXECUTIVE_COMMITTEE):** A dummy variable that equals 1 if a director serves on the Compensation (Audit, Nomination, and Executive) Committee during a year, and 0 otherwise.
- CONNECTED:** Equals 1 if an individual has previously overlapped with current members of the board on previous jobs, during university or in other activities, and 0 otherwise.
- #_OF_CONNECTIONS_TO_BOARD_MEMBERS:** The number of previous connections of an individual with current members of the board of a listed company.
- CONNECTION_TO_THE_CEO:** Equals 1 if an individual has previously overlapped with the current CEO of a given listed company, and 0 otherwise.
- DIRECTOR_AGE:** The age of the director based on his or her birth year.
- DIRECTOR_HUMAN_CAPITAL:** We use the first half of the sample period to run the following estimation: Regress the director announcement returns on all the director characteristics in columns 1–14 of Panels A and B of [Table 5](#) and obtain the coefficient estimates on director characteristics. Then we use these coefficient estimates and the same set of director characteristics to predict director announcement returns in the second half of the sample period. The predicted director announcement returns are labeled “Director Human Capital.”
- DIRECTOR_TENURE:** Tenure of a director on the board.
- EXECUTIVE:** Equals 1 if a director has been a top executive (CEO, CFO, COO, president, founder, or chairman) before the appointment, and 0 otherwise.
- FEMALE:** Equals 1 if an individual is a woman, and 0 otherwise.
- FINANCE:** Equals 1 if an individual has work experience or board experience in the finance industry, and 0 otherwise.
- GOVERNMENT:** Equals 1 if an individual has work experience in government, and 0 otherwise.
- LISTED_COMPANY:** Equals 1 if a director has experience in listed companies before the appointment, and 0 otherwise.
- MILITARY:** Equals 1 if an individual has work experience in the military, and 0 otherwise.
- NO_INDUSTRY_EXPERIENCE:** Equals 1 if a director has no experience in the current board’s 2-digit SIC industry before the appointment, and 0 otherwise.
- PROFESSIONAL_AWARDS:** Equals 1 if a director has professional awards, and 0 otherwise.
- SOCIAL:** Equals 1 if an individual has work experience in nonprofit organizations, such as charities and clubs, and 0 otherwise.

#_OF_BOARDS_PREVIOUSLY_SERVED: The number of distinctive boards (including those of public and private companies) a director has served before the appointment.

#_OF_OTHER_BOARD_SEATS: The number of other listed companies' boards on which a director currently serves.

#_OF_POSITIONS: Number of previous positions (job titles) held by an individual.

References

- Adams, R. B.; A. C. Akyol; and P. Verwijmeren. "Director Skill Sets." *Journal of Financial Economics*, 130 (2018), 641–662.
- Ahern, K. R., and A. K. Dittmar. "The Changing of the Boards: The Impact on Firm Valuation of Mandated Female Board Representation." *Quarterly Journal of Economics*, 127 (2012), 137–197.
- Alam, Z. S.; M. A. Chen; C. S. Ciccotello; and H. E. Ryan. "Does the Location of Directors Matter? Information Acquisition and Board Decisions." *Journal of Financial and Quantitative Analysis*, 49 (2014), 131–164.
- Beaman, L.; R. Chattopadhyay; E. Duflo; R. Pande; and P. Topalova. "Powerful Women: Does Exposure Reduce Bias?" *Quarterly Journal of Economics*, 124 (2009), 1497–1540.
- Bertrand, M.; S. E. Black; A. Lleras-Muney; and S. Jensen. "Breaking the Glass Ceiling? The Effect of Board Quotas on Female Labor Market Outcomes in Norway." *Review of Economic Studies*, 86 (2019), 191–239.
- Besley, T.; O. Folke; T. Persson; and J. Rickne. "Gender Quotas and the Crisis of the Mediocre Man: Theory and Evidence from Sweden." *American Economic Review*, 107 (2017), 2204–2242.
- Boone, A. L.; L. C. Field; J. M. Karpoff; and C. G. Raheja. "The Determinants of Corporate Board Size and Composition: An Empirical Analysis." *Journal of Financial Economics*, 85 (2007), 66–101.
- Cai, J.; T. Nguyen; and R. Walkling. "Director Appointments – It is Who You Know." Working Paper, Drexel University (2019).
- Charles, K. K.; J. Guryan; and J. Pan. "The Effects of Sexism on American Women: The Role of Norms vs. Discrimination." NBER Working Paper No. 24904 (2018).
- Choi, H., and H. Varian. "Predicting the Present with Google Trends." *Economic Record*, 88 (2012), 2–9.
- Custodio, C.; M. A. Ferreira; and P. Matos. "Generalists Versus Specialists: Lifetime Work Experience and Chief Executive Officer Pay." *Journal of Financial Economics*, 108 (2013), 471–492.
- Da, Z.; J. Engelberg; and P. Gao. "In Search of Attention." *Journal of Finance*, 66 (2011), 1461–1499.
- Dass, N.; O. Kini; V. Nanda; B. Onal; and J. Wang. "Board Expertise: Do Directors from Related Industries Help Bridge the Information Gap?" *Review of Financial Studies*, 27 (2013), 1533–1592.
- Denis, D. J.; D. K. Denis; and M. D. Walker. "CEO Assessment and the Structure of Newly Formed Boards." *Review of Financial Studies*, 28 (2015), 3338–3366.
- Denis, D. J.; D. K. Denis; and M. D. Walker. "The Selection of Directors to Corporate Boards." Working Paper, University of Pittsburgh (2018).
- Drake, M. S.; D. T. Roulstone; and J. R. Thornock. "The Determinants and Consequences of Information Acquisition via EDGAR." *Contemporary Accounting Research*, 32 (2015), 1128–1161.
- Duchin, R.; M. Simutin; and D. Sosyura. "The Origins and Real Effects of the Gender Gap: Evidence from CEOs' Formative Years." *Review of Financial Studies*, 34 (2021), 700–762.
- Eckbo, B. E.; K. Nygaard; and K. S. Thorburn. "Valuation Effects of Norway's Board Gender-Quota Law Revisited." *Management Science*, 68 (2022), 4112–4134.
- Erel, I.; L. H. Stern; C. Tan; and M. S. Weisbach. "Selecting Directors Using Machine Learning." NBER Working Paper No. w24435 (2018).
- Ewens, M., and R. R. Townsend. "Are Early Stage Investors Biased Against Women?" *Journal of Financial Economics*, 135 (2020), 653–677.
- Ferreira, D.; E. Ginglinger; M. A. Laguna; and Y. Skalli. "Closing the Gap: Gender Quotas and Corporate Board Composition." Finance Working Paper No. 520/2017, European Corporate Governance Institute (2017).
- Field, C.; M. Souther; and A. S. Yore. "At the Table But Can't Break Through the Glass Ceiling: Board Leadership Positions Elude Diverse Directors." *Journal of Financial Economics*, 137 (2020), 787–814.
- Fracassi, C., and G. Tate. "External Networking and Internal Firm Governance." *Journal of Finance*, 67 (2012), 153–194.

- Gertsberg, M.; J. Mollerstrom; and M. Pagel. "Gender Quotas and Support for Women in Board Elections." NBER Working Paper No. w28463 (2021).
- Ginsberg, J.; M. H. Mohebbi; R. S. Patel; L. Brammer; M. S. Smolinski; and L. Brilliant. "Detecting Influenza Epidemics Using Search Engine Query Data." *Nature*, 457 (2009), 1012–1014.
- Gompers, P. A.; V. Mukharlyamov; and Y. Xuan. "The Cost of Friendship." *Journal of Financial Economics*, 119 (2016), 626–644.
- Gormley, T. A.; V. K. Gupta; D. A. Matsa; S. C. Mortal; and L. Yang. "The Big Three and Board Gender Diversity: The Effectiveness of Shareholder Voice." Finance Working Paper No. 714/2020, European Corporate Governance Institute (2020).
- Gorton, G. B., and A. Zentefis. "Social Progress and Corporate Culture." Working Paper No. 2019-01, Yale International Center for Finance (2019).
- Hensvik, L., and O. Nordström Skans. "Social Networks, Employee Selection, and Labor Market Outcomes." *Journal of Labor Economics*, 34 (2016), 825–867.
- Hwang, S.; A. Shivdasani; and E. Simintzi. "Mandating Women on Boards: Evidence from the United States." Working Paper, University of North Carolina (2018).
- Kang, S.; E. H. Kim; Y. Lu. "Does Independent Directors' CEO Experience Matter?" *Review of Finance*, 22 (2018), 905–949.
- Keck, T. M.. "Beyond Backlash: Assessing the Impact of Judicial Decisions on LGBT Rights." *Law and Society Review*, 43 (2009), 151–186.
- Kim, D., and L. T. Starks. "Gender Diversity on Corporate Boards: Do Women Contribute Unique Skills?" *American Economic Review*, 106 (2016), 267–271.
- Knyazeva, A., D. Knyazeva, and R. W. Masulis. "The Supply of Corporate Directors and Board Independence." *Review of Financial Studies*, 26 (2013), 1561–1605.
- Leibbrandt, A.; L. C. Wang; and C. Foo. "Gender Quotas, Competitions, and Peer Review: Experimental Evidence on the Backlash Against Women." *Management Science*, 64 (2018), 3501–3516.
- Li, K.; F. Mai; R. Shen; and X. Yan. "Measuring Corporate Culture Using Machine Learning." *Review of Financial Studies*, 34 (2021), 3265–3315.
- Marx, D. M., and J. S. Roman. "Female Role Models: Protecting Women's Math Test Performance." *Personality and Social Psychology Bulletin*, 28 (2002), 1183–1193.
- Matsa, D. A., and A. R. Miller. "Chipping Away at the Glass Ceiling: Gender Spillovers in Corporate Leadership." *American Economic Review*, 101 (2011), 635–639.
- McPherson, M.; L. Smith-Lovin; and J. M. Cook. "Birds of a Feather: Homophily in Social Networks." *Annual Review of Sociology*, 27 (2001), 415–444.
- Pan, Y.; T. Y. Wang; M. Weisbach. "CEO Investment Cycles." *Review of Financial Studies*, 29 (2016), 2955–2999.
- Roodman, D.; M. Ø. Nielsen; J. G. MacKinnon; and M. D. Webb. "Fast and Wild: Bootstrap Inference in Stata Using Boottest." *Stata Journal*, 19 (2019), 4–60.
- Shivdasani, A., and D. Yermack. "CEO Involvement in the Selection of New Board Members: An Empirical Analysis." *Journal of Finance*, 54 (1999), 1829–1853.
- State Street Global Advisors. "SSGA's Guidance on Enhancing Gender Diversity on Boards" (2017).
- Stout, J. G.; N. Dasgupta; M. Hunsinger; and M. A. McManus. "STEMing the Tide: Using Ingroup Experts to Inoculate Women's Self-Concept in Science, Technology, Engineering, and Mathematics (STEM)." *Journal of Personality & Social Psychology*, 100 (2011), 255–270.
- Tate, G., and L. Yang. "Female Leadership and Gender Equity: Evidence from Plant Closure." *Journal of Financial Economics*, 117 (2015), 77–97.