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Investors' response to the #MeToo movement: does corporate culture matter?

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Abstract

This paper provides evidence that the #MeToo movement revised investors' beliefs about the costs (benefits) of fostering an exclusive (inclusive) culture, as reflected by the absence (presence of a critical mass) of women directors in the board room. Tracking a timeline of events associated with the #MeToo movement that begin with the Harvey Weinstein exposé in October 2017 in the *New York Times*, we document contrasting market reactions to the movement depending on the existing culture of the firm. Firms that historically excluded women from their board experienced a negative market response as momentum for the cause increased, whereas investors responded favorably to firms that historically embraced the inclusion of women on their boards. In contrast, we do not detect differences in the market's response to randomly generated pseudo-events during the same time frame when comparing firms with exclusive and inclusive cultures. In the context of increased regulator attention to board gender diversity, as well as the ESG activist campaigns by large institutional investors, our study documents a shift in investors' beliefs about the risks associated with sexual misconduct and about the value of having women in the boardroom shaping the culture of the firm.

Keywords Board of directors · Gender · Diversity and inclusion · Corporate culture · ESG

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1 Introduction

Good corporate governance is a bedrock of corporate America, with a central tenet being the board of directors' role in effectively overseeing and monitoring the firm. Recently, institutional investors have focused on changing board composition with respect to gender. Beginning in 2017, two of the "Big 3″ institutional investors, State Street and BlackRock, launched ESG activist campaigns for their portfolio firms to include women on their board of directors, voting consistently against directors on the nominating committee if the firm presented a ballot of directors with zero women (Baer, 2017; Hunnicutt, 2017).[1] In 2020, Goldman Sachs joined this campaign by announcing that it would not underwrite IPOs in the U.S for firms with all-male boards of directors (Elsesser, 2020). Generally, their reason for promoting board gender diversity is that it leads to higher-quality decision-making, which in turn improves shareholder value (Krouse, 2018). Studies supporting this view for seasoned firms include Dezsö and Ross (2012), Chen et al. (2018), and Coles et al. (2020).[2]

Given the voting and financial clout of these institutions, it is not surprising that their activism wielded significant influence in this governance area.[3] Between 2017 and 2020, the number of S&P 1500 firms having all-male boards dropped from 179 to 30, with no S&P 500 board having an all-male board. In 2020, of the top 25 U.S. IPOs, just one company, Dun & Bradstreet, went public with an all-male board, compared to 12 IPOs in 2018 (Green, 2021). Government and regulators also have responded. In 2018, California passed legislation mandating that most of the publicly traded companies that are based there have at least three women on their boards by the end of 2021. And in 2021, NASDAQ adopted a change to its corporate governance listing requirements by mandating the inclusion (or explanation of the non-inclusion) of at least one woman board member.[4]

These events suggest that board gender, and in particular the lack of women on the board, should be a concern to shareholders. Some papers address this conjecture by demonstrating that women directors possess special skills (Kim & Starks, 2016) or are more risk-averse (Chen et al., 2019) and thus bring new ideas and backgrounds to board decision making. Other papers examine how a change in gender composition via a mandated shock to gender representation (e.g., Ahern & Dittmar, 2012; Greene et al., 2020) or through an instrumented addition of a woman to the board (e.g., Adams & Ferreira, 2009) affects firm value. These papers, however, produce mixed results. With regard to the California law, Allen and Wahid (2021) document significantly positive stock price reactions around the law's passage for firms with boards that currently exclude women; other papers (Greene et al., 2020; Hwang

[1] Prominent proxy advisors, including ISS and Glass Lewis, also have advanced voting policy guidelines that reflect commitments to board gender diversity (see https://www.issgovernance.com/file/policy/latest/americas/US-Voting-Guidelines.pdf and https://www.wlrk.com/docs/2021_Glass_Lewis_U.S._Voting_Guidelines.pdf).

[2] Rau et al. (2022) find that IPOs with gender diverse boards between 2010 and 2018 earn higher initial returns than those with less diverse boards. Yet, they find no evidence that IPOs with diverse boards are more profitable or earn abnormal stock market returns in the period following the IPO. Thus, their paper supports Goldman Sachs CEO David Solomon's assertion that IPOs of more diverse companies perform better, but also other papers showing no cross-sectional relation between gender diversity and firm performance (e.g., Adams & Ferreira, 2009).

[3] State Street and BlackRock had combined assets under management of about $9 trillion in 2017. Similarly, Goldman Sachs was the lead U.S. underwriter in 2019, capturing 24% of total U.S. deals worth over $55.9 billion.

[4] See California Senate Bill No. 826 and Securities Exchange Act Release No. 34–92,590.

et al., 2018; von Meyerinck et al., 2021) find the opposite result when examining a narrower set of event dates.

In this paper, we take a different approach. We use the history of board gender diversity as a measure of the corporate culture within a firm with respect to its inclusivity or exclusivity of women. We then identify an economic shock in which gender itself may matter to investors. The shock we exploit is the modern #MeToo Movement, which we propose shifted investors' views of the economic risks associated with gender exclusivity in the workplace. The risks of such exclusivity can be revelations of future sexual misconduct within the workplace, unrevealed internal incidents of sexual misconduct, or other risks associated with gender exclusivity (for example, the firm having difficulties hiring and retaining qualified women due to inequities in pay or advancement or to inhospitable working conditions).

We posit that firms with all-male boards are associated with an internal culture that is exclusive to women and therefore earn significantly negative abnormal returns as the revelations of the #MeToo movement become more apparent. Conversely, we propose that firms with boards incorporating a large number of women directors are indicative of an internal culture that is inclusive of women, so we expect these firms to be less affected by the shock, as evidenced by less negative or even positive abnormal stock returns. Thus, our paper examines whether board diversity per se is a reflection of the firm's culture and, if so, whether investors price in the costs (benefits) of fostering an exclusive (inclusive) environment. Our paper also speaks directly to a corporate governance agenda that forcefully advocates against all-male boards of directors—an agenda that has been criticized as being "political at [its] core" (Levitt, 2021).

The #MeToo movement began in October 2017 when actress Alyssa Milano responded to developing scandals with the inclusion of the #MeToo hashtag in a tweet describing her personal experiences of sexual harassment in the workplace.[5] Within 48 hours of Milano's initial tweet, nearly two million responses used the #MeToo hashtag, thus creating a newfound attention to the issue of sexual harassment in the workplace.[6] As illustrated in Fig. 1, both Dow Jones/Factiva counts of new items discussing "sexual harassment" (Panel A) and Google searches on the phrase #MeToo (Panel B) spiked dramatically after Milano's initial tweet.

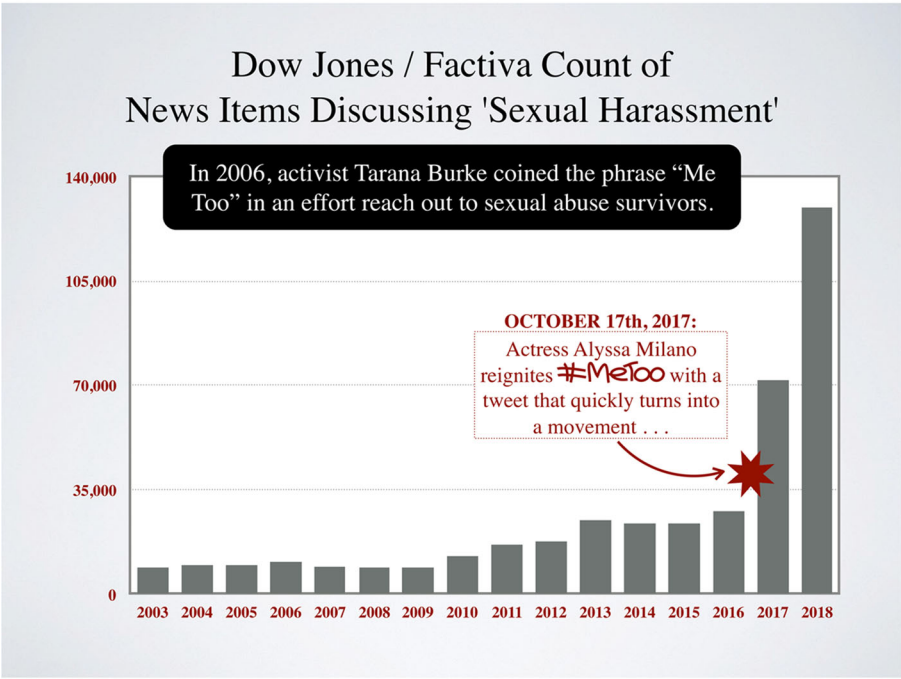
Firms, investors, and Wall Street responded to the #MeToo movement in various ways. For example, in July 2018, the stock price of CBS Corporation dropped 6% upon the news that its CEO, Les Moonves, would face misconduct allegations in an upcoming story reported in the *New Yorker* by Ronan Farrow, who had recently won the Pulitzer Prize in Public Service for his investigative reporting in relation to the #MeToo Movement (Farrow, 2018; Garber & McAlone, 2018). Moonves denied the allegations, but two months later CBS fired him, causing further declines in the company's stock price and triggering shareholders to sue the company—arguing that as the #MeToo Movement gained momentum and the likelihood that their "star" CEO would get taken down by scandal increased, the company failed to disclose this risk (Spangler, 2018).[7] In January 2020, the court denied CBS's motion to dismiss the lawsuit, noting that a single theory of securities fraud underpins the shareholders' complaint:

[5] The phrase "Me Too" was originally coined by activist Tarana Burke in 2006 in an effort reach out to sexual abuse survivors.

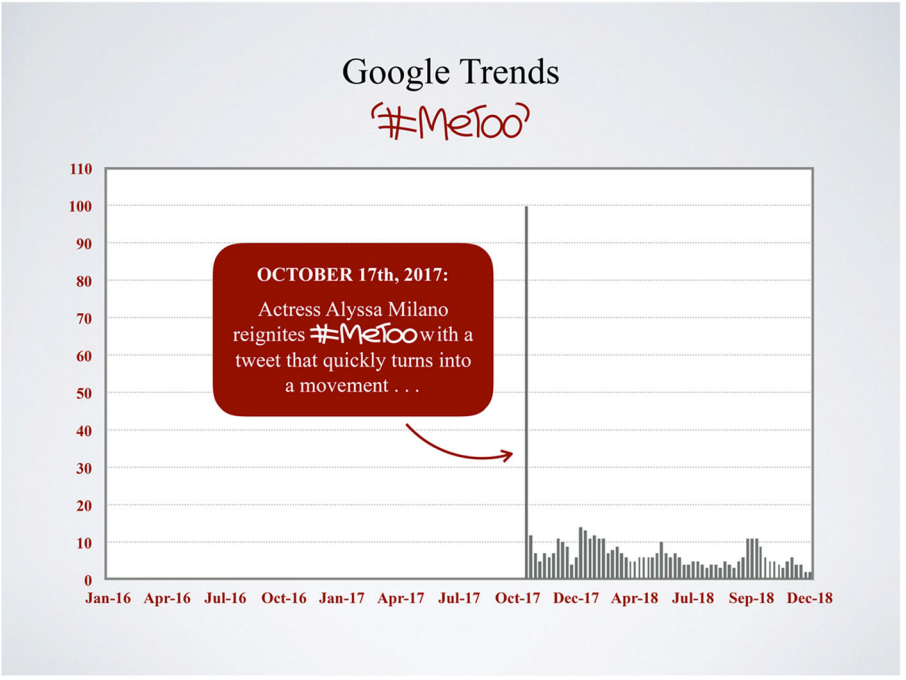
[6] See https://www.chicagotribune.com/lifestyles/ct-me-too-timeline-20171208-htmlstory.html.

[7] See Civil Action Docket No. 1:18-cv-07796.

(a)


Dow Jones / Factiva Count of
News Items Discussing 'Sexual Harassment'
In 2006, activist Tarana Burke coined the phrase "Me Too" in an effort reach out to sexual abuse survivors.
OCTOBER 17th, 2017:
Actress Alyssa Milano reignites #MeToo with a tweet that quickly turns into a movement . . .
140,000
105,000
70,000
35,000
0
2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

(b)


Google Trends
'#MeToo'
OCTOBER 17th, 2017:
Actress Alyssa Milano reignites #MeToo with a tweet that quickly turns into a movement . . .
110
100
90
80
70
60
50
40
30
20
10
0
Jan-16 Apr-16 Jul-16 Oct-16 Jan-17 Apr-17 Jul-17 Oct-17 Dec-17 Apr-18 Jul-18 Sep-18 Dec-18

◀ **Fig. 1** Sexual Harassment in the News. (**a**) documents the spike in news media mentions of sexual harassment in 2017 and 2018, which is consistent with a shock to attention to the issue. (**b**) documents the spike in the popularity of "#MeToo" on Google Trends*. [Sources: Dow Jones / Factiva and Google Trends.] * *Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term*

> Plaintiffs allege that Moonves and other managers and officers sexually harassed and threatened female employees behind the scenes for years, fostering a crude and hostile workplace culture. This behavior and culture created a risk that CBS would lose Moonves, its star executive, should his dirty laundry come to light. *Plaintiffs' securities fraud theory is that, with the advent of the #MeToo movement, the risk of losing Moonves to sexual scandal increased, and yet Defendants failed to disclose the risk even as they touted CBS's ethical culture and Moonves's importance to the Company's financial performance.* [See page 11 of Opinion and Order filed on January 15, 2020 re: Civil Action Docket No. 1:18-cv-07796, *emphasis* added.]

A very similar story played out for Steve Wynn, the CEO-founder of Wynn Resorts and Casinos, with shareholders again alleging that the company failed to disclose that the company was at "grave risk" of losing its leader to scandal.[8] In fact, after the initial revelation of the #MeToo movement, over 200 male executives were dismissed or demoted following allegations of sexual misconduct, with many of these men being replaced by women (Bach, 2018; Carlsen et al., 2018).

Wall Street responded by adding "Weinstein Clauses" (named after Harvey Weinstein, the former CEO of Miramax and the Weinstein Company) and "#MeToo representations" into merger documents, providing economic recourse to bidders via clawback provisions if sexual misconduct is discovered after the deal is closed (Ahmed, 2018; Reints, 2018). Private equity and tech investors also sought ways to acknowledge the risk of a #MeToo scandal in their contracts (Fletcher, 2018; Ram, 2019). And institutional investors increased their pressure on firms to add gender diversity on their boards by voting against board members of nominating committees that put forth all-male ballots during their annual meetings (Baer, 2017; Hunnicutt, 2017).

The California legislature responded by mandating minimum thresholds of women on boards (Baer, 2017; Hunnicutt, 2017), and the NASDAQ changed its listing requirements by introducing a consent or explain disclosure requirement for inclusion of at least one woman board member. State legislatures reacted by passing laws significantly restricting or prohibiting employers from using nondisclosure agreements when resolving sexual harassment complaints, thus increasing the likelihood that future revelations of sexual harassment will come to the public's attention (Haigh & Wirtz, 2020; Tippett, 2018).[9] In February 2022, the U.S. Congress approved legislation banning the use of clauses, in employment contracts, that force victims of sexual

[8] See Civil Action Docket No. 2:18-cv-00479.

[9] According to Haigh and Wirtz (2020), as of February 2020, Illinois, Maryland, Nevada, New Jersey, Oregon, Tennessee, Vermont, Virginia, and Washington had enacted legislation that restricts an employer's use of NDAs, with California, Nevada, and New Jersey specifically prohibiting such agreements when resolving a sexual harassment claim.

assault and harassment to pursue their cases in forced arbitration—clauses that shield accused perpetrators from public disclosures.[10]

Our main predictions and tests rely on whether and how board gender diversity reflects inclusive and exclusive gender cultures within a firm. We define an "exclusive" culture to be one in which the board room was exclusively male over 2012–2016, the five-year period immediately preceding the advent of the #MeToo movement. Following "critical mass" theory of group dynamics (Kanter, 1977), we identify firms with "inclusive" cultures as those that entered the #MeToo time frame with three or more women in the board room continuously over the same time period. Critical mass theory contrasts sharply with papers that use an indicator for the presence or absence of women, a percentage threshold, or a continuous percentage of women variable to measure inclusivity.[11] Because our time period precedes the gender activist campaigns of BlackRock, State Street, and others (as well as regulations requiring the inclusion of women in the board room), firms were not under pressure to tailor their board representations along gender lines. Further, by using a continuous five-year period, we ensure that the firms had a history of board gender exclusion or inclusion, providing a more valid representation of corporate culture. Using these criteria identifies 481 gender exclusive and 122 gender inclusive firms, respectively.

Using these delineations, we document systematic differences in culture between the exclusive and inclusive subsamples. Focusing on executive characteristics, we find that firms that left women out of the board room also neglected to hire (or promote) women executives, a finding consistent with other studies using samples from earlier periods (e.g., Carter et al., 2017; Matsa & Miller, 2011). Moreover, examining external evaluations of firm culture (as maintained by Glassdoor, Fortune, and two proprietary databases), we document that differences in gender diversity spanned broadly throughout all levels of the workforce, with exclusive (inclusive) boards being a reflection of their respective firms' cultures.

We next turn to our main question: Did the #MeToo movement revise investors' beliefs about the value of having women in the board room? To answer this question, we conduct an event study over 37 event dates occurring during the first nine months of the #MeToo movement. The sample we study is not limited to those firms named in complaints or directly affected by a scandal; instead, we study a broad-based sample of firms listed on the major U.S. stock exchanges.

Our findings consistently support the view that exclusive firms experienced negative abnormal market returns as momentum for the cause increased, while inclusive firms earned abnormal positive returns as the #MeToo events unfolded. The discrepancy in cumulative returns between groups grew over time, reflecting the increased momentum of the #MeToo movement as more allegations of sexual harassment surfaced. These findings hold regardless of our approach to benchmarking abnormal performance and after taking various approaches to controlling for covariates between firm types. In contrast, placebo tests conducted over the same time period (replacing #MeToo dates with randomly generated pseudo-event dates) produce insignificant differences in market price movements

[10] See H.R.4445 – 117th Congress; S.2342 – 117th Congress.

[11] In a later section, we examine alternative approaches to measuring culture.

between the two groups, suggesting that the return patterns we document stem from the #MeToo movement itself and not from other firm characteristics. Our findings also hold after removing confounding events—for example, earnings announcements—and are robust to alternative measurements and the inclusion of additional control variables.

Exploring the dynamics surrounding our main findings, we document important variations in market reaction depending on the presence of a "critical mass" as compared to a "token presence" in the board room (Adams & Ferreira, 2009; Farrell & Hersch, 2005). Consistent with the notion that investors do not reward firms for tokenism, when we lower the threshold for inclusiveness to capture firms with just one or two women directors, we no longer detect a positive market response to the #MeToo events. This finding supports critical mass theory and provides insights into when gender representation at the board level has meaningful board policy implications (Erkut et al., 2008; Konrad et al., 2008; Torchia et al., 2011). It also supports the California law's premise that gender diversity should include at least three women directors.

We also examine if investors feared that the #MeToo movement would result in firms with all-male boards altering their boards in a suboptimal way by adding a woman director. In theory, firms and boards use cost-benefit analyses to structure their boards (Hermalin & Weisbach, 1998), a phenomenon borne out by empirical evidence (Coles et al., 2008; Klein, 1998). Because our designation of exclusive and inclusive boards encompasses gender diversity prior to the advent of the #MeToo movement, the ESG engagements by BlackRock and State Street, and the California law, it could be argued that these firms used criteria other than gender to optimally create their slates of board members. Thus, if firms with all-male boards felt pressured to nominate or to appoint a woman to their boards in response to the #MeToo movement, we should observe negative stock market reactions around the appointments of these women. We find no evidence that investors believe these appointments harmed firm value.

Collectively, our paper is consistent with the #MeToo movement revising investors' beliefs about the costs (benefits) of fostering a culture that excludes (includes) women, as reflected by the absence (presence) of women in the board room.

Our paper contributes to several lines of literature. First, it adds to studies examining how board gender diversity relates to firm value. Because board composition and firm value are intricately related, most studies seek to find an exogenous shock to gender composition (Ahern & Dittmar, 2012) or use an instrumented addition of a woman to the board (Adams & Ferreira, 2009) to examine this link. In contrast, we treat the board's gender composition as endogenously determined and exploit a shock to investors' beliefs about the costs of fostering a culture that excludes women to see its effects on shareholder value. Our findings support the view that firms with all-male boards are deemed by the market to be more exposed to the risks associated with sexual misconduct than firms with boards containing a critical mass of women.

Second, our paper contributes to the literature demonstrating the futility associated with firms taking a tokenism approach to board diversity (e.g., Adams & Ferreira, 2009; Erkut et al., 2008; Farrell & Hersch, 2005). Our findings of no significant association between excess stock returns and boards with just one woman are consistent with these prior studies. Thus, we caution the reader not to interpret our findings to

indicate that a firm can remedy its negative impression simply by adding a woman to its board. Nor do we take the position that the California law, the NASDAQ proposal, or even the ESG activism by BlackRock and State Street necessarily will foster a better culture within the firm. Instead, we interpret our findings as being consistent with the view that boards that *endogenously* exclude (or include) women reflect the culture of the firm. This reflection may signal a tone at the top that filters down to the rest of the firm. Alternatively, board gender composition may serve as a proxy for the corporate culture that arises organically within a firm. Consequently, our findings inform advisors, regulators, and other stakeholders as they consider approaches to fostering diversity and inclusion in ways that have a meaningful impact on firm value.

2 Background and firm culture

2.1 Sexual harassment: Explicit and implicit implications to the firm

Our study relies on using market returns to calibrate investor reactions to events surrounding the #MeToo movement; therefore, a natural question to ask is whether investors, on average, punish firms when they announce sexual harassment complaints. Borelli-Kjaer et al. (2021) examine the price impact of sexual harassment scandals for a broad sample of international firms reporting such scandals between January 2005 and February 2019. They find that market value, on average, falls 1.5% in response to the announcement of a sexual harassment scandal, thus validating the view that the market places a tangible cost on firms engaging in these types of behavior. In Appendix 1, we corroborate Borelli-Kjaer et al.'s (2021) findings by documenting an overall negative price response to 92 sexual harassment scandal announcements affecting NASDAQ and NYSE-listed U.S. firms that overlap with our sample. Thus, on average, investors place a jaundiced eye towards firms engaging in sexual harassment.

From a legal standpoint, sexual harassment is a form of employment discrimination that falls under Title VII of the Civil Rights Act of 1964. However, its inclusion as a violation of the Civil Rights Act was not immediate. Administratively, the Equal Employment Opportunity Commission (EEOC) began considering sexual harassment to be an action prohibited by Title VII in 1980,[12] a view upheld by the U.S. Supreme Court in a 1986 unanimous decision in the case of *Meritor Savings Bank v. Vinson* (see Tippett (2018) for a discussion of *Meritor* and subsequent Supreme Court rulings that refined and explained the conditions behind the existing law). In addition, many states have their own laws prohibiting sexual harassment—for example, the New Jersey Laws Against Discrimination and the Pennsylvania Humans Relations Act.

Both a firm and its employees can be punished for sexual harassment within the workplace. For example, in 1998, the U.S. Supreme Court held that an employer can be found vicariously liable for sexual harassment committed by one of its supervisory employees (see *Faragher v. City of Boca Raton)*. Monetary damages against employers

[12] According to the EEOC, sexual harassment includes "unwelcome sexual advances, requests for sexual favors, and other verbal or physical harassment of a sexual nature" (www.eeoc.gov). The website further states that sexual harassment need not be of a sexual nature only. For example, frequent or severe teasing or offhand comments can be construed as creating a "hostile or offensive" work environment, which also falls under the EEOC's sexual harassment umbrella.

found liable for sexual harassment under federal or state statutes include lost wages, compensatory and punitive damages, and victims' court and legal fees. In addition, as discussed earlier, revelations of sexual harassment can result in the dismissal of management or key employees, which can materially impact the strategic trajectory of the firm. Legally, they can spawn costly contracting clauses and trigger the passage of new regulation, such as the California law. Other substantive indirect costs include poor employee morale, bad publicity, and a hit to the firm's reputation.

However, not all sexual misconduct incidents are publicly revealed by the firm, by the victim(s), or through a publicly documented initiation of a sexual harassment lawsuit. For example, firms historically have used nondisclosure agreements and arbitration agreements to suppress or hide the public disclosure of these violations, thus keeping their sexual harassment complaints within house (Tippett, 2018). More commonly, many complaints go unreported or are not vigorously pursued by the firm. According to a 2016 survey by the Merit Systems Protection Board (MSPB, 2018), only 11% of employees who endured any form of workplace sexual harassment filed a formal complaint; more common survey responses included the employee ignoring the incident, asking for the harassment to stop, or changing jobs.

There are substantive nonlegal costs associated with sexual misconduct incidents, both revealed and unreported. These costs include being absent from work, reduced productivity, job turnover, and the opportunity cost of manager time in handling complaints (Deloitte, 2019; Rizzo et al., 2018; Sandroff, 1988). In dollar terms, Sandroff (1988), in a survey of individuals across 160 Fortune 500 companies, estimated the average organizational costs of workplace sexual harassment to be $6.7 million per firm. Deloitte (2019), using survey data from the Australian Human Rights Commission (2018), reports an estimated $1053 cost per employee (for all employees, not just the targets) for Australian firms, with these costs stemming from absenteeism ($297), reduced productivity ($171), staff turnover ($336), and manager time ($250). Notably, Deloitte finds strong evidence that staff turnover encompasses not only the perpetrator and the person being harassed, but also bystanders who witness the incident.

If, as we contend, the #MeToo Movement increased investors' concerns about the future costs of sexual harassment incidents within a firm, then the abnormal returns around the events surrounding this movement would be a reflection both of these costs and the perceived likelihood of future sexual misconduct existing within the firm.

2.2 Firm culture: Inclusive vs. exclusive cultures

Kreps (1990) defines corporate culture as an intangible asset designed to meet unforeseen contingencies as they arise (see also Camerer and Vepsalainen (1988)). Basically, because a firm cannot contract on unforeseen circumstances, it can create a culture consonant with shared beliefs, assumptions, and values that help employees understand which behaviors are and are not appropriate (Grennan, 2019; Schein, 1990). Importantly, corporate culture evolves over time (Cheng & Groysberg, 2021; Schein, 1990), suggesting both a stickiness in change and a historical perspective on what that culture is.

The corporate culture we examine is the implicit attitude toward the inclusion or exclusion of women within the firm's workplace. Firms with inclusive workplaces based on gender or race have been shown to be more innovative towards their

customers' needs (Jain-Link et al., 2020); more likely to create a learning culture, i.e., one which emphasizes flexibility and independence among its employees (Cheng & Groysberg, 2021); and more likely to act in the interests of a broader set of stakeholders, i.e., not just shareholders (Chen et al., 2021). Conversely, exclusive workplaces—defined by Cheng and Groysberg (2021) as organizations where differing perspectives are silenced, ignored, or neglected—are more likely to struggle with managing, hiring, and retaining qualified and diverse employees (Cheng & Groysberg, 2021).

2.3 Using board composition to measure an inclusive vs. exclusive corporate culture

One role of the board of directors is to "set the framework of values" (FRC, 2018), thus shaping its corporate culture. However, according to two surveys by Graham et al. (2016, 2022), boards do not directly choose a firm's culture. Instead, they embody the firm culture and, accordingly, influence it through their actions—for example, via their choice of CEO (see also Sandford, 2014). In recognition of this embodiment, law firms (e.g., Akin Gump, 2019) and accounting consulting groups (e.g., Klemash & Dettmann, 2019) increasingly have counseled boards to consider the oversight of their firms' corporate cultures as an important priority.

Our assumption that investors use board composition as a partitioning variable in assessing a firm's corporate culture hails from Camerer and Vepsalainen (1988), who define a *visible* firm culture as one that can be seen from outside the firm. Since board composition is visible to outside investors, we propose that the market uses this composition in assessing the inclusivity or exclusivity of firm culture as it relates to gender. Further, consistent with Schein (1990), who states that corporate cultures evolve over time, we expect the market to consider long-term trends in gender composition as better indicators of the firm's corporate culture vis-à-vis the most recent year.

3 Data and sample selection

3.1 #MeToo timeline of event dates

As in any event study, our inferences depend critically on the proper identification of events. To avoid subjectivity in our selection of dates and the potential for bias, we use the #MeToo event timeline maintained by the *Chicago Tribune* for our analyses.[13] This timeline remains the top search result from Google and Bing search engines (using the search terms of "#MeToo" and "timeline"), underscoring the awareness and influence of this source.

Our analyses focus on the events in the first nine months of the #MeToo timeline, i.e., the 37 event dates from October 2017 through May 2018 (see Appendix 2 for the dates and headlines of each event). We begin on October 5, 2017 [E1], when allegations of sexual harassment by Ashley Judd against Harvey Weinstein of Miramax were

[13] See https://www.chicagotribune.com/lifestyles/ct-me-too-timeline-20171208-htmlstory.html.

reported in the news, and we conclude with the indictment of Harvey Weinstein on May 25, 2018 [E37]. This timeline allows the market to evaluate the growing momentum of this social movement.

3.2 Sample selection and descriptive statistics

We assemble a sample of U.S. public companies with available stock return data from CRSP, financial statement data from Compustat, and board composition data from BoardEx. As shown in Table 1, we begin with the 5385 firms listed in the Compustat-CRSP merged database as of 2016, which represents the last full year of available data prior to the start of the #MeToo movement in 2017. Removing 884 foreign firms and 1097 firms with missing daily return data at any point during the nine-month sample period, we arrive at 3404 firms with available data for our market reaction tests. Although the BoardEx coverage expanded considerably in the past decade, we still lose 525 of these firms due to a lack of BoardEx data. After removing another 276 firms with either inconsistent BoardEx data (20 firms) or missing Compustat data (256 firms), we have a sample of 2603 firms with all available data at the end of 2016. We further add the restriction that each firm has available BoardEx data over the years 2012 through 2016 inclusive, which allows us to create subsamples of firms with multi-year inclusions and exclusions. After excluding the 578 firms with missing years, we arrive at our final sample of 2025 firms available for our tests.

Panel A of Table 2 provides descriptive statistics for the sample. The typical (based on mean or median) firm in our sample has nine directors on its board, which includes one woman. As shown in Fig. 2, women's board representation steadily increased in the years leading up to the #MeToo movement. While nearly 40% of firms in our sample excluded women from the board room in 2012, only 27% did so as of 2016. Nevertheless, the percentage of firms welcoming just one woman into the board room each year held steady over this same time period, as approximately one-third of boards included only one woman from 2012 through 2016.

Table 1 Sample Selection

	Number of firms
Compustat CRSP Merged Database in 2016	5385
Less: Non-U.S. incorporated firms	−884
Less: Observations with missing returns data	−1097
Less: Observations with missing BoardEx coverage	−525
Less: Observations with inconsistent BoardEx data[a]	−20
Less: Observations with missing control variables	−256
Less: Firms that do not exist in every year between 2012 and 2016	−578
Firms included in cross-sectional tests	2025

The sample consists of firm-level observations for U.S. public companies with available stock return data, financial statement data, and board composition data over the years 2012 through 2016 (inclusive), five years prior to the start of the #MeToo movement in 2017

[a] Specifically, we remove instances where hand-collection and review of SEC filings indicate inconsistencies in the BoardEx data

Table 2 Descriptive Statistics

Panel A: Full sample (n=2025)

	Mean	Med.	Min	Max	Std.
SIZE ($ Million)	10,868	1491	11	240,000	32,261
SALES ($ Million)	4475	764	0.70	79,902	11,666
ASSET GROWTH	0.08	0.04	−0.79	10.32	0.41
SALES GROWTH	0.04	0.03	−0.64	2.20	0.27
BOOK-TO-MARKET	0.51	0.45	−0.46	2.24	0.41
LEVERAGE	0.60	0.60	0.07	1.25	0.26
ROA	0.06	0.08	−0.79	0.42	0.17
CAPEX	0.03	0.02	0.00	0.28	0.04
RETURN VOLATILITY	0.11	0.09	0.03	0.40	0.07
# of DIRECTORS	8.86	9.00	2.00	22.00	2.55
% INDEP DIR	0.79	0.82	0.00	1.00	0.12
% WOMEN DIRECTORS	0.14	0.14	0.00	0.63	0.11

Panel B: Industry distribution

	EXCLUSIVE (n=481)		*INCLUSIVE* (n=122)	
	Freq.	%	Freq.	%
Consumer Nondurables	13	2.70	0.00	0.00
Consumer Durables	15	3.10	12	9.80
Manufacturing	52	10.80	1	0.80
Oil, Gas, and Coal Extraction and Products	36	7.50	9	7.40
Chemicals and Allied Products	6	1.30	5	4.10
Business Equipment	103	21.40	8	6.60
Telephone and Television Transmission	10	2.10	5	4.10
Utilities	2	0.40	12	9.80
Wholesale, Retail, and Some Services	35	7.30	16	13.10
Healthcare, Medical Equipment, and Drug	54	11.20	4	3.30
Finance	93	19.30	38	31.20
Other	62	12.90	12	9.80
Total	481	100.00	122	100.00

Panel C: *EXCLUSIVE* versus *INCLUSIVE* subsamples

	EXCLUSIVE (n=481)		*INCLUSIVE* (n=122)		Tests of Differences: *EXCLUSIVE* vs. *INCLUSIVE*	
	Mean	Med.	Mean	Med.	Mean Diff.	Med. Diff.
SIZE ($ Million)	1460	391	39,865	7706	38,404***	7315***
SALES ($ Million)	723	168	15,568	3218	14,845***	3051***
ASSET GROWTH	0.07	0.02	0.05	0.04	−0.02	0.02
SALES GROWTH	0.01	0.02	0.03	0.02	0.02	0.00
BOOK-TO-MARKET	0.63	0.56	0.42	0.40	−0.21***	−0.16***
LEVERAGE	0.50	0.46	0.74	0.78	0.24***	0.32***

Table 2 (continued)

ROA	0.02	0.06	0.12	0.11	0.10***	0.05***
CAPEX	0.03	0.02	0.03	0.03	0.00	0.01
RETURN VOLATILITY	0.13	0.11	0.08	0.07	−0.05***	−0.04***
# of DIRECTORS	6.85	7.00	11.77	11.00	4.92***	4.00***
% INDEP DIR	0.73	0.75	0.85	0.89	0.12***	0.14***
% WOMEN DIRECTORS	0.00	0.00	0.32	0.30	0.32***	0.30***

Panel A of this table presents descriptive statistics for the full sample of 2025 firms. Panel B of this table presents the industry distribution for the exclusive and inclusive culture subsamples. Panel C presents descriptive statistics for the exclusive and inclusive culture samples, testing for differences across the two subsamples. Firm characteristics variables are presented as of 2016. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively, for two-tailed tests comparing the *EXCLUSIVE* (no women directors in any year from 2012 through 2016) firms to the *INCLUSIVE* (having three or more women in every year from 2012 through 2016) firms. Please refer to Appendix 3 for variable definitions and data sources

Our upcoming tests focus on the differential reaction to the #MeToo movement based on firms' inclusive versus exclusive cultures. Accordingly, we identify subsamples of firms based on the presence or the absence of women in their board rooms. Specifically, we narrow our focus to firms that, as of the start of the #MeToo movement, had traditionally excluded women from their board. For contrast, we also identify firms that had already embraced the inclusion of women on their board, as evidenced by the presence of three or more women.

We select three women as our threshold for three main reasons. First, this number avoids the tokenism documented by prior work (Adams & Ferreira, 2009; Farrell & Hersch, 2005). Indeed, the steady trend of the percentage of firms with just one woman

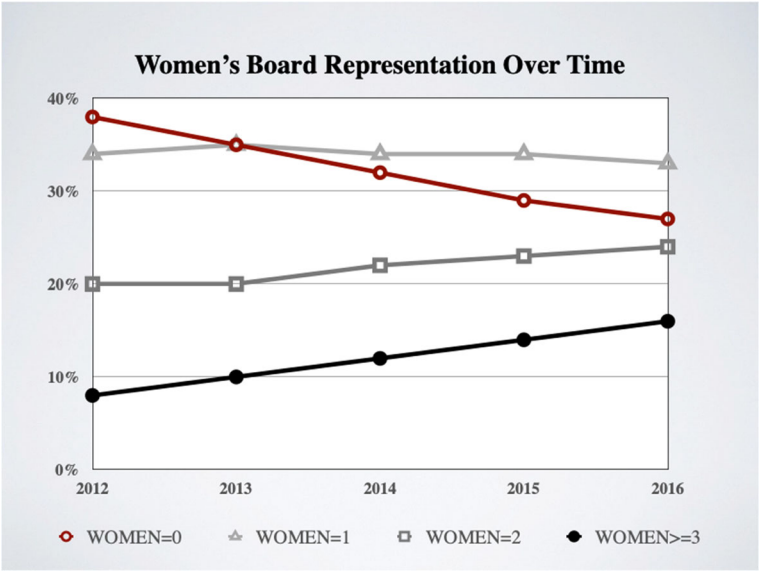


Fig. 2 Women's Board Representation Over Time. This figure divides the sample firms into subsamples based on the gender composition of their boards within a given year. The graph shows percentages for the full sample of 2025 firms with available data from 2012 through 2016

on the board (as shown in Fig. 2) is indicative of tokenism. Second, a threshold of three women follows critical mass theory of group dynamics. Kanter (1977) argues that a minority subgroup's degree of influence within any full group is felt only when the size of that group reaches a certain dimension; Kanter refers to this as a "critical mass" theory. Erkut et al. (2008), Konrad et al. (2008), and Torchia et al. (2011) examine this theory on gender representation within a firm's board of directors. Using survey data of women directors, they present evidence that achieving a critical mass of at least three women on the board enhances the board's working dynamics in general and also its outlook on firm innovation. As Erkut et al. (2008) note, "One woman is the invisibility phase; two women is the conspiracy phase; three women is mainstream" (p. 227). Finally, the threshold of three women is consistent with the new California law requiring all California-based firms with boards of at least six directors to have a minimum of three women directors by the end of the 2021 calendar year.[14]

Because we are interested in measuring the culture of the firm leading up to the advent of the #MeToo Movement, we use the gender composition of the firm's board over the five-year window 2012–2016 to categorize a firm as being exclusive or inclusive of women. Specifically, we categorize a firm as being *EXCLUSIVE* if over the full five years, its board was comprised entirely of men; symmetrically, we categorize a firm as being *INCLUSIVE* if over the same time period, its board continuously had at least three women directors. Our approach reflects a more stable, long-term board environment.

Over the five-year period, we find that 481 firms enter the #MeToo time frame without ever having included a woman on their board, while 122 firms enter 2017 with a persistent critical mass of at least three women directors. In terms of industry composition, as shown in Panel B of Table 2, both the *EXCLUSIVE* and *INCLUSIVE* subsamples include many financial firms—with the exclusive sample concentrating in the business equipment industry and the inclusive sample concentrating in the wholesale/retail sector.

As shown in Panel C of Table 2, comparing firm characteristics between the subsamples of *EXCLUSIVE* and *INCLUSIVE* firms produces a number of significant differences. *INCLUSIVE* firms tend to be larger (*SIZE* and *SALES*), better performing (*ROA*), and less volatile (*RETURN VOLATILITY*), and have higher growth (lower *BOOK-TO-MARKET*), higher leverage, and larger, more independent boards (*# of DIRECTORS* and *% INDEP DIR*). Consistent with other papers (Ahern and Dittmar 201; Kim & Starks, 2016; Matsa & Miller, 2011), we control for a number of these factors in our upcoming multivariate tests. In addition, our tests consider various approaches to benchmarking firm performance, all of which aim to control for differences across subsamples. Moreover, to explore whether unobserved (and, thus, uncontrolled) differences between these two subsamples—unattributable to the unfolding #MeToo movement—explain our findings, we calculate pseudo-returns based on random event dates.

[14] When enacting the law, lawmakers cited research supporting critical mass theory as guiding their choice of three women as the threshold. See https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB826.

4 Findings

4.1 Does gender representation on the board of directors provide a signal about firm culture?

We begin by presenting univariate evidence to corroborate our approach to identifying *EXCLUSIVE* versus *INCLUSIVE* firm cultures. Table 3, Panel A tests for differences in executive characteristics among firms, while Panel B tests for differences in external evaluations of firm culture across firms. In both panels, sample sizes vary depending on data availability for each measure.

The evidence in Table 3 consistently supports the notion that sorting firms based on the presence or absence of women in the board room is effective in identifying firms with exclusive versus inclusive cultures. In Panel A, we use ExecuComp data to identify the five highest-compensated executives in each firm, which reduces our sample to 1173 firms.[15] None of the *EXCLUSIVE* firms have a woman CEO in 2016[16]; this contrasts with 18% of the *INCLUSIVE* firms. When comparing the incidence of having any woman executive, we find that 76% of the *EXCLUSIVE* firms and 41% of *INCLUSIVE* firms had no women executives in 2016. Equally striking, when looking across 2012–2016, 67% of *EXCLUSIVE* firms had no women executives over the entire five-year period; in contrast, 31% of *INCLUSIVE* firms had the same lack of women in their executive suites. These findings are consistent with Matsa and Miller (2011) who, using an earlier period (1997–2009), find similar associations between a firm having women on its board and the gender of its top five executives. Thus, the trend connecting the exclusivity or inclusivity of women on the board of directors with the gender make-up of the C-suite appears to span an almost 20-year period, beginning in 1997 (Matsa & Miller, 2011) and ending in 2016, the year prior to the #MeToo movement.

In Panel B, we turn from the executive suite to external evaluations of firm culture. Again, in support of the premise that gender representation on the board provides a signal about the culture of the firm, we detect significant differences in the likelihood that the firm is recognized by Glassdoor or Fortune on their lists of "Best Places to Work" at any point during 2012 through 2016, with *INCLUSIVE* firms appearing more frequently. These findings are consistent with Au et al. (2021), who employ a textual analysis on online job reviews from Glassdoor.com and Indeed.com to determine a measure of sexual harassment within a firm's workplace. Using these data, they find a negative association between seven-year (2011–2017) stock returns and the prevalence of sexual harassment within a firm.

In Panel B, we also document superior diversity and inclusion (D&I) scores, as measured by composite scores compiled by TruValue Labs and Arabesque. Both companies maintain proprietary databases with the aim of uncovering ESG data that offer insights into various dimensions of diversity and inclusion at the firm level. As the panel shows, our measure of board-based inclusivity correlates with the higher

[15] ExecuComp collects data directly from each company's proxy statement, including disclosures of the compensation paid to the firms' CEOs, CFOs, and three remaining highest-paid executives. ExecuComp covers firms included in the S&P 500, the S&P 400 MidCap, and the S&P SmallCap 600 indices.

[16] This is not surprising given that the CEO almost always sits on the firm's board, so, by definition, a board with zero women most likely will not have a woman CEO.

Table 3 Does Gender Representation on the Board of Directors Provide a Signal about the Culture of the Firm?

Panel A: The Presence of Women in the C-Suite

	Full Sample (n=1173)[a]	***EXCLUSIVE* (n=160)**	***INCLUSIVE* (n=98)**	**Tests of Differences: *EXCLUSIVE* vs. *INCLUSIVE***
	Mean	**Mean**	**Mean**	**Diff.**
# of WOMEN EXECUTIVES (2016)	0.55	0.26	0.95	0.69***
% WOMEN EXECUTIVES (2016)	10%	5%	16%	11%***
WOMEN CEO (2016)	6%	0%	18%	18%***
NO WOMEN EXECS (2016)	58%	76%	41%	−35%***
NO WOMEN EXECS (2012–2016)	45%	67%	31%	−36%***
WOMEN LEGAL OFFICER (2016)	10%	7%	12%	5%
WOMEN HR OFFICER (2016)	5%	1%	5%	4%**

Panel B: Firm Culture

	Full Sample	***EXCLUSIVE***		***INCLUSIVE***		**Tests of Differences: *EXCLUSIVE* vs. *INCLUSIVE***	
	n	**Mean**	**n**	**Mean**	**n**	**Mean**	**Diff.**
GLASSDOOR LIST (any year in 2012–2016)	2025	3.56%	481	0.21%	122	9.84%	9.63%***
FORTUNE LIST (any year in 2012–2016)	2025	1.23%	481	0.21%	122	1.64%	1.43%***
TRUVALUE D&I INSIGHT SCORE 10/1/17	1139	60.52	146	58.48	98	62.58	4.10*
TRUVALUE D&I INSIGHT SCORE 12/31/16	1091	60.74	134	58.83	96	62.16	3.33*
TRUVALUE D&I PULSE SCORE 10/1/17	1189	60.57	159	57.53	101	62.35	4.83**
TRUVALUE D&I PULSE SCORE 12/31/16	1142	62.05	148	58.95	99	64.21	5.27**
ARABESQUE DIVERSITY SCORE 2017Q3	625	57.82	26	43.87	71	66.55	22.67***
ARABESQUE DIVERSITY SCORE 2016Q4	612	56.31	24	36.05	70	65.64	29.59***

This table compares gender composition in the executive suite (Panel A) and external evaluations of firm culture (Panel B) based on the absence/presence of women directors on the board (our proxies for exclusive and inclusive cultures). ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively, for two-tailed tests comparing *EXCLUSIVE* to *INCLUSIVE* firms

[a] Reduced sample size because of ExecuComp data limitations

likelihood of the firm having higher D&I scores. Additional (untabulated) analyses contrasting specific datapoints collected by Arabesque indicate that inclusive firms differ from exclusive firms in a number of key aspects that collectively suggest broad cultural differences. For example, as compared to exclusive firms, inclusive firms are more likely to (1) offer more flexible work schedules, (2) provide child daycare services, (3) favor internal promotion, (4) set performance targets/objectives based on diversity and equal opportunity, (5) have formal policies to drive diversity and equal opportunities, and (6) have formal policies against forced or child labor.

The evidence presented in Table 3 corroborates our use of board gender representation as a signal of firm culture. In addition, these findings are consistent with several survey papers (e.g., Graham et al., 2016, 2022) that document that directors believe they can influence their firm's corporate culture through their actions and behavior.

4.2 Do investors respond to the #MeToo movement?

We turn our attention to assessing investors' reactions to the #MeToo movement, beginning with an initial examination of cumulative abnormal returns (*CAR*) associated with the #MeToo movement events listed in Appendix 2. The CAR is the summation of the abnormal return around day 0 for each of the 37 event dates. We use seven alternative models as our benchmark for returns: (1) the Fama-French five-factor model (*FF5*), (2) the Fama-French-Carhart four-factor model (*FFC4*), (3) the Fama-French three-factor model (*FF3*), the CAPM model using (4) equally weighted and (5) value-weighted market returns (*CAPM_EW* and *CAPM_VW*), and the Daniel et al. (1997) model using (6) equally weighted and (7) value-weighted benchmark returns (*DGTW_EW* and *DGTW_VW*). We describe each approach in detail in Appendix 3. As shown in the first column of Table 4, depending on the model used to cumulate abnormal returns, we detect a significantly negative overall market reaction to the event dates of the #MeToo movement. In particular, we document negative overall market reactions ranging from −0.32% for the *DGTW_VW* model (insignificant, $t = -0.97$) to −1.98% for the *CAPM_EW* model (significant, $t = -5.11$). Recall, however, that our prediction focuses on the *relative* market reaction to the #MeToo movement depending on the existing culture of the firm.

4.3 Does the market reaction to the #MeToo movement vary depending on firm culture?

To examine whether investor reactions to #MeToo movement vary based on gender representation on the board, the latter columns of Table 4 contrast the *CAR* for the subsample of exclusive firms with the *CAR* for the subsample of inclusive firms. Regardless of the model we use to calculate expected returns, we find that exclusive firms experience significantly negative abnormal returns as compared to the significantly positive abnormal returns enjoyed by inclusive firms. For example, using the FF5 model, we find that the sample of exclusive firms earn a *CAR* of −3.25%, whereas the sample of inclusive firms have a *CAR* of 2.33%; testing for a difference in the means produces a t-stat of 2.66 ($p < 0.01$). Thus, on a univariate basis, we find distinct differences in market reactions to the #MeToo movement based on whether a firm's

Table 4 Do Investors Respond to the #MeToo Movement?

	Full Sample (n=2025)		***EXCLUSIVE* (n=481)**		***INCLUSIVE* (n=122)**		**Tests of Differences: *EXCLUSIVE* vs. *INCLUSIVE***	
	CAR	***t***	***CAR***	***t***	***CAR***	***t***	**Mean Diff.**	***t***
FF5	−0.60%	−1.53	−3.25%***	−3.17	2.33%***	2.62	5.58%***	2.66
FFC4	−0.76%**	−1.96	−3.76%***	−3.71	2.56%**	2.43	6.32%***	3.07
FF3	−0.48%	−1.25	−3.60%***	−3.55	3.37%***	3.19	6.96%***	3.34
CAPM_EW	−1.98%***	−5.11	−5.53%***	−5.44	2.53%***	2.57	8.06%***	3.87
CAPM_VW	−1.77%***	−4.55	−5.34%***	−5.25	2.73%**	2.30	8.07%***	3.87
DGTW_EW	−0.44%	−1.33	−2.22%***	−2.60	2.08%**	2.24	4.30%**	2.45
DGTW_VW	−0.32%	−0.97	−2.06%**	−2.39	2.52%***	2.64	4.58%**	2.58

This table examines the average cumulated abnormal returns associated with the full timeline of 37 events detailed in Appendix 2. We use seven alternative models to compute the cumulative abnormal return over the #MeToo events on the full sample as well as the exclusive and inclusive culture subsamples. Please refer to Appendix 3 for variable definitions and data sources. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively, for two-tailed tests

board excludes or includes women, with firms with zero board gender diversity, on average, shouldering the lion's share of the negative abnormal stock return reaction.

Next, in Table 5 we test whether these differing reactions remain in a multivariate setting. To some extent, our seven alternative approaches to benchmarking abnormal returns control for differences in firm characteristics (e.g., *SIZE* and *BOOK-TO-MARKET* ratios). Yet, as we noted in our discussion of Table 2, there are other fundamental differences in firm characteristics for firms with boards with zero women vis-à-vis firms with boards with three or more women. Based on the significant differences found in Table 2, we estimate cross-sectional regressions that control for additional covariates—*Ln (BOARD SIZE)*, *LEVERAGE*, *ROA*, *% INDEP DIR*, *RETURN VOLATILITY*, and *SIZE*.[17] Based on Table 2, Panel B, we also include industry fixed effects. The dependent variable is the #MeToo *CAR* multiplied by 100, and our variables of interest are the *EXCLUSIVE* and *INCLUSIVE* indicator variables.

Consistent with our univariate results, we observe contrasting coefficients for our *EXCLUSIVE* and *INCLUSIVE* indicators. That is, we observe significantly negative (positive) coefficients for the exclusive (inclusive) firms, suggesting that the dissimilar returns we documented in Table 4 remain after including additional controls for firm and industry characteristics. F-tests comparing the *EXCLUSIVE* and *INCLUSIVE* coefficients confirm significant differences between the two subsamples. For example, in column [1], using the FF5 model to benchmark returns, the F-test comparing the two coefficients is significant at the 0.001 level. Thus, the analysis in Table 5 indicates that the change in investors' beliefs about the risks injected by the #MeToo movement vary

[17] As we discuss later in the paper, our results are robust to various alternative approaches to controlling for firm characteristics, including using ln (*ASSETS*) or ln (*SALES*) instead of *ASSETS*; firm growth (Kuzmina & Melentyeva, 2021); coarsened exact matching to obtain benchmark returns; entropy balancing; and propensity matching to obtain benchmark returns.

Table 5 Does the Market Reaction to the #MeToo Movement Vary Depending on the Culture of the Firm?

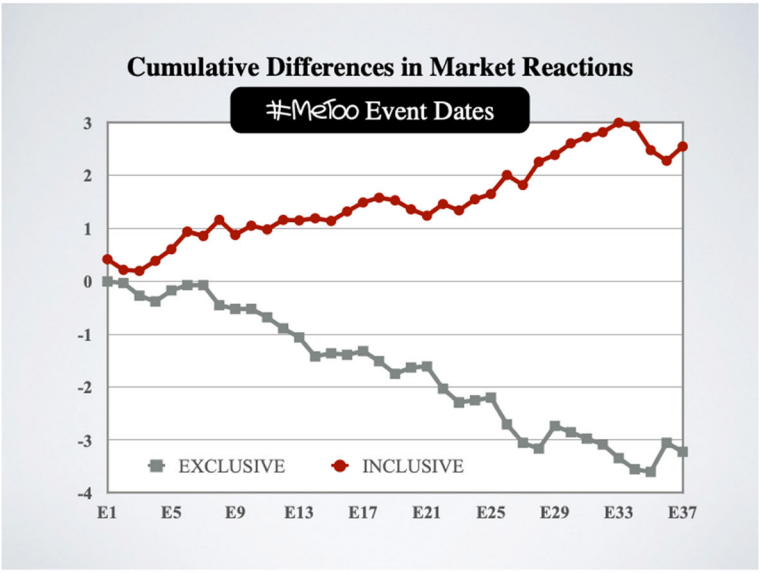
	Dependent Variable = *CAR (#MeToo Event Dates)*						
	FF5	***FFC4***	***FF3***	***CAPM_EW***	***CAPM_VW***	***DGTW_EW***	***DGTW_VW***
	[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**
EXCLUSIVE	**−3.25*** **	**−2.95** **	**−3.21*** **	**−3.19*** **	**−3.22*** **	**−2.82** **	**−2.84** **
	[−2.65]	[−2.39]	[−2.62]	[−2.60]	[−2.62]	[−2.57]	[−2.57]
INCLUSIVE	**2.19***	**2.08***	**2.54** **	**2.42** **	**2.39** **	**2.54** **	**2.85*** **
	[1.91]	[1.83]	[2.17]	[2.09]	[2.06]	[2.50]	[2.73]
Ln (BOARD SIZE)	−0.08	0.13	0.03	0.50	0.57	−3.60**	−4.07**
	[−0.04]	[0.07]	[0.02]	[0.26]	[0.29]	[−2.20]	[−2.42]
LEVERAGE	6.18***	5.63**	6.75***	7.32***	7.35***	4.70**	4.40**
	[2.61]	[2.39]	[2.85]	[3.12]	[3.13]	[2.35]	[2.15]
ROA	0.36	2.06	2.65	3.33	3.39	0.92	−0.11
	[0.06]	[0.35]	[0.45]	[0.56]	[0.57]	[0.18]	[−0.02]
% INDEP DIR	1.04	2.17	1.41	0.99	1.05	0.90	1.01
	[0.31]	[0.64]	[0.42]	[0.29]	[0.31]	[0.28]	[0.32]
RETURN VOLATILITY	−4.33	−11.07	−6.61	−15.37	−15.08	−6.29	−2.62
	[−0.33]	[−0.83]	[−0.52]	[−1.14]	[−1.12]	[−0.44]	[−0.18]
SIZE	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	[−0.78]	[−0.93]	[−1.14]	[0.59]	[0.63]	[−1.19]	[0.15]
n	2025	2025	2025	2025	2025	2025	2025
F-test: *Pr[EXCL =INCL]*	**0.001**	**0.003**	**0.001**	**0.001**	**0.001**	**0.001**	**0.000**
Adjusted R^2	0.04	0.03	0.04	0.05	0.05	0.04	0.04

This table examines whether the market reaction to the #MeToo movement varies based on the exclusive versus inclusive culture of the firm. The dependent variable is the cumulated abnormal returns associated with the full timeline of 37 events detailed in Appendix 2, computed using alternative models to compute the benchmark returns: [1] Fama-French 5-factor model, [2] Fama-French Carhart 4-factor model, [3] Fama-French 3-factor model, [4] CAPM model (equal-weighted market return), [5] CAPM model (value-weighted market return), [6] DGTW model (equal-weighted return), and [7] DGTW (value-weighted return). We include industry fixed effects based on the Fama-French 48 industry classifications. We measure all control variables based on their five-year averages ending in 2016. (Results are robust to measuring all control variables in 2016 only.) ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively, for two-tailed tests. Please refer to Appendix 3 for the variable definitions and data sources

predictably in the cross-section, based on investors' perceptions of firm culture (as signaled by gender diversity in the board room).

To depict the dynamics of the cumulative market reaction that we observe in Table 5, we plot the cumulative differences in market reactions for the *EXCLUSIVE* and *INCLUSIVE* subsamples over the 37 #MeToo event dates. The plot in Panel A of Fig. 3 illustrates a striking contrast in market reactions between the two subsamples as the movement gained momentum. We observe a steady increase in the size of the coefficient for the *INCLUSIVE* firms through the first nine event

(a)



(b)

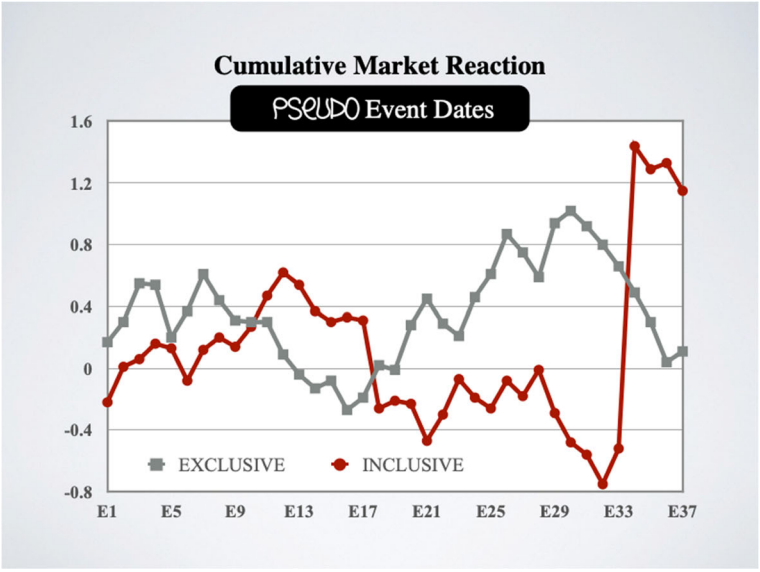


Fig. 3 Cumulative Differences in Market Reactions to the #MeToo Movement. This figure plots the cumulative differences in market reactions to the #MeToo events, comparing the *EXCLUSIVE* versus *INCLUSIVE* culture subsamples. The plotted variables are the coefficient estimates for *EXCLUSIVE* and *INCLUSIVE* obtained from 37 individual regressions of the *FF5* CAR (successively cumulating event date returns over the timeline) on the *EXCLUSIVE* and *INCLUSIVE* indicators and controls (see column 1 of Table 5) as well as industry fixed effects. Figure 3(a) uses the 37 #MeToo events described in Appendix 2; Fig. 3(b) uses 37 machine-generated pseudo-events randomly drawn using the seed of "123" in Stata

dates and continued growth of the coefficient throughout the movement. More importantly, considering the pattern for the *EXCLUSIVE* firms, we note a

symmetric decrease in the coefficient for the *EXCLUSIVE* firms. These findings highlight the importance of simultaneously considering both the *presence* and *absence* of women in the boardroom. In addition, the growing contrast in returns between the two groups over the full nine-month timeframe underscores the value of using an extended timeline instead of narrowly focusing on the start of the movement.

Collectively, this picture suggests that the unfolding of the #MeToo movement continuously revised investors beliefs about the costs of fostering a culture that excludes women vis-à-vis one that creates an inclusive work place.

4.4 Does the same cross-sectional variation emerge using pseudo-event dates?

Despite our efforts to appropriately benchmark return performance and to control for observed differences between the two subsamples, a natural question remains as to whether *unobserved* differences between the two subsamples—unattributable to the unfolding #MeToo movement—drive these documented differences. To address this question, we test whether the same set of results emerges when we replace the #MeToo event dates with 37 randomly generated "pseudo" event dates from the same time period. Specifically, we re-estimate the analysis provided in Table 5, replacing the dependent variable with the cumulative abnormal returns associated with 37 machine-generated pseudo-events randomly drawn using the seed of "123" in Stata, computed using our seven alternative models to compute the benchmark returns. We also plot the cumulative market reaction over these 37 pseudo-event dates.

As shown in Table 6, when using these randomly generated pseudo-events, we no longer detect differences in the market response between firms with exclusive and inclusive cultures. In particular, the coefficients on our *EXCLUSIVE* and *INCLUSIVE* indicator variables no longer exhibit significance; nor do they contrast in sign. Further, in contrast to the results shown in Table 5, the F-tests for differences between the coefficients for *EXCLUSIVE* and *INCLUSIVE* no longer detect differences between the two subsamples. Moreover, as shown in Panel B of Fig. 3, plotting the cumulative differences in market reactions over the 37 pseudo-event dates does not produce the striking pattern shown in Panel A.

In an untabulated analysis, we repeat the placebo test using ten alternative seeds to randomly draw the 37 pseudo-events. In each of these ten additional rounds of placebo testing, we do not detect significant differences in cumulative market reactions between the *EXCLUSIVE* and *INCLUSIVE* subsamples. As such, the contrasting patterns documented in Panel A of Fig. 3 do not manifest for these alternative pseudo-event dates. This offers further evidence in support of the conclusion that the documented return patterns for the #MeToo event timeline stem from the growing momentum of the cause.

4.5 Does the reaction differ depending on the presence of a critical mass as opposed to a token presence?

Thus far, our tests have compared the absence of women to the presence of at least three women. Yet, a question remains as to whether the market reaction differs

Table 6 Does the Same Cross-Sectional Variation Emerge Using Pseudo-Event Dates?

	Dependent Variable = *CAR* (*PSEUDO Event Dates*)						
	FF5 [1]	*FFC4* [2]	*FF3* [3]	*CAPM_EW* [4]	*CAPM_VW* [5]	*DGTW_EW* [6]	*DGTW_VW* [7]
EXCLUSIVE	1.08	0.82	1.08	1.08	1.11	0.56	0.39
	[0.84]	[0.64]	[0.83]	[0.84]	[0.86]	[0.48]	[0.39]
INCLUSIVE	0.00	0.47	0.04	0.15	0.16	1.14	0.81
	[0.00]	[0.22]	[0.02]	[0.06]	[0.07]	[0.61]	[0.43]
CONTROLS?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
n	2025	2025	2025	2025	2025	2025	2025
F-test: *Pr[EXCL = INCL]*	0.233	0.225	0.208	0.226	0.233	0.664	0.616
Adjusted R^2	0.03	0.03	0.04	0.05	0.05	0.05	0.03

This table re-estimates the analysis provided in Table 5 using randomly assigned pseudo-event dates occurring during the same time period as the #MeToo Movement. The dependent variable is the cumulated abnormal returns associated with 37 machine-generated pseudo-events randomly drawn using the seed of "123" in Stata, computed using alternative models to compute the benchmark returns: [1] Fama-French 5-factor model, [2] Fama-French Carhart 4-factor model, [3] Fama-French 3-factor model, [4] CAPM model (equal-weighted market return), [5] CAPM model (value-weighted market return), [6] DGTW model (equal-weighted return), and [7] DGTW (value-weighted return).[a] We include industry fixed effects based on the Fama-French 48 industry classifications. We measure all control variables based on their five-year averages ending in 2016. (Results are robust to measuring all control variables in 2016 only.) ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively, for two-tailed tests. Please refer to Appendix 3 for the variable definitions and data sources

[a] Specifically, Stata generated the following pseudo-event dates: 10/10/2017, 10/23/2017, 10/25/2017, 11/13/2017, 11/14/2017, 11/24/2017, 11/28/2017, 12/5/2017, 12/12/2017, 12/15/2017, 12/18/2017, 12/19/2017, 12/22/2017, 12/29/2017, 1/25/2018, 1/26/2018, 1/31/2018, 2/1/2018, 2/13/2018, 2/14/2018, 2/23/2018, 3/6/2018, 3/9/2018, 3/14/2018, 3/15/2018, 3/28/2018, 3/29/2018, 4/5/2018, 4/12/2018, 4/20/2018, 4/30/2018, 5/7/2018, 5/9/2018, 5/11/2018, 5/14/2018, 5/17/2018, and 5/22/2018

depending on the presence of a critical mass of women as opposed to a token presence.

According to Kanter (1977), a minority group cannot exert influence over a larger body of people unless its numerical size reaches a critical mass. Our choice of designating three as the minimum critical mass is based on the survey evidence provided by Erkut et al. (2008), Konrad et al. (2008), and Torchia et al. (2011), who conclude that having at least this many women serving on corporate boards exacts changes within their firms. In this section, we take the question to the data and see whether our results hold for alternative thresholds of at least one or two women directors, instead.

Specifically, we create two TOKENISM variables: an indicator representing boards with at least one woman from 2012 to 2016 inclusive, and a second indicator for boards with two or more women during the same timeframe. Using these two indicators, we re-run the regressions shown in Table 5 with each variable (in lieu of using our *INCLUSIVE* indicator). Column [1] in Table 7 mirrors our analysis in Table 5, documenting contrasting negative and positive coefficients for *EXCLUSIVE* and *INCLUSIVE* firms, respectively. Yet, the inclusion of our *TOKENISM* variables in the

Table 7 Does the Reaction Differ Depending on the Presence of a Critical Mass as Opposed to a Token Presence?

	FF5 [1]	*FF5* [2]	*FF5* [3]
EXCLUSIVE	**−3.25*** **	**−3.24*** **	**−3.53** **
	[−2.65]	[−2.63]	[−2.45]
INCLUSIVE	**2.19***		
	[1.91]		
TOKENISM? (At least 2 WOMEN: 2012–2016 inclusive)		0.01	
		[0.02]	
TOKENISM? (At least 1 WOMAN: 2012–2016 inclusive)			−0.50
			[−0.46]
CONTROLS?	Yes	Yes	Yes
n	2025	2025	2025
Adjusted R^2	0.04	0.04	0.04

This table repeats our earlier analysis (provided in Table 5, column [1]) but refines our measurement of gender representation to consider whether results hold for critical masses of at least one woman or two women directors (as opposed to the threshold of three used in prior analyses). We include industry fixed effects based on the Fama-French 48 industry classifications. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively, for two-tailed tests

remaining two specifications does not produce the same pattern (columns [2] and [3]). That is, these alternative approaches to measuring the inclusion of women on the board do not detect significant reactions by investors.

The findings in Table 7, along with those reported earlier in Tables 5 and 6, are consistent with several views about the role of women on the board. First, the market does not reward firms for having a token woman on its board, as evidenced by the insignificant coefficient on the TOKENISM variables. Second, our findings corroborate lawmakers' choice of three women as the threshold guiding the inclusion of women on the boards of California-based firms. Finally, our findings suggest that examining the impact of having women on boards might be more nuanced than merely creating an indicator for the presence of women on the board (as several papers do) (Adhikari et al., 2019). That is, our findings support the view that having three or more women directors constitutes a critical mass of women, as it relates to creating a corporate culture that values women within the workplace. They also raise a question as to whether identifying inclusivity as a percentage of the board is appropriate, particularly if one ignores board size. We examine this issue next.

4.6 Does the same cross-sectional variation emerge using alternative approaches to measuring culture?

In Table 8, we explore the extent to which our findings change when we use alternative approaches to identify *EXCLUSIVE* and *INCLUSIVE* firms. We begin by identifying

INCLUSIVE firms as those meeting or exceeding a threshold percentage (instead of a number) of women on the board. Beginning in 2007, Norway mandated a gender quota for listed companies of 40% women. Other European nations followed, including Belgium (33%) in 2012, Austria (35%) in 2013, France (40%) and Italy (33%) in 2014, and Germany (30%) in 2015. During this time, other European countries and the European Union itself took a softer approach by providing recommended thresholds but not actual gender quotas. In column [1], we continue to identify *EXCLUSIVE* firms (n = 481) based on the historical absence of women on the board (dating back to 2012) but make our threshold for inclusivity more restrictive by focusing on the 40 firms where women held at least 30% of the board seats since 2012. Despite the reduced sample size on *INCLUSIVE*, we continue to document significant, contrasting coefficients for the *EXCLUSIVE* and *INCLUSIVE* subsamples, as well as a significant difference between the two coefficients (*F*-test *Pr*[EXCL = INCL] = 0.001).[18]

In column [2], we return to our original thresholds for exclusivity and inclusivity, but we now limit our scope of consideration to the board gender diversity as of the end of 2016 and no longer factor in the board composition prior to 2016. Ignoring the historical perspective in our measurement increases the size of the *EXCLUSIVE* subsample by 15% (from 481 to 555 firms). Not surprisingly given the upward trend documented in Fig. 2, limiting attention to board gender composition as of 2016 leads to a striking increase in the number of firms identified as *INCLUSIVE*, from 122 to 316 (259%). As shown in column [2], using this more lenient approach to identifying *INCLUSIVE* cultures, the negative coefficient for the *EXCLUSIVE* firms remains robust, but the positive coefficient for *INCLUSIVE* firms no longer exhibits significance. This supports our choice of using a longer period of time, i.e., five years, to evaluate the culture of the firm, a choice consistent with the notion of corporate culture displaying a stickiness over time (Cheng & Groysberg, 2021; Schein, 1990). We, however, continue to detect the predicted significant difference across the two subsamples (*F*-test *Pr*[EXCL = INCL] = 0.006).

Several papers correlate corporate culture with the presence or percentage of women in the C-suite (Kunze & Miller, 2017; Tate & Yang, 2015), including Lins et al. (2022), who examine the association between women executives and investor response to the #MeToo movement. Accordingly, we consider the presence of women *executives* at the firm, as collected by ExecuComp, as an indicator of gender inclusivity. Ideally, we would like to replicate our methodology comparing C-suites with zero women over the same five-year period with C-suites with a critical mass of three or more women over the same time period. However, given

[18] Our reduced sample size for *INCLUSIVE* hales from the fact that the average (median) board size of the 122 inclusive firms is 11.77 (11.00), compared to an average (median) board size of 6.85 (7.00) for firms in the *EXCLUSIVE* group. In fact, when examining the distribution of board size for the inclusive group, we find a range of eight to 19 directors and that over two-thirds of the firms have a board size greater than or equal to 11. Thus, whereas the latter boards have three or more women, they do not reach the 30% threshold. We also examine if there are decreasing returns for firms that have more than three women directors. There are 26 firms with four or more women directors over the 2012–2016 timeframe, and two firms with five women directors. We find no decrease in returns after the critical mass of three is reached. In fact, we find the opposite result—the coefficient on *INCLUSIVE* increases in magnitude and significance level when we use the threshold of four or more women.

Table 8 Does the Same Cross-Sectional Variation Emerge Using Alternative Approaches to Measuring Culture?

	Dependent Variable= *FF5 CAR* (#MeToo Event Dates)				**Dependent Variable= *FF5 CAR* (PSEUDO Event Dates)**			
Identify Firm Culture Using:	*BOARD CHARACTERISTICS*		*BOARD and/or EXECUTIVE CHARACTERISTICS*		*BOARD CHARACTERISTICS*		*BOARD and/or EXECUTIVE CHARACTERISTICS*	
Exclusive Indicator:	=1 if 0 women on board since 2012 (n=481)	=1 if 0 women on board at the end of 2016 (n=555)	=1 if 0 women on board & 0 women execs since 2012 (n=122)	=1 if 0 women execs since 2012 (n=669)	=1 if 0 women on board since 2012 (n=481)	=1 if 0 women on board at the end of 2016 (n=555)	=1 if 0 women on board & 0 women execs since 2012 (n=122)	=1 if 0 women execs since 2012 (n=669)
Inclusive Indicator:	=1 if >=30% women on board since 2012 (n=40)	=1 if >=3 women on board at the end of 2016 (n=316)	=1 if >=1 women on board &>=1 women execs since 2012 (n=200)	=1 if >=1 women execs since 2012 (n=247)	=1 if >=30% women on board since 2012 (n=40)	=1 if >=3 women on board at the end of 2016 (n=316)	=1 if >=1 women on board &>=1 women execs since 2012 (n=200)	=1 if >=1 women execs since 2012 (n=247)
	[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**	**[8]**
EXCLUSIVE	**−3.19*****	**−2.56*****	−1.16	−1.24	0.19	0.22	−1.06	0.01
	[−2.61]	[−2.64]	[−0.77]	[−1.14]	[0.17]	[0.21]	[−0.76]	[0.01]
INCLUSIVE	**3.60****	0.44	−0.87	−1.64	5.95	0.78	−0.04	0.23
	[2.06]	[0.60]	[−0.87]	[−1.31]	[0.97]	[0.65]	[−0.04]	[0.19]
CONTROLS?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
n	2025	2025	1173	1173	2025	2025	1173	1173
F-test: *Pr[EXCL= INCL]*	**0.001**	**0.006**	0.865	0.671	0.365	0.727	0.509	0.794
Adjusted R^2	0.04	0.04	0.06	0.06	0.03	0.04	0.05	0.05

This table re-estimates the analyses provided in Tables 5 and 6 using alternative approaches to measuring culture. The dependent variable is the cumulated abnormal returns for the 37 event dates computed using the Fama-French 5-factor model to compute benchmark returns. We estimate Specifications [1] through [4] using the 37 actual #MeToo events detailed in Appendix 2; we estimate Specifications [5] through [8] using the 37 machine-generated pseudo-events randomly drawn using the seed of "123" in Stata. Specifications [1], [2], [5], and [6] identify firm culture using board characteristics; Specifications [3], [4], [7], and [8] identify firm culture using board and/or executive characteristics. All specifications include industry fixed effects based on the Fama-French 48 industry classifications. We include all control variables shown in Table 5. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively, for two-tailed tests. Please refer to Appendix 3 for the variable definitions and data sources

that ExecuComp (1) covers a smaller sample of firms than BoardEx and (2) only lists the five highly compensated employees (as mandated by the 14A filing rules), our critical mass group comprises only four firms. Thus, we turn to alternative indicators of gender inclusivity.

In column [3], we require *EXCLUSIVE* firms to exclude women from *both* the board room and the C-suite dating back to 2012, and we require *INCLUSIVE* firms to have at least one woman on their board and at least one woman executive in the C-suite each year since 2012. This additional restriction based on executive gender diversity changes the *EXCLUSIVE* and *INCLUSIVE* samples to 122 firms and 200 firms, respectively. In column [4], we focus exclusively on executive characteristics in our measurement of culture. To do so, we identify *EXCLUSIVE* (*INCLUSIVE*) firms based on the absence of women (presence of at least one woman) in the C-suite dating back to 2012. This alternative approach ignores board gender diversity and results in sample sizes of 669 *EXCLUSIVE* firms and 247 *INCLUSIVE* firms.

As shown in columns [3] and [4], we no longer find the differing pattern in stock returns between the *INCLUSIVE* and *EXCLUSIVE* groups. Whereas the coefficients on *EXCLUSIVE* remain negative, they are no longer significantly different from zero; the coefficients on *INCLUSIVE* flip from positive to negative (albeit insignificantly different from zero). Further, testing for the differences between coefficients no longer produces significant differences between the two classifications.[19]

In the remaining specifications (shown in columns [5] through [8]), we replicate the analyses in columns [1] through [4] but replace the #MeToo event dates with the 37 randomly generated pseudo-event dates examined earlier in Table 6. Consistent with our earlier analyses based on pseudo-events, we no longer detect differences in the market response between firms with *EXCLUSIVE* and *INCLUSIVE* cultures—regardless of our approach to measuring culture. And, again, the F-tests for differences between the coefficients for *EXCLUSIVE* and *INCLUSIVE* no longer detect differences between the two subsamples.

The evidence presented in Table 8 indicates that our results are sensitive to alternative approaches to measuring corporate culture—particularly those based on executive characteristics. Yet, we caution readers against interpreting these findings as indicative of gender diversity in the C-suite being unimportant to a firm's culture. As shown in Table 3, gender diversity in the C-suite and the boardroom are correlated, and both likely provide a signal of firm culture to investors. We further caveat the results shown in Table 8 by acknowledging the

[19] We also use a threshold of three women in the boardroom and one woman in the executive suite as our measure of inclusivity. This reduces our inclusivity sample to 40 firms only. Despite the loss of sample size, our results remain qualitatively similar. In addition, to consider whether the presence of women in the C-suite drives our main findings, we re-estimate our main analysis with our measure of INCLUSIVITY (> = 3 women directors from 2012 to 2016) but also add an indicator for the presence of one, two, or three women executives, respectively, to our regression analysis (Lins et al., 2022). Inconsistent with the notion that the presence of women in the C-suite subsumes the impact of having a critical mass of women in the boardroom, our inclusive indicator is significantly positive ($p < 0.05$ for all specifications), whereas the coefficients on the indicators for the number of women executives are insignificantly different from zero.

data limitations in the ExecuComp database, which reduce the power of these tests.

4.7 How does the market respond to the appointment of a woman to an EXCLUSIVE board?

Collectively, the evidence suggests that investors respond negatively to the events tracking the timeline of the #MeToo movement for firms with an absence of women on their boards between 2012 and 2016. We interpret these findings as suggesting that investors' perceptions of culture (as signaled by board gender diversity) shape their response to the unfolding #MeToo movement. An alternative view of the evidence may be that the negative response potentially reflects investors' fear that this movement will force women into the board room and, in so doing, push the firm out of its optimal board composition (Ahern & Dittmar, 2012; Greene et al., 2020; Levitt, 2021). To explore this possibility, we examine the market reactions to a subsequent appointment of a woman (or women) to boards for our sample of *EXCLUSIVE* firms that have historically excluded women. We examine appointments from October 2017 (the beginning of the #MeToo movement) through May 2020.

Table 9 documents the cumulative abnormal returns for three windows surrounding the announcement dates: day [0] only, days [0,+1], and days [−1,+1]. We use two methods to determine the event dates. In Panel A, we hand-collect new director appointment announcements by searching for the firms' earliest press releases or

Table 9 How Does the Market Respond to the Appointment of a Woman to an Exclusive Board?

Cumulative Abnormal Returns Surrounding the Appointment Dates			
Panel A: Appointment dates obtained from press releases			
Window	**[0]**	**[0,1]**	**[−1,1]**
CAR	**0.15%**	**0.30%**	**0.20%**
t-value	0.66	1.02	0.60
***p*>|*t*|**	0.50	0.31	0.55
n	163	163	163
Panel B: Effective dates obtained from BoardEx			
Window	**[0]**	**[0,1]**	**[−1,1]**
CAR	**−0.05%**	**0.14%**	**0.32%**
t-value	−0.25	0.49	1.00
***p*>|*t*|**	0.80	0.62	0.32
n	194	194	194

This table addresses the question of whether the market reaction to the #MeToo movement reflects investors' fears that the movement will force women into the board room, pushing the firm out of its optimal board composition. In particular, we calculate the market reaction to the appointment of women from October 2017 through May 2020 to boards that have historically excluded women. Panel A examines the cumulative abnormal returns surrounding 163 hand-collected appointment dates identified via firms' press releases and supplemented with searches of Lexis-Nexis. Panel B uses the 194 "role effective" dates available in the BoardEx database

third-party media articles using both firms' names and the directors' names as keywords. Of the 163 announcements contained in our sample, 154 encompass the appointment of one woman only and nine encompass the appointment of two women. In Panel B, we use BoardEx as our source for "role effective" dates (Green & Homroy, 2018). Accordingly, Panel B includes 194 appointments.

As both panels indicate, there is little to no positive or negative stock market reaction to the appointment of a woman to a previously all-male board of directors. Thus, we find no evidence that investors believe these appointments harm firm value. Our findings contradict the notion that the earlier #MeToo *CAR*s reflect investors' worry that firms would be pushed out of their optimal board structure in an effort to include women.

4.8 Robustness

The multivariate regressions in Tables 5, 6, 7 annd 8 control for various firm and industry characteristics. In Panel A of Table 10, we provide evidence that our main finding—of a differential market reaction to the #MeToo Movement when comparing firms with exclusive cultures to firms with inclusive cultures—is robust to alternative approaches to constructing matched samples. As shown in the first column of Panel A, we continue to detect contrasting market reactions to the movement depending on the existing culture of the firm when we execute propensity-score matching (using the control variables included in our earlier multivariate analyses) to identify similarly situated control firms. In column [2], we find the results are robust to using entropy balancing to construct the matched sample. In untabulated analyses, results continue to hold when we execute a "hard matching" approach to identify the nearest neighbors in terms of *SIZE*, *ROA*, and *INDUSTRY*. Consistent with our earlier findings, we continue to detect no significant coefficients or differences between subsamples when we replace our #MeToo event dates with the pseudo-event dates (columns [3] and [4]).

In Panel B of Table 10, we conduct several additional robustness tests. In the first two columns, we consider potential confounding events. In column [1], we exclude 857 firms that announce earnings on any of the 37 #MeToo event dates. Consistent with the expectation that earnings announcement confounds are evenly distributed across the full sample, this reduces the exclusive and inclusive subsamples by 40% and 39%, respectively. Despite the considerable reduction in power associated with the reduction in sample size, we continue to detect significant differences in market reactions across the two subsamples, as evidenced by a significant F-test that manifests only when we examine the actual #MeToo event dates (as opposed to the pseudo #MeToo event dates, as shown in column [5]). In an untabulated analysis, we drop the #MeToo event dates that fall within the week surrounding an earnings announcement event and use the FF5 model to compute the average abnormal return on the remaining #MeToo event or pseudo-event dates. Again, we continue to document contrasting market reactions between the inclusive and exclusive firms along the MeToo event dates. In column [2] we exclude 18 firms with sexual harassment scandal revelations during the nine-

[0] See California Senate Concurrent Resolution No. 62 (September 20, 2013).

Table 10 Robustness Tests

Panel A: Alternative Approaches to Constructing Matched Samples

	Dependent Variable = *FF5 CAR* (#MeToo Event Dates)		**Dependent Variable= *FF5 CAR* (PSEUDO Event Dates)**	
	Propensity Matching [a]	Entropy Balancing	Propensity Matching [a]	Entropy Balancing
	[1]	**[2]**	**[3]**	**[4]**
EXCLUSIVE	**−3.78*****	**−3.55*****	−0.73	1.42
	[−3.42]	[−2.69]	[−0.43]	[0.72]
n	1990	2025	1990	2025
INCLUSIVE	1.54	**2.47*****	0.23	1.06
	[1.10]	[2.82]	[0.89]	[0.54]
n	1983	2025	1983	2025

Panel B: Additional Robustness Addressing Confounding Events and Firm Traits

	Dependent Variable= *FF5 CAR* (#MeToo Event Dates)				**Dependent Variable= *FF5 CAR* (PSEUDO Event Dates)**			
	Excluding firms with earnings announced on any of the 37 event dates [b]	**Excluding firms with scandal revela-tions**	**Controlling for the ln of *SIZE* and *SALES GROWTH***	**Excluding firms with board size of less than 6 directors**	**Excluding firms with earnings announced on any of the 37 event dates [b]**	**Excluding firms with scandal revela-tions**	**Controlling for the ln of *SIZE* and *SALES GROWTH***	**Excluding firms with board size of less than 6 directors**
	Confounding Events		**Firm Traits**		**Confounding Events**		**Firm Traits**	
	[1]	**[2]**	**[3]**	**[4]**	**[5]**	**[6]**	**[7]**	**[8]**
EXCLUSIVE	**−4.69*****	**−3.23*****	**−2.28****	**−3.02****	0.69	0.13	0.27	−0.18
	[−3.03]	[−2.63]	[−2.23]	[−2.30]	[0.48]	[0.11]	[0.25]	[−0.17]
INCLUSIVE	**2.16**	**2.07***	**2.14****	**2.60****	1.54	1.61	0.70	1.20
	[1.45]	[1.73]	[2.17]	[2.32]	[0.42]	[0.64]	[0.31]	[0.49]
CONTROLS?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 10 (continued)

n	1168	2007	2025	1848	1168	2007	2025	1848
F-test: *Pr[EXCL = INCL]*	**0.001**	**0.002**	**0.002**	**0.001**	0.902	0.616	0.868	0.635
Adjusted R^2	0.03	0.04	0.06	0.04	0.03	0.03	0.06	0.04

This table re-estimates the analyses provided in Tables 5 and 6. Panel A uses alternative approaches to construct matched samples. Panel B addresses confounding events and controls for firm traits. The dependent variable is the cumulated abnormal returns for the 37 event dates computed using the Fama-French 5-factor model to compute benchmark returns. In Panel A, we estimate Specifications [1] and [2] using the 37 actual #MeToo events detailed in Appendix 2; we estimate Specifications [3] and [4] using the 37 machine-generated pseudo-events randomly drawn using the seed of "123" in Stata. In Panel B, we estimate Specifications [1], [2], [3], and [4] using the 37 actual #MeToo events detailed in Appendix 2; we estimate Specifications [5], [6], [7], and [8] using the 37 machine-generated pseudo-events randomly drawn using the seed of "123" in Stata. All specifications include industry fixed effects based on the Fama-French 48 industry classifications. We include all control variables shown in Table 5. ***, **, and * denote significance at the 1%, 5%, and 10% level, respectively, for two-tailed tests. Please refer to Appendix 3 for the variable definitions and data sources

[a] We execute propensity score matching where explanatory variables include natural log of *BOARD SIZE*, *LEVERAGE*, *ROA*, *%INDEP DIR*, *RETURN VOLATILITY* and *SIZE*. Sample size is reduced from the 2025 shown in Table 5 because we remove observations without common support. Because the matching process is executed separately for each subsample, we could not jointly test the different treatment effects of *EXCLUSIVE* versus *INCLUSIVE* using F-tests

[b] For Specifications [1] and [5], deleting observations where the firm announces earnings on any of the 37 #MeToo event dates reduces the *EXCLUSIVE* subsample by 40% (the number of observations declines from 481 to 290) and reduces the *INCLUSIVE* subsample by 39% (the number of observations declines from 122 to 74)

month #MeToo period. We continue to detect significant differences in market reactions across the two subsamples, as demonstrated by a significant F-test that manifests only when we examine the actual #MeToo event dates (as opposed to the pseudo #MeToo event dates, as shown in column [6]).

We next turn our attention to controlling for firm size (using alternative approaches) and sales growth. In column [3], we document that our results are robust to the inclusion of the log of assets and sales growth in the regression. In column [4], we examine whether our results hold when we concentrate on boards with six or more directors only. The California gender diversity law that requires public companies headquartered in California to maintain a board with at least three women applies only to those companies with six or more directors. We find that our results are robust to eliminating the 177 firms with less than six directors.

Finally, we examine whether California firms are more likely to have boards with three or more women during our 2012–2016 timeframe, compared to firms headquartered in other states. In 2013, the California legislature passed a resolution encouraging (but not mandating) all publicly held firms in California to have a minimum number of women on their boards by December 2016.[20] We find that of the 122 *INCLUSIVE* firms, only 10 were headquartered in California. In the same vein, the inclusion of state fixed effects in our main analyses does not alter our findings (untabulated).

5 Conclusion

In this study, we identify a novel setting in which gender itself may matter to investors. That is, we use gender to measure culture, as opposed to using it to identify specific skills brought to the table, which has been a focus of prior studies. In so doing, we take board composition as a given and instead focus on changes in investors' beliefs about gender-related firm risk.

In particular, we exploit a shock in investor attention to the issue of sexual misconduct in the workplace to provide evidence that the #MeToo movement revised investors' beliefs about the costs of fostering a culture that excludes women, as reflected by the absence of women directors in the board room. Tracking the timeline of events associated with the #MeToo movement (beginning with the Harvey Weinstein exposé in October 2017 in the *New York Times*), we document contrasting market reactions to the movement, depending on the existing culture of the firm. While firms that have traditionally excluded women from their board experienced a negative market response as momentum for the cause increased, firms that embraced the inclusion of three or more women on their board enjoyed positive returns. We also present evidence that the market does not reward firms for tokenism (i.e., having only one or two women directors in the boardroom).

In the context of increased regulatory attention to board gender diversity, as well as the ESG activist campaigns by large institutional investors to diversify boards, our study documents a shift in investors' beliefs about the costs and benefits of fostering an exclusive or inclusive firm culture, as reflected by the gender diversity of the boardroom. Accordingly, our findings inform advisors, regulators, and other stakeholders as they consider approaches to advancing diversity and inclusion in ways that have a meaningful impact on firm value.

Appendix 1

Table 11 Sexual Harassment Scandal and Firm Value

Panel A: Full sample (n=92 scandal announcements)				
Cumulative Abnormal Returns				
Window	**[0]**	**[0,1]**	**[0,2]**	**[0,3]**
CAR	**−0.48%***	**−1.13%*****	**−1.14%*****	**−1.32%**
t-value	[−1.68]	[−2.94]	[−3.17]	[−3.69]

Panel B: Full sample partitioned by pre−/post-#MeToo movement		
Window	**Pre-#MeToo**	**Post-#MeToo**
	[n=49]	**[n=43]**
[0,0]	0.04%	**−1.08%***
	[0.20]	[−1.92]
[0,1]	−0.28%	**−2.11%** ***
	[−0.89]	[−2.92]
[0,2]	−0.05%	**−2.39%** ***
	[−0.12]	[−4.16]
[0,3]	−0.45%	**−2.31%** ***
	[−1.14]	[−3.91]

Borelli-Kjaer et al. (2021) examine the market reaction to 199 global sexual harassment scandals occurring during 2005 through 2018 and find that, on average, market value declines by 1.5% over the day of the scandal announcement through the following trading day. Using their sexual harassment event sample (provided in Appendix A of their paper), we corroborate their findings when limiting the event sample to the 92 scandals associated with the NYSE- and NASDAQ-listed firms included in our sample. We calculate cumulative abnormal returns using the Fama-French five-factor model (FF5), with the estimation window for computing the expected returns consisting of 250 trading days with a gap of one month preceding the scandal dates.

Appendix 2

Table 12 #MeToo Event Timeline

No.	Date	Event Description
E1	**5-Oct-17**	Actress Ashley Judd accuses media mogul Harvey Weinstein in a breaking story by The NYT.
E2	**12-Oct-17**	Roy Price, head of Amazon Studios, resigns after producer Isa Hackett accuses him in an interview with The Hollywood Reporter of lewd behavior and propositions in 2015.
E3	**15-Oct-17**	Actress Alyssa Milano reignites "Me Too" with the tweet "If you've been sexually harassed or assaulted write 'me too' as a reply to this tweet," and it quickly turned into a movement.
E4	**18-Oct-17**	Olympic gymnast McKayla Maroney tweets that she was sexually assaulted by former team doctor Lawrence G. Nassar, who recently has been sentenced to 60 years in federal prison on child pornography charges.
E5	**29-Oct-17**	The first accusation against Kevin Spacey lands, with Anthony Rapp claiming that Spacey made sexual advances toward him when he was 14.
E6	**9-Nov-17**	Washington Post first publishes investigative piece about Republican Senate nominee Roy Moore's alleged history of preying upon underage girls.
E7	**10-Nov-17**	Louis C.K. confirms Nov. 9 NYT report about several women who accused him of sexual misconduct: "These stories are true."
E8	**29-Nov-17**	The "Today" show opens with a stunning revelation that co-host Matt Lauer had been fired after NBC received detailed allegations about the anchorman's sexual misconduct.
E9	**30-Nov-17**	Garrison Keillor is fired from Minnesota Public Radio after accusations of sexual misconduct. Russell Simmons steps down from his companies after writer Jenny Lumet accuses him of sexual assault in The Hollywood Reporter.
E10	**6-Dec-17**	Time magazine names the "Silence Breakers" its 2017 Person of the Year, citing individuals like Tarana Burke and Terry Crews as forces behind this watershed moment.
E11	**7-Dec-17**	At the urging his party, U.S. Sen. Al Franken, D-Minn., says he'll resign from Congress amid sexual misconduct allegations. Dylan Farrow pens op-ed about Woody Allen and asks, again, why the slew of sexual misconduct allegations against her adoptive father haven't made more of an impact on his career.
E12	**11-Dec-17**	Mario Batali goes on leave from his show and restaurants after four women allege sexual harassment. He offers an apology and says the behavior described in the accusations does "match up" with his actions.
E13	**20-Dec-17**	The Los Angeles Times breaks the story of seven men accusing successful theater prodigy Gary Goddard of molesting or attempting to molest them as boys. The news followed a November essay written by actor Anthony Edwards, in which he made similar claims.
E14	**1-Jan-18**	More than 300 women of Hollywood form an anti-harassment coalition called Times Up.
E15	**7-Jan-18**	The 75th Golden Globes Awards was held in Beverly Hills, Calif. Many stars wore all black in solidarity with the Time's Up movement and some donned a Time's Up pin designed by stylist and costume designer Arianne Phillips.* On the same day, Oprah Winfrey accepted the Cecil B. DeMille Award for lifetime achievement at the Golden Globes. In her acceptance speech, she mentioned being "inspired by all the women who have felt strong enough and empowered enough to speak up and share their personal stories." She continued, "But it's not just a story affecting the entertainment industry. It's one that transcends any culture, geography, race, religion, politics or workplace."

Table 12 (continued)

No.	Date	Event Description
E16	**11-Jan-18**	In interviews with The Los Angeles Times, five women accused Franco, 39, of behavior they found to be inappropriate or sexually exploitative. Four were his students, and another said he was her mentor.
E17	**18-Jan-18**	After several prominent figures in the restaurant industry, including celebrity chef Mario Batali, were accused of sexual misconduct, Chicago chefs and restaurateurs spoke out against rampant sexual harassment in kitchens. When asked about the challenges, Beverly Kim, chef/co-owner at Parachute restaurant in Avondale, spoke about "the acceptance of 'This is how it is, this is how restaurants are, and you've got to deal with it or you're out.' "
E18	**20-Jan-18**	More than a million people took to the streets around the nation for the second annual Women's March. This year's event, held on the anniversary of President Donald Trump's oath of office, focused on disapproval of his administration and policies, as well as encouraging people to vote.
E19	**28-Jan-18**	Actor Jeremy Piven was first accused of sexual assault by three women in early November 2017. On Jan. 28, three more women came forward to make allegations against the "Entourage" star. He has denied all allegations.
E20	**3-Feb-18**	In a NYT article, actress Uma Thurman accused disgraced movie mogul Harvey Weinstein of forcing himself on her sexually years ago in a London hotel room. Thurman also said that during filming, "Kill Bill" director Quentin Tarantino coerced her into driving a car she believed was faulty, and spitted in her face and choked her in scenes where other people are seen doing it on screen.
E21	**6-Feb-18**	Country music star Vince Gill showcased a personal song about sexual abuse at Nashville's Country Radio Seminar. "We're living in a time right now when finally people are having the courage to speak out about being abused," Gill said, sharing his own experience with sexual assault in the seventh grade.
E22	**12-Feb-18**	A key staffer in Illinois House Speaker Michael Madigan's political operation made unwanted advances to a female campaign worker and sent her inappropriate phone texts, Madigan acknowledged in cutting the longtime aide loose. Madigan praised Alaina Hampton, below, as a "courageous woman" for coming forward to complain. But in an interview with the Tribune, she said the action took far too long.
E23	**20-Feb-18**	Lawyers for Harvey Weinstein said in federal court in New York that a proposed class-action lawsuit filed by six women should be rejected because the alleged assaults took place too long ago and they failed to offer facts to support claims of racketeering. The lawyers cited comments made by Streep, pictured here in 2012, who had said Weinstein had always been respectful in their working relationship. Streep slapped back, saying Weinstein's use of her statement "as evidence that he was not abusive with many OTHER women is pathetic and exploitive."
E24	**25-Feb-18**	In a pointed Vanity Fair essay, Monica Lewinsky writes about how she had come to view her affair with Clinton as "a consensual relationship" - and how all the women (and men) now speaking out about sexual misconduct have given her a "new lens" through which to see her own story.
E25	**4-Mar-18**	The #MeToo and Time's Up movements were ever present at this year's Oscars ceremony. Host Jimmy Kimmel ribbed Harvey Weinstein and others sullied by harassment scandals in his opening monologue. Three Weinstein accusers -- Ashley Judd, Annabella Sciorra and Salma Hayek -- spoke to the effects ushered in by the producer's downfall. "The changes we're witnessing are being driven by the powerful sound of new voices, of different voices, of our voices joining together in a mighty chorus that is finally saying time's up," Judd added.
E26	**12-Mar-18**	James Levine, whose 46-year career at the Metropolitan Opera established him as a towering figure in classical music, was fired by the company after an investigation found evidence of sexual abuse and harassment.

Table 12 (continued)

No.	Date	Event Description
E27	**19-Mar-18**	Fortune magazine publishes an article detailing the accounts of two women who say Tronc chairman and investor Michael Ferro made unwanted sexual advances toward them in 2013 and 2016 during separate business meetings. Ferro retired from the board of Tronc the same day.
E28	**27-Mar-18**	The sexual abuse scandal at Michigan State University widened when authorities charged a former dean with failing to protect patients from sports doctor Larry Nassar, along with sexually harassing female students and pressuring them for nude selfies.
E29	**2-Apr-18**	Prosecutors and the defense began picking a jury for Bill Cosby's sexual assault retrial Monday in a #MeToo era that could make the task more difficult. Experts say the movement could cut both ways for the comedian, making some potential jurors more hostile toward him and others more likely to think men are being unfairly accused.
E30	**6-Apr-18**	NowThis News released a video of author and motivational speaker Tony Robbins denouncing the #MeToo movement, saying it amounts to little more than women trying to gain "significance" by claiming "victimhood." The comments were made during an event in March.
E31	**16-Apr-18**	The NYT and The New Yorker won the Pulitzer Prize for public service Monday for breaking the Harvey Weinstein scandal with reporting that galvanized the #MeToo movement and set off a worldwide reckoning over sexual misconduct in the workplace.
E32	**23-Apr-18**	A massage therapist says Stan Lee of Marvel Comics fondled himself and inappropriately grabbed her during arranged massages at a Chicago hotel in 2017, according to a lawsuit filed in Cook County circuit court.
E33	**26-Apr-18**	Bill Cosby was convicted of drugging and molesting a woman in the first big celebrity trial of the #MeToo era, completing the spectacular late-life downfall of a comedian who broke racial barriers in Hollywood on his way to TV superstardom as America's Dad.
E34	**10-May-18**	Spotify announces it will no longer include the troubled R&B artist R. Kelly on its playlists. His music will still be available, but Spotify will not actively promote it. For months now, the #MuteRKelly campaign has called for an end to Kelly's career amid longstanding allegations of sexual abuse.
E35	**20-May-18**	The NYPD confirms their investigation of allegations made against celebrity chef Mario Batali. The following day, Eataly announces that the company is in the process of a full separation from the chef.
E36	**24-May-18**	Morgan Freeman has issued an apology for making women feel "uneasy," following a CNN report in which eight women alleged that he sexually harassed them or made inappropriate remarks.
E37	**25-May-18**	Harvey Weinstein turned himself in to New York authorities after being charged with rape in the first and third degrees, as well as criminal sexual act in the first degree for forcible sexual acts against two women in 2013 and 2004.

In 2006, Tarana Burke coined the phrase "Me Too" in an effort to reach out to sexual abuse survivors. In October 2017, the phrase (and its #MeToo hashtag on Twitter) became the slogan of the anti-sexual harassment movement. Below is the event timeline for the #MeToo movement, as chronicled by the *Chicago Tribune*. This timeline (source: https://www.chicagotribune.com/lifestyles/ct-me-too-timeline-20171208-htmlstory.html) remains the top search result from the Google and Bing search engines using the search terms "#MeToo" and "timeline," underscoring the awareness and influence of this source.

Appendix 3

Table 13 Variable Definitions and Sources

Variables	*Source*	*Definition*
CAR	CRSP, Fama-French Portfolios and Factors Database, and Kenneth R. French's website	Cumulative abnormal returns over the #MeToo events line. We use different models to compute the cumulative abnormal returns, obtaining daily stock return data from the CRSP database. Cumulative abnormal returns are computed by adding up the daily abnormal returns from the first event to last event day.
FF5	CRSP and Kenneth R. French's website	Cumulative abnormal returns over the #MeToo events using the Fama-French five-factor model. All daily five factors come from Kenneth French's website. The model is estimated in the following fashion: $r_{it}-r_{ft}=\beta_{i0}+\beta_{i1}(r_{Mt}-r_{ft})+\beta_{i2}\mathrm{SMB}_t+\beta_{i3}\mathrm{HML}_t+\beta_{i4}\mathrm{RMW}_t+\beta_{i5}\mathrm{CMA}_t+\sum_{k=1}^{37}\delta_{ik}*E_k+\epsilon_{it}$. E_k indicates the k^{th}#MeToo event date. $\mathrm{CAR\_FF5}=\sum_{k=1}^{37}\widehat{\delta_k}$. In our main analyses, we estimate the model using stock return data during October 1, 2017, to June 30, 2018, inclusively. In our dynamic analyses (i.e., Fig. 3), to keep the parameters constant over time, we first estimate the following parameters: $r_{it}-r_{ft}=\beta_{i0}+\beta_{i1}(r_{Mt}-r_{ft})+\beta_{i2}\mathrm{SMB}_t+\beta_{i3}\mathrm{HML}_t+\beta_{i4}\mathrm{RMW}_t+\beta_{i5}\mathrm{CMA}_t+\epsilon_{it}$ for the period from August 5, 2016, through August 4, 2017. We then compute the benchmark return using the estimated parameters to generate the daily abnormal return.
FFC4	CRSP, Fama-French Portfolios and Factors Database, and Kenneth R. French's website	Cumulative abnormal returns over the #MeToo events using the Fama-French Carhart four-factor model. The first three factors come from Kenneth French's website, and the momentum factor comes from Fama-French Portfolios and Factors Database maintained by WRDS. The model is estimated in the following fashion: $r_{it}-r_{ft}=\beta_{i0}+\beta_{i1}(r_{Mt}-r_{ft})+\beta_{i2}\mathrm{SMB}_t+\beta_{i3}\mathrm{HML}_t+\beta_{i4}\mathrm{UMD}_t+\sum_{k=1}^{37}\delta_{ik}*E_k+\epsilon_{it}$. E_k indicates the k^{th}#MeToo event date. $\mathrm{CAR\_FFC4}=\sum_{k=1}^{37}\widehat{\delta_k}$.
FF3	CRSP and Kenneth R. French's website	Cumulative abnormal returns over the #MeToo events using the Fama-French three-factor model. All three daily factors come from Kenneth French's website. The model is estimated in the following

Table 13 (continued)

Variables	*Source*	*Definition*
		fashion: $r_{it}-r_{ft}=\beta_{i0}+\beta_{i1}(r_{Mt}-r_{ft})+\beta_{i2}\mathrm{SMB}_t+\beta_{i3}\mathrm{HML}_t+\sum_{k=1}^{37}\delta_{ik}*E_k+\epsilon_{it}$. E_k indicates the k^{th}#MeToo event date. CAR_FF3=$\sum_{k=1}^{37}\widehat{\delta_k}$.
CAPM_EW	CRSP and Kenneth R. French's website	Cumulative abnormal returns over the #MeToo events using the CAPM model. Data of the first factor, risk-adjusted equal-weighted market return, as well as firm-level stock returns and risk-free return data, are obtained from CRSP. The model is estimated in the following fashion: $r_{it}-r_{ft}=\beta_0+\beta_1(r_{Mt}-r_{ft})+\sum_{k=1}^{37}\delta_k*E_k+\epsilon_{it}$. E_k indicates the k^{th}#MeToo event date. CAR_CAPM_EW=$\sum_{k=1}^{37}\widehat{\delta_k}$.
CAPM_VW	CRSP and Kenneth R. French's website	Cumulative abnormal returns over the #MeToo events using the CAPM model. Data of the first factor, risk-adjusted value-weighted market return, comes from Kenneth French's website. The model is estimated in the following fashion: $r_{it}-r_{ft}=\beta_0+\beta_1(r_{Mt}-r_{ft})+\sum_{k=1}^{37}\delta_k*E_k+\epsilon_{it}$. E_k indicates the k^{th}#MeToo event date. CAR_CAPM_VW=$\sum_{k=1}^{37}\widehat{\delta_k}$.
DGTW_EW	CRSP and Compustat	Cumulative abnormal returns over the #MeToo events using the Daniel et al. (1997) model. We divide all CRSP firms with non-missing variables into 5X5X5 portfolios based on market cap, book-to--market, and quarterly stock return quintiles in the preceding quarter. Overall, 125 portfolios are formed for each quarter. For each sample firm on each event day, we compute the event-day abnormal return by subtracting the focus firm's stock return from the equal-weighted stock return of all firms in the benchmark portfolio. We re-balance each portfolio quarterly. CAR_DGTW_EW is computed by summing up all the daily abnormal returns for each firm.
DGTW_VW	CRSP and Compustat	Cumulative abnormal returns over the #MeToo events using the Daniel et al. (1997) model. We divide all CRSP firms with non-missing variables into 5X5X5 portfolios based on market cap, book-to--market, and quarterly stock return quintiles in the preceding quarter. For each sample firm on each event day, we compute the event-day abnormal return by subtracting the focus firm's stock return from the value-weighted stock return of all firms in the benchmark portfolio. The market cap of each firm on September 30, 2017, the last quarter-end before the first #MeToo event,

Table 13 (continued)

Variables	*Source*	*Definition*
		determines the weight. We rebalance each portfolio quarterly. CAR_DGTW_VW is computed by summing up all the daily abnormal returns for each firm.
INCLUSIVE	BoardEx	Indicator equal to 1 if the firm has at least three women directors in every year between 2012 and 2016.
EXCLUSIVE	BoardEx	Indicator equal to 1 if the firm does not have any women directors in any year between 2012 and 2016.
Ln(BOARD SIZE)	BoardEx	The natural logarithm of number of directors.
# of DIRECTORS	BoardEx	Number of directors.
% INDEP DIR	BoardEx	Total number of independent directors divided by total number of directors in that year.
SALES	Compustat	Sales.
SIZE	Compustat	Total assets.
BOOK-TO-MARKET	Compustat	Book value of assets divided by market value of equity plus the book value of liabilities.
LEVERAGE	Compustat	Total liabilities divided by total assets.
ROA	Compustat	Earnings before interest and taxes divided by total assets.
CAPEX	Compustat	Capital expenditures divided by total asset.
RETURN VOLATILITY	Compustat	Standard deviation of monthly stock returns.
ASSET GROWTH	Compustat	Total assets in the current year divided by lagged total assets from the prior year less 1.
SALES GROWTH	Compustat	Sales in the current year divided by lagged sales from the prior year less 1.

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