

# **Female Directors and CSR: Does the Presence of Female Directors Affect CSR Focus?**

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## **Female Directors and CSR: Does the Presence of Female Directors Affect CSR Focus?**

### **Abstract**

This study examines the impact of female directors on CSR by drawing on social role theory and literature about female leadership style. Using a sample of Chinese firms from 2007 to 2021, we show a strong correlation between female directors and an enhancement in aggregate and particularly, internal CSR engagement. The relationship between female director and external CSR is negative but not significant. Further analysis reveals that in regions with stronger societal expectations towards females, the contributions of female directors to CSR activities become more pronounced. Our findings further demonstrate that a critical mass of female directors on the board is necessary to exert substantial influence on internal CSR initiatives. Notably, we find that female directors in independent and monitoring roles particularly effective in advancing internal CSR initiatives.

**Key words:** Female Directors, CSR Focus, Social Role Theory

## 1. Introduction

In recent years, the discussion surrounding gender diversity in corporate leadership has attracted significant attention from both the academic community and business sector. The increasing focus on diversity and inclusion initiatives has brought the effects of gender diversity on corporate decision-making and performance to the forefront of research. Notably, a range of studies suggest that female leaders, on average, tend to exhibit a greater inclination or better performance toward corporate social responsibility (CSR) compared to their male counterparts (See Bear et al., 2010; Boulouta, 2013; Isidro & Sobral, 2015; McGuinness et al., 2017; Rahman et al., 2023; Y. Wang et al., 2023). While the existing studies offer important perspectives on the relationship between gender and CSR, the detailed effects of gender on various CSR activities, especially the differences between internal and external CSR practices, have not been thoroughly investigated.

Differentiating between internal and external CSR activities is crucial. While CSR spans a diverse array of activities targeting specific stakeholders, it has traditionally been conceptualized as an aggregate variable, representing the sum of a firm's CSR endeavors. Contemporary academic discourse, however, suggests a segmented examination of the distinct components of CSR initiatives (H. Wang et al., 2016). This shift in perspective is underscored by two primary considerations. First, the overarching quantification of CSR may not accurately reflect a firm's true commitment to social responsibility (Aguinis & Glavas, 2012). Secondly, each aspect of CSR bears distinct attributes that merit individual analysis. For instance, internal CSR initiatives predominantly influence employee well-being and satisfaction, fostering positive organizational cultures and bolstering overall performance. In contrast, external CSR efforts are instrumental in forging and maintaining relationships with external stakeholders, encompassing communities, consumers, and the ecological environment, and play a pivotal role in sculpting a firm's public image and societal contributions. Recent literature highlights that organizations may prioritize certain CSR facets, such as external endeavors, over others like internal one (Gosselt et al., 2019). Given these considerations, a clear differentiation between internal and external CSR activities helps us better understand the multifaceted nature of CSR strategies and the allocation of resources toward specific dimensions.

In this paper, we aim to investigate the unique contributions of female directors in enhancing these CSR dimensions. Drawing on stakeholder theory, social role theory and literature about female leadership style, we argue that female directors may be particularly effective in enhancing internal CSR activities due to social role expectation and their potential transformational and risk-averse leadership style (Bass & Riggio, 2006; Eagly et al., 2003; Eagly & Karau, 2002). The focus of internal CSR on employee welfare aligns with societal expectations of women as nurturers and caregivers (Eagly & Kite, 1987) and the differentiation of management styles between male and female

directors. In contrast, female directors may exert less influence on external CSR due to their risk-averse tendencies (Levi et al., 2014) and focus on immediate impacts for internal stakeholders.

We explore the impact of female directors on CSR initiatives, with an emphasis on Chinese firms from 2007 to 2021. Drawing from CSR data from the Chinese Corporate Social Responsibility (CCSR) database compiled by Chinese Research Data Services (CNRDS) and financial data from the China Security Market and Accounting Research (CSMAR), our analysis establishes a positive relationship between the prevalence of female directors and aggregate CSR performance. Significantly, we find that firms with female directorship demonstrate heightened engagement in internal CSR, while no distinct influence is observed on external CSR - a result consistent across different CSR measurements.

To address potential endogeneity emanating from causality and omitted variables, we apply robust statistical methodologies, including fixed-effect regression, instrumental variable techniques, and dynamic panel models. These robust analyses solidify our initial findings, asserting the considerable influence of female directors on CSR initiatives, particularly on the internal front.

We then examine the role of regional societal expectation to women in shaping female directors' contributions to CSR. We find that in provinces with a high male-to-female newborn ratio, a proxy of heightened gender expectations, female directors tend to make more substantial contributions to CSR activities, which aligns with the premises of social role theory and indicates the pivotal role societal expectations play in shaping female directors' CSR focuses.

We also find that board needs to reach a critical mass of female directors to meaningfully influence and drive internal CSR initiatives. Finally, we show that female directors in independent and monitoring positions are particularly instrumental in driving internal CSR initiatives, ensuring these programs receive the requisite attention, resources, and focus for successful implementation and continuation.

Our research enriches the existing literature on the influence of female directors on CSR activities. Supplementing previous studies<sup>1</sup>, we delineate the distinct roles of female directors in internal versus external CSR activities, offering a nuanced perspective. While much of the prior research has primarily explored the influence of female directors on overall CSR (Byron & Post, 2016; Cook & Glass, 2018; Hyun et al., 2022; Ramon-Llorens et al., 2020), related disclosure behaviours (Alkhawaja et al., 2023; Manita et al., 2018), or on specific areas like employee relations (Arnaboldi et al., 2021) and environment concerns (Atif et al., 2021; Gull et al., 2023), our study delves deeper, shedding light on their unique contributions to both internal and external CSR dimensions. Notably, while Jin et al. (2021) have touched upon corporate femininity

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<sup>1</sup> A comprehensive review of the literature can be found in the work by Nguyen et al. (2020).

and the dichotomy of internal and external CSR, our research stands apart. We bridge a literature gap by examining not only independent female directors but also overall female directors and those in monitoring roles. This approach offers a holistic understanding of the multifaceted impacts female directors exert on CSR activities. Grounded in social role theory and leadership style literature, our study provides an in-depth understanding of the distinctive roles and contributions of female directors to corporate CSR initiatives, enhancing the current body of knowledge in this domain.

Our research also holds significant implications for policy debates. The findings underscore the value of gender diversity in corporate leadership and highlight the unique ways in which female directors contribute to CSR. This evidence holds relevance for policymakers and regulators seeking to promote gender diversity on corporate boards and enhance corporate social responsibility.

The remaining sections are organized as follows. Section 2 provides a theoretical framework and development of hypotheses. Section 3 addresses the data and methodology. The results of our primary analysis, a series of robustness checks, and reinforcement tests are presented in section 4. Section 5 concludes.

## **2. Theoretical Framework and Hypothesis Development**

### **2.1 CSR and CSR focus: Stakeholder theory**

Stakeholder theory recognizes that organizations have a responsibility to consider the interests and expectations of various stakeholders in their decision-making and operations. This theory asserts that organizations should not only focus on maximizing shareholder value but also take into account the needs and concerns of other stakeholders, such as employees, customers, suppliers, communities, and the environment (Freeman, 1984).

In the context of CSR, stakeholder theory provides a framework for understanding the different dimensions of CSR engagement, including both internal and external CSR. For internal CSR, stakeholder theory highlights the importance of employees as key stakeholders (Donaldson & Preston, 1995). Internal CSR focuses on promoting employee welfare, well-being, and development within the organization. It encompasses practices such as fair employment, employee training and development, work-life balance initiatives, and fostering a positive and inclusive work environment. By considering the interests and needs of employees, organizations can enhance employee satisfaction, motivation, and engagement, leading to improved organizational performance.

As per external CSR, stakeholder theory extends beyond internal stakeholders to encompass external stakeholders, such as customers, communities, and the environment (Clarkson, 1995). External CSR addresses social and environmental

concerns outside the organization through activities like philanthropy, community engagement, sustainability practices, and responsible supply chain management. By considering the interests of external stakeholders, organizations can build positive relationships, enhance their reputation, and contribute to the well-being of the broader society.

## **2.2 Gender Roles Difference Between Male and Female**

Social role theory suggests that individuals often act in line with the stereotypes and expectations associated with their social roles (Eagly & Kite, 1987). These expectations, deeply embedded in the division of labor, are influenced by both biological attributes and societal structure, acting as guiding principles for behavior in organizational settings (Eagly, 2009). Notably, these roles may be descriptive, outlining what is typical for each gender, or prescriptive, indicating what is deemed admirable for each gender within a cultural context (Eagly, 2009).

Women are commonly perceived to embody communal traits, such as empathy, caring, and concern for others, which are typically valued in community relationships whereas men are associated with agentic traits (Bakan, 1966; Dobbins, 1985; Eagly & Karau, 1991; Fondas, 1997; Fox et al., 1985; Hanson & Mullis, 1985). These gender role beliefs act as social norms and personal dispositions, shaping individuals' behavior and identities (Eagly & Wood, 2009).

Understanding these roles is pivotal for this study as they profoundly influence corporate dynamics and decision-making processes. Indeed, empirical results reveals that such gender stereotype are important determinants of how firm directors manage their firms (See Adams & Funk, 2012; Galaskiewicz, 1991; Yonghong Liu et al., 2020; Schwartz & Rubel, 2005).

## **2.3 Leadership style of female directors**

Differences in leadership styles between male and female leaders have been well-documented in research across organizational psychology and leadership studies. Among these differences, two primary distinctions are particularly noteworthy.

### **Female Directors and Transformational Leadership**

Transformational leadership, known for its inspirational and motivational qualities, encourages followers to surpass expectations and fosters their development. Notably, female leaders often exhibit these transformational behaviours (Eagly, et al., 2003). Such a leadership style is in sync with traits commonly associated with women, including empathy, emotional intelligence, and a focus on relationship-building (Rosener, 2011).

The prevalence of these traits in women can be understood in light of societal

expectation and inherent characteristics. Women are typically expected to be nurturing and attentive to relationships—traits integral to transformational leadership (Eagly, et al., 2003 2003; Koenig et al., 2011; Rosener, 2011). Additionally, research indicates that women possess higher levels of emotional intelligence than men on average (Bar-On, 2000; Mandell & Pherwani, 2003), enhancing their ability to connect with and respond to the emotions and needs of their followers (Mandell & Pherwani, 2003).

## **Female Directors and Risk-taking**

Previous literature also documents the tendency of women, especially those in corporate leadership roles, to exhibit more risk-averse behavior than their male counterparts (Byrnes et al., 1999). According to Cliff (1998), women often voice more significant concerns regarding rapid growth-related risks, opting instead for a more calculated and steady expansion pace. Cumming et al. (2015) further contend that this risk aversion observed in female directors is positively associated with decreased incidents and severity of corporate fraud. Faccio et al. (2016) supplements these findings by demonstrating that corporations under female CEO leadership typically exhibit lower leverage and more consistent earnings, highlighting the stability provided by their circumspect approach to risk.

In conclusion, the documented literature reveals crucial differences in the influence exerted by male and female directors in the boardroom, with each group contributing differently to firm performance due to their distinct leadership styles and approach to risk-taking.

## **2.5 Hypothesis development**

### **2.5.1 Female director and aggregate CSR**

We begin by examining the correlation between the presence of female directors on corporate boards and the overall engagement in CSR initiatives by firms. The foundational hypothesis of this section is derived from the social role theory of gender differences (Eagly et al., 2000). According to this theory, societal expectations and socialization processes predispose female directors to embody traits such as empathy, care, and concern for others (Chizema et al., 2015; Elsesser & Lever, 2011). These traits intuitively align with the principles of CSR initiatives, which predominantly focus on the welfare of various stakeholders (Adams & Funk, 2012; 2011).

Supporting this alignment, empirical evidence indicates that boards with a significant presence of female directors tend to exhibit heightened sensitivity toward stakeholder concerns, placing a pronounced emphasis on stakeholders' well-being (Adams & Funk, 2012; 2011; Ben-Amar et al., 2017).

Considering these insights, our hypothesis is formulated on the premise that female

directors, influenced by their intrinsic values and societal expectations, are more likely to champion CSR initiatives actively. This active advocacy is anticipated to enhance a firm's aggregate CSR.

Therefore, we posit the following:

Hypothesis 1: Higher percentage of women on the board positively impacts the firm aggregate CSR.

### **2.5.2 Female director and CSR focus**

Based on gender differences in transformative leadership and risk aversion, as discussed above, we speculate that a higher proportion of female board directors will prioritize internal CSR for two reasons.

Firstly, female directors, driven by societal expectations and their inherent characteristics, tend to embody a transformational leadership style, characterized by inspirational motivation, intellectual stimulation, individualized consideration, and idealized influence (Eagly, et al., 2003). This style is inherently supportive of internal CSR initiatives as it fosters an inclusive, supportive, and developmental environment, which is crucial for employee welfare, development, and the promotion of diversity, equity, and inclusion within the organization—core components of internal CSR. As such, female directors are likely to be more effective in promoting internal CSR.

Secondly, female directors, who may be perceived as more cautious in their approach to risk due to various factors, might have a preference for the tangible and immediate outcomes often associated with internal CSR initiatives. Research indicates that, on average, female directors may be more risk-averse than their male counterparts, which can influence the type of initiatives they prioritize (Faccio, et al., 2016; Levi, et al., 2014). This tendency towards caution may lead them to favour CSR initiatives where the impacts and returns are tangible and immediately observable, characteristic of many internal CSR activities. Conversely, the less predictable and harder-to-quantify outcomes of external CSR activities may be less appealing to directors who exhibit a cautious approach to risk (Adams & Funk, 2012; 2011; Ben-Amar, et al., 2017).

In light of these considerations, we advance the following hypothesis:

Hypothesis 2: An increased proportion of female board directors is associated with a heightened focus on internal CSR.

## **3. Methodology**

### **3.1 Data and sample selection**

In our study, firm's CSR data are collected from the CCSR database, which tracks the



CSR performance of Chinese publicly listed companies. This database provides two main indices: the first emphasizes company strengths in domains such as community engagement, environmental initiatives, employee welfare, diversity, product quality, and corporate governance; the second highlights potential concerns in these areas. Notably, while CCSR's methodology is inspired by the Kinder, Lydenberg, and Domini (KLD) social rating system, it's tailored to fit the Chinese socio-economic context.

We merged the CSR data from the CCSR database with financial metrics obtained from the CSMAR database. Given the significant revisions to the Chinese accounting standards in 2007, our analysis primarily focuses on the 2007 to 2021 period to ensure methodological accuracy. From an initial dataset comprising 8204 observations, we excluded 1073 due to incomplete financial data. Moreover, firms within the financial industry were omitted, leading to a further reduction of 621 observations. This refinement process resulted in a final dataset of 7583 observations. To mitigate the influence of outliers, continuous variables were winsorized at the one percent level on both tails.

## **3.2 Variable Construction**

### **3.2.1 Dependent Variables**

Following Yin et al. (2023) and Al-Shammari et al. (2019), we categorize firm CSR activities into aggregate CSR, internal CSR) and external CSR realms. This nuanced differentiation captures the firm CSR focus. Our empirical analysis incorporates three pivotal dependent variables: *Aggregate CSR*, *Internal CSR*, and *External CSR*.

*Aggregate CSR*: Synthesizing methodologies from earlier research (See Graves & Waddock, 1994; Le Breton-Miller & Miller, 2009; Petrenko et al., 2016; Waddock & Graves, 1997; H. Wang & Choi, 2013) , we measure a firm's aggregate CSR as the cumulative strengths—encompassing both internal and external—across four salient dimensions: employee relations, community interactions, environmental strategies, and diversity, specifically for the time span of 2007-2021.

*Internal CSR*: Following Jin, et al. (2021) and Yin, et al. (2023), this variable captures the consolidated strengths directly tied to a firm's internal CSR actions and policies. Specifically, it focuses on aspects of employee relations, which range from safety protocols and training to conflict-free workplace dynamics. Additionally, a significant facet of Internal CSR is diversity, which delves into elements like having a female CEO/chairperson, female board members, and innovative recruitment strategies.

*External CSR*: In adherence to Jin, et al. (2021), philanthropy, community engagement, and environmental stewardship are regarded as components of the extrinsic CSR. Philanthropy is quantified as a company's total philanthropic contributions within a fiscal year (Du et al., 2014; H. Wang & Qian, 2011; Zhang et al., 2016). Contrasting

philanthropy, which often benefits remote locations, community CSR is recognized as CSR initiatives conducted for local communities to engage employees, improve the employees' quality of life, and enhance their societal surroundings (De Chiara & Spena, 2011; Hoi et al., 2018; Ismail, 2009). We quantified community CSR by summing all CSR initiatives connected to the local community (for instance, programs involving local employee engagement, sponsorship of local sports teams, and advisory services to NGOs). Environmental CSR is quantified by adding all CSR initiatives related to the environment (like beneficial products and services, pollution prevention programs, recycling efforts, clean energy adoption, green office policies, environmental certifications, and environmental value propagation). Each CSR activity is coded as “1” if the company engages in it and “0” otherwise. Subsequently, we standardize philanthropy, community CSR, and environmental CSR and aggregate the three variables to create an index of extrinsic CSR.

### 3.2.2 Independent Variables

Following Adams and Ferreira (2009) and Liao et al. (2018), we formulated a continuous variable (*FP*) to assess the presence of female directors. This is delineated as the proportion of female directors to the entire board composition.

### 3.2.3 Control Variables

We include several firm characteristics in our model. This is to capture the difference in other variables that may influence firms' CSR activities. Specifically, *Firm Size* is the natural logarithm of total assets. *ROA* is the return on asset. *SOE* indicates whether the firm is state owned enterprise. *Leverage* is the ratio of total debt to total assets. *Board Size* is the natural logarithm number of directors serving on the board. *Board Independence* is the percentage of the independent directors among the total board size. *CEO duality* is a dummy variable that equals 1 if CEO also chair the board and 0 otherwise. *Top1 Ownership* is the share owned by the biggest investors. *Institutional Ownership* is the share owned by institutional investors.

### 3.3 Model specification

To empirically test our hypotheses, we estimate the following regression model:

$$Y_{i,t} = \alpha_t + \delta_i + \beta \times FP_{i,t-1} + \gamma \times X_{i,t-1} + \varepsilon_{i,t} \quad \text{Eq. (1)}$$

where *i* indices firm and *t* indices year,  $Y_{i,t}$  indices the dependent variable of our interest (i.e., *Aggregate CSR*, *External CSR*, or *Internal CSR*),  $\alpha_t$  is the year-fixed effect,  $\delta_i$  is the firm fixed effect,  $\varepsilon_{i,t}$  is the error term.  $X_{i,t-1}$  is the vector of control variables measured with a one-year lag compared with the dependent variable's measurement year. In the model,  $\beta$  captures the influence of the percentage of female directors on board on aggregate CSR, internal, and external CSR.

### 3.4 Endogeneity

Endogeneity can complicate the analysis of the linkage between female board representation and a firm's CSR actions and outcomes. The primary concern is the potential for bi-directional causality: while the presence of female directors might enhance CSR performance, it is also plausible that companies with notable CSR credentials may be more appealing to female professionals, leading to an increase in their board representation. Additionally, there's the risk of omitted variable bias. Factors such as corporate culture or industry-specific nuances can simultaneously sway a firm's gender board composition and its CSR activities. Neglecting these elements might distort the perceived association between female directorship and CSR performance.

To mitigate potential endogeneity issues within this study, we have implemented three strategic approaches. Firstly, we integrated firm-, year-, and industry-fixed effects into our primary regression model. This strategy is designed to account for any consistent, unobserved influences on a firm's CSR initiatives over time.

Secondly, we utilize Two-Stage Least Squares (2SLS) regression with instrumental variable approach. Two instrumental variables emerge as pivotal in this context: the proportion of female political representatives in a region (*Female\_Political\_Rate*) and the industry-average representation of females (*Female\_Industry\_Rate*). The rationale behind the *Female\_Political\_Rate* is rooted in the work of Adams and Ferreira (2009), which suggests that the regional political landscape can influence board gender composition without directly affecting corporate governance decisions. For this, we gathered data on key political roles, such as Mayors and Municipal Clerks—central figures in political decision-making. By gauging the female representation in these positions at the provincial level and connecting this to a firm's provincial headquarters, we aimed to capture potential external influences on board composition. In parallel, the *Female\_Industry\_Rate* serves as an instrumental variable, shedding light on an industry's gender receptivity dynamics. This metric encapsulates the notion that industries with pronounced female representation might inherently be more hospitable or aligned to women's interests. However, it's crucial to note that this broad industry marker doesn't dictate the CSR tendencies of individual firms. Through 2SLS, we initially extract the endogeneity-free predicted value of female directorship, and subsequently, we correlate this value with the company's CSR metrics.

Lastly, in addressing the endogeneity issue—specifically, the potential mutual influence between the percentage of female directors and CSR performance, as well as the presence of unobserved variables affecting both—we resort to the Dynamic Panels Model (DPM). Central to our utilization of the DPM is the incorporation of lagged values of the dependent variable as predictors. These are meticulously estimated through the Generalized Method of Moments (GMM) estimators. The GMM is instrumental in accounting for potential simultaneity, where historical values of the

dependent variable might shape its current value, and it further aids in rectifying model specification errors. Within the context of our study, it's plausible to posit that current CSR performance doesn't just mirror the present-day percentage of female directors but also reflects its own historical values. Such a continuity or 'momentum' in CSR performance is not necessarily evident from the current year's data alone. Through the DPM, by integrating lagged values of CSR performance into our explanatory variables, we are better positioned to capture this ongoing influence.

## 4. Empirical Results

### 4.1 Descriptive statistics

Table 1 provides a comprehensive statistical summary of our research sample, categorizing the data into three distinct panels. In Panel A, which covers firm CSR performance, the aggregate CSR score (*Aggregate CSR*) has a mean value of -0.35. For external CSR (*External CSR*)<sup>2</sup>, the average value is -0.20, and for internal CSR (*Internal CSR*), it's 5.39.

[Insert Table 1 here]

Panel B delves into board and ownership information. Female participation (*FP*) on boards averages at 12%, with the typical board size (*Board Size*) being 2.19 members. The proportion of independent board members across firms (*Board Independence*) is 37%. Interestingly, 20% of firms feature CEO duality (*CEO duality*). Institutional investors (*Institutional Ownership*), on average, hold about 57% of the shares, with the largest individual shareholder (*Top1 ownership*) typically controlling around 37% of shares.

Lastly, Panel C focuses on Firm Financial Information. Approximately 60% of the firms are state-owned (*SOE*). The average firm size (*Firm Size*), described as the natural logarithm of the total book value of assets, stands at 23.10, with the average leverage (*Leverage*) being approximately 49%. Return on assets (*ROA*) for the firms averages at 0.05.

### 4.2 Univariate analysis

Table 2 presents the results of our univariate analysis, where sample firms are categorized based on their proportion of female directorship. To differentiate, firms are classified into two groups: those with high and low female board participation. This classification hinges on whether the percentage of female directors in year t-1 exceeds or falls short of the sample average. Our primary aim is to discern variations in

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<sup>2</sup> For any elements composing the external CSR, we standardize the elements to make dummy variable and counting variable comparable. Then we sum all of the standardized elements. Thus, the mean of the external CSR could be negative after the standardization.

aggregate CSR, internal CSR, and external CSR.

[Insert Table 2 here]

The empirical evidence indicates that firms with a higher representation of female directors, as determined by the mean threshold of female board members, tend to have better ratings in both aggregate and internal CSR. Interestingly, this observed trend does not hold for external CSR.

### 4.3 Regression analysis

#### 4.3.1 Female director and aggregate CSR

Table 3 presents the results of our OLS regression estimates for the relation between female directors and firms' aggregate CSR. In Column (1), our model includes fixed effect for both year and firm, revealing a compellingly significant coefficient of 3.42 for the variable *FP*. As we progress to Column (2), by controlling fixed effects for industry and year and more control variables, the significance of *FP* remains evident, with a reduced coefficient of 1.82. By Column (3), which includes in both year- and firm-level fixed effects and control variables, the coefficient for *FP* further decreases to 0.49, but it remains statistically significant.

[Insert Table 3 here]

These findings are also economically significant as an increase of one standard deviation (0.12) in the *FP* is associated with an increase of  $0.49 * 0.12 = 0.0588$  standard deviation units in the aggregate CSR, on average. A 0.0588 standard deviation is equivalent to  $0.0588 * 2.67$  (the standard deviation of *Aggregate CSR*) = 0.157 units. This change represents approximately a 44.9% change relative to the mean value of *Aggregate CSR* ( $0.157 / |-0.35| = 0.449$ ).

The results demonstrate a significant and positive relationship between female directors and firms' aggregate CSR, indicating that female directors are more engaged with CSR activities than their male counterparts. Such empirical findings are consistent with our first hypothesis, underscoring the vital role that female directors play in enhancing firms' CSR performance.

#### 4.3.2 Female director and CSR focus

Table 4 presents the findings of our analysis regarding the influence of female directors on the focus of CSR activities, particularly differentiating between internal and external CSR.

Column (1) shows the regression results, highlighting the correlation between the proportion of female directors and internal CSR. The coefficient estimates for *FP* is 0.52 which suggests that, when holding all other variables constant, a unit increment in the proportion of female directors corresponds to a 0.52-unit surge in internal CSR. Delving deeper, an increase of one standard deviation (0.12) in the *FP* corresponds to an elevation of  $0.52 * 0.12 = 0.0624$  standard deviation units in the *Internal CSR*. This change, when calibrated, translates to 0.118 units, derived from equals  $0.0624 * 1.89$ , the latter being the standard deviation of Internal CSR. Considering the summary statistics of internal CSR, such results underscore the influential role of female directors in driving the firm's focus on internal CSR.

In Column (2), we show the regression estimates for the relationship between the proportion of female directors and external CSR. We find that the coefficient estimate for *FP* is negative but statistically insignificant. This result suggests that a higher proportion of female directors does not necessarily lead to a more extensive engagement in external CSR activities.

[Insert Table 4 here]

To assess if there's a notable difference between the two regression coefficients, we adopt the methodology recommended by Cohen et al. (1998) and perform an auxiliary test focused on the coefficient variance. The results highlight a marked difference between the coefficients ( $b=0.04$ ,  $p=0.00$ ). Further, a Cohen's  $f^2$  value of 0.78 emerges, signifying a potent effect size, which underscores the pronounced influence of the female directorship proportion on the prioritization of internal CSR.

In summary, these findings lend support to our Hypothesis 2, suggesting that female directors will have a more significant positive impact on internal CSR activities than on external CSR activities. In particular, our results suggest that while female directors are associated with better internal CSR performance, the association with external CSR activities is not as pronounced.

#### **4.4 Robustness check**

##### **4.4.1 Alternative measure of CSR focus**

In Table 5, we present the robustness checks of our primary analysis concerning the association between female directors and firms' CSR orientation. For this purpose, we employ alternative CSR measures sourced from a different database, specifically, the CSR valuation index from CSMAR. The approach for calculating internal CSR mirrors that based on CCSR, where we determine internal CSR using the employee scores. The external CSR is aggregated from a variety of metrics including customer scores, competitor scores, charitable contributions, tax contributions, and scores reflecting care

for other stakeholders. The outcomes from this robustness check align with our principal conclusions: the proportion of female directors holds a statistically significant positive correlation with both aggregate and internal CSR, whereas the relation to external CSR is statistically insignificant.

[Insert Table 5 here]

#### 4.4.2 Endogeneity

While our findings thus far appear significant and robust, there remains the potential for bias due to endogeneity concerns, as elaborated in Section 3.4. Such concerns may stem from omitted variables or reverse causality. To address these, we follow the methodologies detailed in Section 3.4, employing both 2SLS regression and DPM to mitigate the potential impact of endogeneity on our baseline conclusions.

Panel A of Table 6 provides the results from the 2SLS regression. Column (1) outlines the results from the first-stage regression, while Columns (2) and (3) capture the second-stage outcomes. The first-stage results in Column (1) confirm a significant association between our chosen instrumental variables and the endogenous variable, *FP*. This indicates that the proportion of local female political representatives is significantly correlated with the percentage of female board members in publicly traded companies. A similar significant relationship emerges with the industry average percentage of female board members. In Column (2), even after accounting for the influence of these instrumental variables, the impact of female directors on the outcome remains significantly positive, reaffirming the robustness of our primary regression analysis.

[Insert Table 6 here]

Panel B of Table 6 delves into the results derived from the DPM, incorporating the lagged value of CSR and estimating the relationship through the GMM approach. Here, the coefficient for *FP* emerges as significantly positive, aligning with our initial findings. In sum, even when potential endogeneity issues are factored in, our results maintain their robustness.

#### 4.5 Reinforcement tests

Our empirical results thus far align with our initial hypotheses, demonstrating a discernible inclination among female directors towards CSR, particularly regarding internal CSR. In the subsequent section, we aim to fortify these findings through a series of reinforcement tests designed to elucidate the underlying drivers connecting female directors to CSR focus.

##### 4.5.1 Societal Expectations, Female Director, and CSR

Building on the social role theory, we propose that female directors, influenced by societal expectations and socialization processes, enhance aggregate CSR and employ a transformative leadership style, thereby bolstering commitment to internal CSR.

Our empirical findings thus far indicate a positive relationship between female directorship and CSR, with a pronounced impact on internal CSR. In this section, we aim to delve deeper into the role of societal expectations in shaping this dynamic. If societal expectations are indeed a significant driving force behind female directors' contributions to CSR and internal CSR, a more pronounced effect of female directorship on both CSR and internal CSR should be observable in regions characterized by heightened societal expectations towards women.

To explore this, we introduce the male-to-female newborn ratio in the province where a firm's headquarters is located as a proxy for societal expectations towards women. The choice of this ratio is historically grounded in China's cultural preference for male heirs, serving as a tangible reflection of prevailing gender norms and societal expectations<sup>3</sup>. In provinces where this ratio is skewed, indicating a strong societal bias against females, women are often relegated to supplementary roles and expected to adhere more closely to traditional familial roles (Gao et al., 2016; Qiu et al., 2022). Within these contexts, societal pressures may compel females to embody female roles.

We introduce a binary variable, *Gender\_Bias*, which is assigned a value of 1 when the male-to-female newborn ratio in a province exceeds the sample median, indicating pronounced gender biases, and 0 otherwise. Additionally, we include an interaction term between *FP* and *Gender\_Bias* in our baseline regression to further probe the relationship.

Table 7 shows the results for the dependent variables of aggregate CSR, internal CSR, and external CSR, respectively. A noteworthy observation is the significantly positive coefficients for the interaction term between *Gender\_Bias* and *FP*, which are observed for both *Aggregate CSR* and *Internal CSR*. This empirical evidence supports our initial hypothesis: under the influence of heightened societal expectations, female directors tend to demonstrate a stronger commitment to CSR, with a distinctive emphasis on internal CSR initiatives.

[Insert Table 7 here]

#### 4.5.2 Critical Mass and Internal CSR

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<sup>3</sup> The one-child policy is a family planning policy implemented by the People's Republic of China from 1979 to 2015. Since 1979, with the implementation of reform and opening up, the urban population in mainland China has been stipulated that the urban population in mainland China can only have one child. The birth of a second child requires approval. If a second child is born in violation of the regulations, a fine ("social support fee") needs to be paid. ([https://en.wikipedia.org/wiki/One-child\\_policy](https://en.wikipedia.org/wiki/One-child_policy).) In such circumstance, in places favoring males over females, families will conduct gender selection on their children, resulting in an imbalance in the ratio of male to female newborns.



In this section, we try to discern a potential threshold in the proportion of female directors on corporate boards that might precipitate a pronounced shift towards prioritizing internal CSR. This exploration stems from the conjecture that the effect of female directorship becomes more salient once they surpass a certain representation threshold on the board—a concept reinforced by studies such as Arnaboldi, et al. (2021). To systematically uncover the tipping point where female directorship significantly affect firm's CSR focus on internal CSR, we refine our baseline model by introducing dummy variables. These variables respectively denote whether the board comprises one, two, or an even greater number of female directors, enabling us to distinguish the nuanced effects associated with diverse board gender compositions. The outcomes from this analytical strategy are encapsulated in Table 8.

[Insert Table 8 here]

Column (1) reveals that the presence of a solitary female director on the board (denoted as *Critical Mass* ( $=1$ )) does not statistically contribute towards internal CSR—highlighting that a lone female director is insufficient in forming a critical mass in this boardroom context. Column (2) shows a negligible impact of duo of female directors or more (*Critical Mass* ( $\geq 2$ )) on internal CSR. Yet, Column (3) presents compelling evidence that when boards host a trio or more of female directors, there emerges a statistically significant emphasis on internal CSR. This supports the literature consensus that three or more female directors can form a critical mass, thereby increasing their effectiveness in voicing their opinions and influencing corporate decisions (Arnaboldi, et al.; C. Liu, 2018; Yu Liu et al., 2014).

In conclusion, our findings indicate that the number of females on board should exceed a certain number to exert influence on internal CSR.

#### **4.5.3 Heterogeneous Role of Female Directors and Internal CSR**

So far, we showed that firms with higher representation of female directors were more likely to improve internal CSR performance, aligning with the social role theory and transformative leadership style. Yet, the question remains whether all female directors equally contribute to this phenomenon, or whether their influence varies depending on their roles within the board.

Notably, existing research underscores the pivotal role of independent directors in balancing the interests of various stakeholders, not just shareholders (Haniffa & Cooke, 2005; Martínez-Ferrero & García-Sánchez, 2017). This orientation towards a broader set of interests naturally inclines independent directors towards CSR initiatives, contributing to long-term corporate strategies (Jo & Harjoto, 2011). Additionally, empirical studies have observed that female directors often outperform their male counterparts in roles centered around monitoring, which, in turn, positively influences firm value and resilience (Campbell & Mínguez-Vera, 2008; Croci et al., 2020; Zalata

et al., 2019).

Given this context, our subsequent analysis explores the influence of female directors occupying various board roles — specifically independent, monitoring, and advisory roles — and examines how these different positions relate to the promotion of internal CSR initiatives.

Drawing from established methodologies, we first define the Independent Female Director Proportion (*IFP*) as the ratio of female directors classified as independent to the total number of independent directors. Second, based on Faleye et al. (2011), we characterize Monitoring directors as those serving on at least two of the principal monitoring committees, namely audit, compensation, governance, and nominations. Therefore, the Monitoring Female Director Proportion (*MFP*) denotes the ratio of female directors in monitoring capacities to the total cadre of monitoring directors. Lastly, following the guidelines of Faleye et al. (2013) and Hsu and Hu (2016), directors are earmarked as advisory if they participate in a minimum of one advisory committee without having a presence in any monitoring committees. Accordingly, the Advisory Female Director Proportion (*AFP*) represents the fraction of female advisory directors relative to the entire pool of advisory directors.

Table 9 captures the findings of our analysis into the distinct role of female directors. Columns (1) through (3) collectively convey that both independent and monitoring female directors play a pivotal role in bolstering the emphasis on internal CSR. Contrarily, the influence of female directors occupying advisory roles does not echo the same significance.

[Insert Table 9 here]

## 5. Conclusion

This study explored the influence of female directorship on CSR activities, using a sample of Chinese firms from 2007 to 2021. Our findings illustrate a strong correlation between female directorship and the enhancement of aggregate, and particularly internal CSR. We found no significant influence of female directorship on external CSR activities.

These results, robust against alternative model specifications, proxies for CSR, reverse causality, and omitted variable concerns, provide valuable insights into the dynamics of corporate boards and CSR engagement. Our analysis also suggests that societal expectations play a significant role in reinforcing the influence of female directors on CSR engagement. The findings support our initial hypothesis that societal expectations substantially shape female directors' decision-making processes, hence affecting firm CSR activities.

Moreover, the study reveals that when female directors constitute a critical mass, their influence on bolstering internal CSR initiatives intensifies. Among these directors, the independent and monitoring female directors particularly stand out, playing pivotal roles in directing the focus towards internal CSR.

These insights enrich the growing literature on gender diversity and corporate social responsibility by providing a granulated examination of the influence of female directors on distinct CSR activities, namely internal and external. By integrating social role theory, transformational leadership, and risk-aversion literature, our study advances our understanding of how gender and societal expectation shape CSR policies and decisions in corporations.

From a policy perspective, the research underscores the value of gender diversity in corporate leadership and the distinct contributions female directors make towards CSR. This evidence can guide regulators and policymakers in their endeavors to promote gender diversity on corporate boards and enhance corporate social responsibility.

In conclusion, our findings affirm that female directors play a crucial role in steering corporate social responsibility, particularly internal CSR. They are a testament to the importance of fostering diversity in leadership roles, and the unique perspective and impact female directors bring to corporate decision-making and social responsibility.

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## Appendix. Variable Definition

Variable	Explanation
<i>Aggregate CSR</i>	Sum of CSR strengths minus the sum of all concerns
<i>External CSR</i>	Sum of standardized philanthropy value, community and environment strengths
<i>Internal CSR</i>	Sum of employee relations strengths
<i>FP</i>	The percentage of the female directors among the total board
<i>Board Size</i>	The natural logarithm number of directors serving on the board
<i>Board Independence</i>	The percentage of the independent directors among the total board size
<i>CEO duality</i>	A dummy variable that equals 1 if CEO also chair the board and 0 otherwise
<i>SOE</i>	A dummy variable that equals 1 if state-owned firms and 0 otherwise
<i>Firm Size</i>	The natural logarithm of total assets
<i>Leverage</i>	The ratio of total debt to total assets
<i>ROA</i>	Return on Asset.
<i>Institutional Ownership</i>	Share owned by institutional investors
<i>Top1 Ownership</i>	Shared owned by the biggest investors
<i>Female_Political_Rate</i>	Proportion of females among municipal leaders by province
<i>Female_Industry_Rate</i>	Industry average value of female percentage among the board
<i>Female CEO</i>	A dummy variable that equals 1 if the CEO is a female and 0 otherwise
<i>Critical Mass (=1)</i>	A dummy variable that equals 1 if the number of female on board equals 1
<i>Critical Mass (&gt;=2)</i>	A dummy variable that equals 1 if the number of female on board more than 2
<i>Critical Mass (&gt;=3)</i>	A dummy variable that equals 1 if the number of female on board more than 3
<i>IFP</i>	Independent female percentage. The percentage of female independent directors among independent directors
<i>AFP</i>	Advisory female percentage. The percentage of female advisory directors among advisory directors
<i>MFP</i>	Monitor female percentage. The percentage of female advisory directors among advisory directors

*Gender\_Bias*

A dummy variable that equals 1 if male-to-female born ratio in firms headquarter province are higher than the median value in our sample.

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**Tables:****Table 1. Summary Statistics**

The table reports the summary statistics for the sampled firms on the variables used in the analysis. Panel A reports the firm CSR performance. Panel B and C reports the statistics on corporate governance, ownership, and financial conditions, over the 2007–2021 period. Definitions of the variables are provided in Appendix. All continuous variables are winsorised at the 1% level.

Variable	Obs	Mean	SD	Min	Median	Max
<b>Panel A: Firm CSR Performance</b>						
<i>Aggregate CSR</i>	7583	-0.35	2.67	-5.43	-0.61	6.74
<i>External CSR</i>	7583	-0.20	1.55	-2.91	-0.06	3.96
<i>Internal CSR</i>	7583	5.39	1.89	1	5	10
<b>Panel B: Board and ownership Information</b>						
<i>FP</i>	7583	0.12	0.12	0	0.11	0.44
<i>Board Size</i>	7583	2.19	0.21	1.61	2.20	2.83
<i>Board Independence</i>	7583	0.37	0.06	0.30	0.36	0.57
<i>CEO duality</i>	7583	0.20	0.40	0	0	1
<i>Institutional Ownership</i>	7583	0.57	0.24	0.02	0.60	1.03
<i>Top1 ownership</i>	7583	0.37	0.16	0.03	0.36	0.90
<b>Panel C: Firm Financial Information</b>						
<i>SOE</i>	7583	0.60	0.49	0	1	1
<i>Firm Size</i>	7583	23.10	1.46	20.41	22.96	28.51
<i>Leverage</i>	7583	0.49	0.20	0.07	0.50	0.94
<i>ROA</i>	7583	0.05	0.05	-0.16	0.04	0.21

**Table 2 Univariate analysis by female board proportion**

The following table presents the results of the univariate analysis. A firm is assigned to the subgroup with high female presence if the fraction of female directors on its board is equal to or greater than the sample mean. Conversely, it is assigned to the subgroup with low female presence if the fraction is below the sample mean. The t-test for differences between the two sample group variables is shown in the last column. All continuous variables are winsorized at the top and bottom 1%. Definitions of the variables are provided in Appendix. \*, \*\*, and \*\*\* denoting significance at the 1%, 5%, and 10% levels, respectively.

	Low female presence	High female presence	Difference
<i>Aggregate CSR</i>	-0.554	-0.054	0.500***
<i>Internal CSR</i>	5.2	5.672	0.472***
<i>External CSR</i>	-0.222	-0.172	0.05
<i>Board Size</i>	2.228	2.144	-0.084***
<i>Board Independence</i>	0.37	0.382	0.012***
<i>CEO duality</i>	0.16	0.248	0.088***
<i>Institutional Ownership</i>	0.594	0.528	-0.066***
<i>Top1 ownership</i>	0.382	0.357	-0.026***
<i>SOE</i>	0.67	0.491	-0.179***
<i>Firm Size</i>	23.24	22.91	-0.328***
<i>Leverage</i>	0.506	0.461	-0.045***
<i>ROA</i>	0.044	0.047	0.003***

**Table 3. Female Director and Firm Aggregate CSR**

This table reports OLS regression estimates for the relation between the percentage of female directors and firms CSR performance. The dependent variable in all columns is *Aggregate CSR*. All columns include fixed effects for firm and year. Column (1) excludes control variables. Column (2) includes two-way fixed effects for the firm and year. Column (3) includes the fixed effect for the industry. The standard set of controls include *Board Size*, *Board independence*, *CEO duality*, *SOE*, *Firm size*, *ROA*, *Institutional ownership*, and *Top1 Ownership*. Definitions of the variables are provided in Appendix. All continuous variables are winsorized at the top and bottom 1%. *t* statistics are presented in parentheses. \* \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	<i>Aggregate CSR</i>	<i>Aggregate CSR</i>	<i>Aggregate CSR</i>
	(1)	(2)	(3)
<i>FP</i>	3.42*** (12.33)	1.82*** (8.13)	0.49** (1.97)
<i>Board Size</i>		0.18 (1.62)	0.21* (1.72)
<i>Board Independence</i>		0.66*** (4.77)	0.40** (2.03)
<i>CEO Duality</i>		-0.70 (-1.41)	-0.78 (-1.31)
<i>Institutional Ownership</i>		2.16*** (3.95)	1.16** (2.18)
<i>Top1 Ownership</i>		0.35** (2.40)	0.19 (0.86)
<i>SOE</i>		0.05 (0.82)	-0.09 (-1.14)
<i>Firm Size</i>		-0.28*** (-4.68)	0.14 (0.40)
<i>Leverage</i>		0.69*** (27.99)	0.33*** (5.34)
<i>ROA</i>		-0.95*** (-5.33)	-0.44* (-1.80)
Year Fixed Effect	YES	YES	YES
Firm Fixed Effect	YES	NO	YES
Industry Fixed Effect	NO	YES	NO
<i>N</i>	7583	7583	7583
<i>Within R2</i>	0.0025	0.1474	0.0093

**Table 4. Female Directors and CSR focus**

This table reports OLS regression estimates for the relation between female director and CSR focus. The dependent variable in Column (1) is *Internal CSR*. The dependent variable in Column (2) is *External CSR*. All columns include fixed effects for firm and year. The standard set of controls include *Board Size*, *Board independence*, *CEO duality*, *SOE*, *Firm size*, *ROA*, *Institutional ownership*, and *Top1 Ownership*. Definitions of the variables are provided in Appendix. All continuous variables are winsorized at the top and bottom 1%. *t* statistics are presented in parentheses. \* \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	<i>Internal CSR</i> (1)	<i>External CSR</i> (2)
<i>FP</i>	0.52*** (2.58)	-0.06 (-0.38)
<i>Board Size</i>	0.18 (1.14)	0.26** (2.12)
<i>Board Independence</i>	-0.34 (-0.69)	-0.38 (-1.00)
<i>CEO Duality</i>	0.00 (0.07)	-0.09* (-1.81)
<i>SOE</i>	0.19 (0.70)	0.02 (0.08)
<i>Firm Size</i>	0.09* (1.83)	0.27*** (6.90)
<i>Leverage</i>	-0.25 (-1.25)	-0.19 (-1.25)
<i>ROA</i>	0.45 (1.04)	0.79** (2.36)
<i>Institutional Ownership</i>	0.30* (1.70)	-0.07 (-0.49)
<i>Top1 Ownership</i>	0.46 (1.55)	0.12 (0.50)
Year Fixed Effect	YES	YES
Industry Fixed Effect	YES	YES
<i>N</i>	7583	7583
<i>Within R</i>	0.048	0.011

**Table 5. Robustness check: Alternative measure of CSR focus**

This table reports OLS regression estimates for the relation between female director and aggregate CSR and CSR focus using CSR ratings from the CSMAR database. The dependent variable in Column (1) is Aggregate CSR\_CSMAR. The dependent variable in Column (2) is internal CSR\_CSMAR. The dependent variable in Column (3) is external CSR\_CSMAR. All columns include fixed effects for firm and year. The standard set of controls include *Board Size*, *Board independence*, *CEO duality*, *SOE*, *Firm size*, *ROA*, *Institutional ownership*, and *Top1 Ownership*. Definitions of the variables are provided in Appendix. All continuous variables are winsorized at the top and bottom 1%. *t* statistics are presented in parentheses. \* \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	<i>Aggregate CSR_CSMAR</i> (1)	<i>Internal CSR_CSMAR</i> (2)	<i>External CSR_CSMAR</i> (3)
<i>FP</i>	11.67*** (4.53)	13.45*** (24.34)	-1.58 (-0.64)
<i>Board Size</i>	-1.36 (-0.65)	0.36 (0.81)	-1.88 (-0.93)
<i>Board Independence</i>	-7.85 (-1.28)	2.54* (1.93)	-10.55* (-1.80)
<i>Institutional Ownership</i>	2.62 (1.06)	-1.26** (-2.40)	4.16* (1.77)
<i>Top1 Ownership</i>	3.95 (1.00)	3.05*** (3.61)	0.94 (0.25)
<i>CEO Duality</i>	0.67 (0.88)	-0.11 (-0.67)	0.82 (1.12)
<i>SOE</i>	-8.24** (-2.45)	-0.13 (-0.18)	-8.19** (-2.54)
<i>Firm Size</i>	5.94*** (8.38)	3.53*** (23.19)	2.38*** (3.51)
<i>Leverage</i>	11.95*** (4.37)	2.30*** (3.93)	9.59*** (3.67)
<i>ROA</i>	97.63*** (17.68)	4.48*** (3.78)	93.09*** (17.61)
Year Fixed Effect	YES	YES	YES
Firm Fixed Effect	YES	YES	YES
<i>N</i>	5757	5757	5757
<i>Within R2</i>	0.0880	0.2061	0.0719

**Table 6. Endogeneity: IV and DPM**

This table presents our 2SLS IV estimation in Panel A. In the first stage, the proportion of female director (*FP*) is regressed on two instruments, which are female political representatives (*Female\_Political\_Rate*) and the industry-average female representation (*Female\_Industry\_Rate*). *FP\_predict* is the predicted value of the proportion of female director in Column (2). In the second stage, the predicted value of the proportion of female director is used as independent variable. Results are shown in Column (2) and (3). Panel B shows the DPM results. All columns include fixed effects for firm and year. The standard set of controls include *Board Size*, *Board independence*, *CEO duality*, *SOE*, *Firm size*, *ROA*, *Institutional ownership*, and *Top1 Ownership*. Definitions of the variables are provided in Appendix. All continuous variables are winsorized at the top and bottom 1%. t statistics are presented in parentheses. \* \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

**Panel A. 2SLS IV Regression**

Dependent Variable	2SLS IV Regression		
	Stage One	Stage Two	
	<i>FP_predict</i>	<i>Aggregate CSR</i>	<i>Internal CSR</i>
	(1)	(2)	(3)
<i>Female_Political_Rate</i>	0.08** (2.36)		
<i>Female_Industry_Rate</i>	0.59*** (9.48)		
<i>FP_predicted</i>		22.06*** (8.01)	22.35*** (8.71)
<i>Board Size</i>	-0.05*** (-3.73)	1.42*** (3.47)	1.09*** (2.85)
<i>Board Independence</i>	-0.09** (-2.19)	0.57 (0.46)	1.21 (1.05)
<i>Institutional Ownership</i>	0.04*** (2.78)	-0.69* (-1.82)	-0.38 (-1.08)
<i>Top1 Ownership</i>	0.00 (0.17)	-0.26 (-0.39)	-0.55 (-0.87)
<i>CEO Duality</i>	-0.01*** (-2.70)	0.14 (0.90)	0.16 (1.13)
<i>SOE</i>	0.07*** (2.75)	-2.05*** (-2.75)	-1.82*** (-2.61)
<i>Firm Size</i>	-0.01*** (-2.76)	1.06*** (11.67)	0.69*** (8.15)
<i>Leverage</i>	0.02 (1.34)	-1.99*** (-4.40)	-1.57*** (-3.72)
<i>ROA</i>	0.03 (0.88)	-0.15 (-0.15)	-0.95 (-1.01)



Year Fixed Effect	YES	YES	YES
Firm Fixed Effect	YES	YES	YES
<i>N</i>	7583	7583	7583
Under identification test (Anderson canon. Corr. LM)			205.947
Sargan Test			37.560
Weak identification test (Cragg-Donald Wald F Statistics)			106.210

**Panel B. DPM**

Dependent Variable	DPM	
	<i>Aggregate CSR</i>	<i>Internal CSR</i>
	(1)	(2)
<i>L. Aggregate CSR</i>	0.68*** (16.92)	
<i>L. Internal CSR</i>		0.69*** (23.02)
<i>FP</i>	0.93*** (3.72)	0.63*** (3.44)
<i>Board Size</i>	0.06 (0.45)	-0.05 (-0.53)
<i>Board Independence</i>	-0.36 (-0.76)	-0.24 (-0.60)
<i>CEO Duality</i>	0.00 (0.04)	0.00 (0.02)
<i>Institutional Ownership</i>	-0.22 (-1.46)	-0.11 (-0.91)
<i>Top1 Ownership</i>	-0.32 (-1.61)	-0.25* (-1.70)
<i>SOE</i>	-0.22*** (-3.47)	-0.13*** (-3.02)
<i>Firm Size</i>	0.38*** (8.82)	0.17*** (8.27)
<i>Leverage</i>	-0.80*** (-4.05)	-0.51*** (-3.77)
<i>ROA</i>	1.02* (1.71)	0.32 (0.70)
Year Fixed Effect	YES	YES
Firm Fixed Effect	YES	YES
<i>N</i>	5896	5896

**Table 7. Societal Expectation, female director, and CSR focus**

This table presents the OLS regression estimates for the impact of societal expectation toward females on the relation between female director and CSR focus. The independent variable is *Gender\_Bias* from Column (1) to Column (3). The dependent variable in Column (1) is *Aggregate CSR*. The dependent variable in Column (2) is *Internal CSR*. The dependent variable in Column (3) is *External CSR*. All columns include fixed effects for firm and year. The standard set of controls include *Board Size*, *Board independence*, *CEO duality*, *SOE*, *Firm size*, *ROA*, *Institutional ownership*, and *Top1 Ownership*. Definitions of the variables are provided in Appendix. All continuous variables are winsorized at the top and bottom 1%. t statistics are presented in parentheses. \* \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	<i>Aggregate CSR</i>	<i>Internal CSR</i>	<i>External CSR</i>
	(1)	(2)	(3)
<i>FP</i>	1.44*** (4.30)	1.20*** (4.76)	-0.00 (-0.01)
<i>Gender_Bias</i>	0.01 (0.08)	-0.13** (-2.40)	0.11** (2.51)
<i>FP X Gender_Bias</i>	0.80* (1.88)	0.59* (1.85)	0.52 (1.04)
<i>Board Size</i>	0.66*** (4.79)	0.51*** (4.95)	0.23*** (2.80)
<i>Board Independence</i>	-0.63 (-1.28)	-0.52 (-1.41)	-0.40 (-1.34)
<i>CEO Duality</i>	0.05 (0.74)	0.06 (1.18)	0.00 (0.09)
<i>Institutional Ownership</i>	0.36** (2.43)	0.11 (1.00)	0.21** (2.36)
<i>Top1 Ownership</i>	-0.46** (-2.41)	-0.01 (-0.09)	-0.40*** (-3.47)
<i>SOE</i>	-0.26*** (-4.34)	-0.17*** (-3.81)	-0.12*** (-3.38)
<i>Firm Size</i>	0.69*** (27.91)	0.25*** (13.41)	0.49*** (32.97)
<i>Leverage</i>	-0.96*** (-5.39)	-0.59*** (-4.44)	-0.42*** (-3.93)
<i>ROA</i>	2.07*** (3.78)	0.53 (1.30)	1.82*** (5.56)
Year Fixed Effect	YES	YES	YES
Industry Fixed	YES	YES	YES

Effect			
<i>N</i>	7583	7583	7583
<i>Within R2</i>	0.1482	0.0512	0.1914

**Table 8 Number of female directors and Internal CSR**

This table presents the OLS regression estimates for the relation between the number of female directors and CSR focus. The dependent variable is internal CSR. The independent variable is Critical Mass (=1) in Column (1), Critical Mass ( $\geq 2$ ) in Column (2), and Critical Mass ( $\geq 3$ ) in Column (3). All columns include fixed effects for firm and year. The standard set of controls include: Board Size, Board independence, CEO duality, SOE, Firm size, ROA, Institutional ownership, and Top1 Ownership. Definitions of the variables are provided in Appendix. All continuous variables are winsorized at the top and bottom 1%. t statistics are presented in parentheses. \* \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	<i>Internal CSR</i>		
	(1)	(2)	(3)
<i>Critical Mass (=1)</i>	-0.03 (-0.68)		
<i>Critical Mass (<math>\geq 2</math>)</i>		0.03 (0.71)	
<i>Critical Mass (<math>\geq 3</math>)</i>			0.13* (1.79)
<i>Board Size</i>	0.17 (1.06)	0.17 (1.07)	0.15 (0.92)
<i>Board Independence</i>	-0.37 (-0.77)	-0.37 (-0.77)	-0.35 (-0.72)
<i>CEO Duality</i>	0.00 (0.07)	0.00 (0.07)	0.00 (0.03)
<i>Institutional Ownership</i>	0.30* (1.71)	0.30* (1.71)	0.30* (1.69)
<i>Top1 Ownership</i>	0.45 (1.53)	0.45 (1.52)	0.45 (1.51)
<i>SOE</i>	0.19 (0.67)	0.19 (0.69)	0.20 (0.70)
<i>Firm Size</i>	0.09* (1.71)	0.09* (1.72)	0.09* (1.79)
<i>Leverage</i>	-0.24 (-1.19)	-0.24 (-1.20)	-0.25 (-1.26)
<i>ROA</i>	0.44 (1.01)	0.44 (1.01)	0.43 (1.00)
Year Fixed Effect	YES	YES	YES
Firm Fixed Effect	YES	YES	YES
Industry Fixed Effect	YES	YES	YES
<i>N</i>	7583	7583	7583
<i>Within R<sup>2</sup></i>	0.0029	0.0028	0.0033

**Table 9. Role of Female Directors and Internal CSR**

This table presents the OLS regression estimates for the relation between the role of female director and internal CSR. The dependent variable is internal CSR. The independent variable is IFP in Column (1), *AFP* in Column (2), and *MFP* in Column (3). All columns include fixed effects for firm and year. The standard set of controls include *Board Size*, *Board independence*, *CEO duality*, *SOE*, *Firm size*, *ROA*, *Institutional ownership*, and *Top1 Ownership*. Definitions of the variables are provided in Appendix. All continuous variables are winsorized at the top and bottom 1%. t statistics are presented in parentheses. \* \*\*\*, \*\*, and \* indicate significance at the 1%, 5%, and 10% levels, respectively.

Dependent variable	<i>Internal CSR</i>		
	(1)	(2)	(3)
<i>IFP</i>	0.21** (1.98)		
<i>AFP</i>		-0.29 (-1.03)	
<i>MFP</i>			0.36*** (3.55)
<i>Board Size</i>	0.15 (0.95)	0.17 (1.08)	0.47*** (4.58)
<i>Board Independence</i>	-0.37 (-0.76)	-0.37 (-0.77)	-0.53 (-1.41)
<i>CEO Duality</i>	0.00 (0.06)	0.01 (0.09)	0.07 (1.50)
<i>Institutional Ownership</i>	0.30* (1.68)	0.29* (1.67)	0.08 (0.68)
<i>Top1 Ownership</i>	0.44 (1.47)	0.45 (1.53)	0.01 (0.04)
<i>SOE</i>	0.18 (0.65)	0.19 (0.68)	-0.19*** (-4.38)
<i>Firm Size</i>	0.09* (1.76)	0.08* (1.68)	0.24*** (13.20)
<i>Leverage</i>	-0.25 (-1.27)	-0.23 (-1.18)	-0.63*** (-4.72)
<i>ROA</i>	0.43 (0.98)	0.45 (1.03)	0.57 (1.39)
Year Fixed Effect	YES	YES	YES
Firm Fixed Effect	YES	YES	YES

Effect			
<i>N</i>	7583	7583	7583
<i>Within R2</i>	0.0034	0.0030	0.0032



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