

The Impact of Female CEOs and CFOs on Financial and Corporate Social Responsibility Reporting

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Abstract

By analyzing a longitudinal dataset from 2004 to 2019, we examine the impact of having a female CEO, CFO, and other chief executives on the likelihood of issuing a Corporate Social Responsibility (CSR) report and the tradeoff between CSR reports and traditional annual reports (ARs). Results indicate that companies with female CFOs are more likely to provide CSR reports and replace their traditional ARs with CSR reports. While the gender of the CFO matters in reporting choices, consistent evidence is not found with female CEO or other chief executives.

Keywords: Female Executives, Annual Reports, Corporate Social Responsibility Reporting

JEL Classification: M14, M48, M41

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1. Introduction

With the enactment of the Securities Act of 1934, the US Security Exchange Commission (SEC) requires public companies to file their corporate information periodically to protect investors and support decision-making. Financial statements, audit reports, and other financial/nonfinancial information are mandated in the annual filing to SEC by using Form 10-K. In addition, the SEC requires reporting companies to submit annual reports (AR) to their shareholders before holding annual meetings to elect members of their boards of directors. While some companies send their 10-K filings to shareholders as an AR to fulfill minimum legal requirements, others create colorful, informative, and comprehensive ARs to supplement financial reporting with abundant voluntary disclosures, such as performance in their corporate social responsibility (CSR) activities. As such, ARs can be a mere repetition of previously available 10-K information or a platform to showcase financial and CSR performance.

The format and content of information dissemination via an AR have changed radically over time. The glossy AR played the most important role in information dissemination for most of the 20th century. However, during the last twenty years, changes in policies, information technologies, and user preferences have made the traditional AR less important as an official financial reporting channel. While some companies still provide traditional ARs, an increasing number of companies have stopped creating standalone ARs and instead started supplying CSR and other voluntary disclosures by creating separate CSR reports or using other communication platforms (e.g., tweets.) Nevertheless, most prior empirical studies examined the content of 10-K filings instead of ARs, even though the AR is the official annual communication between management and outsiders required by the SEC.

Diversity, which refers to the degree to which differences exist between group members, has been found to affect group process and performance either positively or negatively (Van Knippenberg & Schippers, 2007). Page (2019) notes that businesses and other organizations can improve their performance and reap a “diversity bonus” by tapping the power of differences, especially when the task is complex. For example, Kouaib and Almulhim (2019), Harris, Karl, and Lawrence (2019), and Zalata, Ntim, Aboud, and Gyapong (2019) indicate that having a female CFO can increase earnings quality. In addition, there is some evidence that corporations can reduce financial misreporting and increase accuracy by hiring women CFOs (Gupta, Mortal, Chakrabarty, Guo, & Turban, 2020).

Nevertheless, we find no prior empirical research examining the impact of female executives on the tradeoffs between CSR reports and ARs. While exploring the effects of gender diversity, most previous research viewed ARs and CSR reports as independent communication channels and ignored their associations. Moreover, Rao and Tilt (2016) review the literature on the board/executive gender diversity and highlight the importance of more longitudinal studies to understand the relationships between diversity and CSR reporting. Thus, aiming at fulfilling that call for longitudinal studies, we explore the impact of executive gender on the releases of AR and CSR reports by examining a hand-collected longitudinal archive of ARs and CSR reports.

The remainder of this paper is organized into six sections. Section 2 reviews the literature on 10-K filings, annual reports, CSR reporting, and gender diversity, followed by hypothesis developments in Section 3. Section 4 discusses our research design, whose results are presented in Section 5. The last section shows the conclusions and implications for policy, practices, and future research.

2. Literature Review

2.1 10-K Filings and Annual Reports

The US Securities Act of 1933 and the creation of the Securities and Exchange Commission (SEC) in 1934 resulted in Regulation S-K, which specifies reporting requirements for various SEC filings and provides standard instructions for disclosures. Mandatory disclosures include financial (e.g., net sales, long-term obligations) and nonfinancial information (e.g., the composition of the management team and board of directors). Because public companies must use Form 10-K to file mandated information annually to the SEC, such reporting is frequently known as the 10-K filing or 10-K reporting.

While the mandatory disclosures on 10-K filings aim to improve financial transparency (Williams, 1999), those lengthy and complex disclosures have been postulated to result in “disclosure overload” to their users, especially to less-sophisticated or non-professional users with limited processing ability (Dyer, Lang, & Stice-Lawrence, 2016; Loughran & McDonald, 2014). Meanwhile, certain types of valuable and essential information for stakeholders, such as management’s policies and practices concerning social and environmental issues, are not required by Regulation S-K and thus not reported in 10-K filings, leading to a potential deficiency in corporate social transparency (Williams, 1999).

SEC rules require publicly traded companies to send an AR to their shareholders when they hold annual meetings to elect members of their boards of directors (US Securities and Exchange Commission, 2021b). Compared with 10-K filings, ARs historically were thick, glossy, colorful, decorative, informative, and comprehensive (Pethokoukis, 2008). Providing annual reports not only was an obligation of management, but also offered an opportunity to make official state-of-the-company addresses to shareholders and other stakeholders, especially before the advent of the Internet and social media (Dunne, Helliard, Lymer, & Mousa, 2013). In other words, albeit both prepared and distributed annually, AR and 10-K filings differ in their target recipients, content informativeness, and format flexibility. As such, management generally has more discretion on what/how to disclose in their AR to shareholders than in their 10-K filings to the SEC.

In the late 1990s, many companies started bundling their 10-K filing with a summary as their AR, instead of creating and distributing a standalone AR. This bundle is commonly called a “10-K wrap.” The “wrap” portion of such an AR typically provides less information and graphs than a standalone report (Pethokoukis, 2008). The popularity of the 10-K wrap directly led to a significant decrease in the traditional AR in the early 2000s. In addition, the SEC adopted Regulation Fair Disclosure in 2000 to require public companies to disseminate releases of material information to all investors at the same time. This legal requirement aimed to improve information flow by increasing the audience of conference calls or webcasts, which encouraged using the Internet for

information distribution and further weakened AR's role as the dominant communication channel, especially since print times deferred the distribution of information (Koch, Lefanowicz, & Robinson, 2013; Lee, Rosenthal, & Gleason, 2004). Because of the changes in SEC disclosure regulations and the opening of alternate channels for communication, glossy ARs have been quickly evolving or devolving as the official yearly communication between management and stakeholders.

2.2 Corporate Social Responsibility Reporting

The term Corporate Social Responsibility was officially coined in 1953 by American economist Howard Bowen in his publication, "Social Responsibilities of the Businessman" (Acquier, Gond, & Pasquero, 2011; Carroll, 1999). Corporate social responsibility expresses a fundamental morality in how a company behaves ethically toward society while contributing to economic growth (Sengur, 2020). While CSR reporting via AR can be traced back many decades (Guthrie & Parker, 1989), the Enron and WorldCom debacles highlighted the need for social responsibility and behavior accountability. CSR reports provided the mechanism whereby corporations could disclose their socially responsible behaviors. (Chan-Fishel, 2002; Padgett, Cheng, & Parekh, 2013). In response, many companies adopted CSR reporting and aligned this reporting with the Sustainability Reporting Guidelines emanating from the Global Reporting Initiative.

Many corporations include a CSR section in their ARs. Alternatively, some corporations have adopted the practice of providing standalone CSR reports separate from their ARs (Owen, 2005). Over time, the CSR reports have partially taken on the role of ARs to provide voluntary disclosures on the economic, environmental, and social impacts caused by company activities.

2.3 Gender Diversity

In response to changing economic and social conditions, organizations have embraced new structural forms, enhanced governance, and encouraged diversity among workgroups and their boards of directors. Often considered as a "double-edged sword" (Chin, Hambrick, & Treviño, 2013), diversity has an infinite number of dimensions, including demographics, socioeconomic status, and religious/ political/ skill/ education/ occupational backgrounds (Van Knippenberg, De Dreu, & Homan, 2004). Jehn, Northcraft, and Neale (1999) find that informational diversity enhances group performance, and that social category diversity improves worker morale in satisfaction, commitment, and perceived performance. However, value diversity inadvertently diminishes both group performance and worker morale. As women have played increasingly important roles in top management or corporate boards, gender diversity research has evolved into a challenging issue in academia for the last decades.

Prior literature in psychology and sociology suggests that gender behavioral differences may originate from either biological characteristics or social/cultural forces (Welsh, 1992). Eagly, Johannesen-Schmidt, and Van Engen (2003) perform a meta-analysis on forty-five studies and conclude that male leaders are more assertive, ambitious, aggressive, independent, self-confident, daring, and competitive. In contrast, female leaders are more affectionate, helpful, cooperative, collaborative, kind, sympathetic, interpersonally sensitive, and oriented towards enhancing others'

self-worth. Gender diversity research in business and management has found various behavioral differences between male and female executives/directors in their decision-making process, risk-taking preferences, managing activities, leadership styles, communication behaviors, and abidance to ethical standards (Nalikka, 2009). Ismail, Shafie, and Ismail (2020) review prior gender diversity studies and conclude that two theories were frequently used to explain the potential gender effects on financial reporting quality: Gender-ethics theory emphasizes that women are more ethical than men, whereas risk-aversion theory postulates that women are less over-confident than their male counterparts. Empirical accounting research has found evidence that female representation on the board, audit committee, CEO, or CFO leads to more conservative financial reporting, less tax aggressiveness, and higher audit fees (Khlif & Achek, 2017). In addition, male directors are more interested in maximizing economic performance (Ibrahim & Angelidis, 1994). Female directors are more attentive to qualitative and societal or environmental concerns (Bernardi & Threadgill, 2011; Bord & O'Connor, 1997; Liao, Luo, & Tang, 2015; Shafer, Fukukawa, & Lee, 2007) and associated with social disclosures (Bear, Rahman, & Post, 2010; Ben-Amar, Chang, & McIlkenny, 2017; Fernandez-Feijoo, Romero, & Ruiz-Blanco, 2014; Rao & Tilt, 2016).

3. Hypothesis Development

3.1 Gender Effects on Corporate Social Responsibility Reporting

Most empirical research examines the effect of gender diversity on voluntary disclosure levels by using two models. One model emphasizes that gender diversity improves firm performance in financial, social, and environmental activities (Erhardt, Werbel, & Shrader, 2003; Siciliano, 1996) and thus motivates management to increase voluntary disclosures (Galbreath, 2018; Nalikka, 2009). In this model, gender diversity positively drives firm performance and indirectly leads to increased voluntary disclosure. Based on gender socialization theory, the second model posits that female directors are more affectionate, ethical, risk-averse, and attentive to societal or environmental concerns than their male counterparts, directly resulting in more social disclosures (Harris et al., 2019; Liao et al., 2015). Regardless of the model assumed, prior studies show that female board members promote CSR reporting, especially when the number of female directors is greater than three (Bear et al., 2010; Ben-Amar et al., 2017; Fernandez-Feijoo et al., 2014; Lakhal, Aguir, Lakhal, & Malek, 2015). Nevertheless, most prior studies on CSR reporting focused more on the board diversity but less on the gender of chief executives. Therefore, we follow the predictions of the preceding research and posit that:

H1: A female in a chief executive role is positively associated with corporate social responsibility reporting.

3.2 Gender Effects on the Tradeoff between Financial and Corporate Social Responsibility Reporting

Prior empirical studies view AR and CSR reports as independent communication channels, examine their determinants, content, or consequences, but ignore their potentially intertwined relationships. As society calls for corporate social transparency and stakeholders request more CSR information, more companies reallocate their resources from the standalone AR to CSR reporting or

other interactions with stakeholders. Companies may elect to provide financial information via the 10-K or a 10-K wrap to fulfill legal requirements and shift non-mandatory information to other communication channels (e.g., CSR reports) to satisfy stakeholders' information needs effectively and efficiently. In other words, the importance and necessity of distributing AR to shareholders might be weakened and replaced by CSR reports.

Prior empirical studies show that female directors are more attentive to qualitative and societal/environmental concerns and associated with social disclosures. Accordingly, this research investigates the effect of executive gender on the tradeoff relationship between standalone AR and CSR reports by positing:

H2: A female in a chief executive role is associated with replacing standalone ARs with CSR reports.

4. Research Design

4.1 Sample and Data Selections

Rao and Tilt (2016) highlight the importance of conducting longitudinal studies to understand the underlying associations between gender diversity and CSR reporting. In response, this research selected the 2010 Fortune 100 companies as the sample firms and collected their ARs, CSR reports, and other data from 2004 to 2019.¹ Earlier ARs and CSR reports were less available than recent ones; thus, an arbitrary cutoff decision to collect those reports back to 2004 was made.

Of our fortune 100 companies, six retail or financial services organizations were private throughout the sample period and thus were excluded from data analyses. In addition, several firm-years of ARs were unavailable due to bankruptcies (e.g., GM, Sears), mergers and acquisitions (e.g., Aetna, DuPont, Time Warner, Sprint, Medco), privatizations (e.g., Ingram Micro, Dell), or other special events. As the sample firms were the Fortune 100 companies in 2010, fewer annual reports were missing in 2010 than in previous and subsequent years. From the original 1,504 public firm-years, 51 observations were lost due to unavailable ARs, and 284 were lost due to missing control variables.

4.2 Model and Variables

We examine the impact of the executive gender on two dependent variables by using the following equation. Appendix A shows the definitions and sources of all variables.

¹ The Fortune 100 companies is an annual list compiled and published by Fortune magazine that ranks 100 of the largest United States corporations by total revenue for their respective fiscal years, including public and private companies in various industries.

$$\begin{aligned} \text{DependentVariable} = & \beta_0 + \beta_1 \text{ExecutiveGender}_t + \beta_2 \text{ROA}_t + \beta_3 \text{EQ}_t + \beta_4 \ln \text{MV}_t + \beta_5 \text{MTB}_t \\ & + \beta_6 \text{Leverage}_t + \beta_7 \ln \text{Segment}_t + \beta_8 \text{Restructure}_t + \beta_9 \text{MA}_t + \beta_{10} \text{RetVolatility}_t + \\ & + \beta_{11} \ln \text{AnalystFollow}_t + \text{Industry Fixed Effect} + \text{Year Fixed Effect} + \varepsilon_t. \end{aligned} \quad (1)$$

As shown in Appendix A, the availability of standalone AR and annualized CSR reports are both coded as dichotomous variables. Regardless of the title on the cover, this research defines any annualized reporting on environmental, societal, and governance performance as a CSR report. Non-annualized general statements, press releases, or webpages on CSR performance are excluded in this research.

Several prior studies find the firm position occupied by a female might also influence earnings management or voluntary disclosure levels. For example, Peni and Vähämaa (2010) show that female CFOs are associated with less earnings management, while female CEOs are not. Lakhal et al. (2015) find that earnings management is associated with female board members but not with female CEO or CFO. Moreover, ARs and CSR reporting might showcase firm performance in either financial or nonfinancial activities (e.g., labor relationships, process improvements, pollution reductions). Executives in various positions (e.g., human resources, production) might influence voluntary disclosures in ARs or CSR reports, especially nonfinancial issues. Thus, the primary independent variables of this research include the gender of the CEO, CFO, and other executives. Gender data are retrieved from Execucomp or hand collection for the missing gender data.

Following prior studies on voluntary disclosure and CSR reporting, this research incorporates a panel of control variables to mitigate the potential confounding effects of firm performance (return on assets; ROA), firm size (natural log of market value; $\ln \text{MV}$), growth potential (market to book value; MTB), and financial health (debt-to-asset ratio; Leverage). A natural log of the number of business segments ($\ln \text{Segment}$), restructuring activities (Restructure), merger and acquisition activities (MA) are included to control for firms' operational complexity. In addition, earnings quality is measured using reversely coded discretionary accruals, so that a higher EQ number shows a higher earnings quality. Return volatility (RetVolatility) and the number of analysts following the firm ($\ln \text{AnalystFollow}$) reflect firms' riskiness, external monitoring, and the demand for high-quality reports. Because of the industry-specific nature of reporting and the time trend of reporting across years, two-digit industry fixed effect and year fixed effect are also included in all the models in this study. Financial and analyst following data were retrieved from Compustat and I/B/E/S, respectively.

5. Research Results

5.1 Descriptive Statistics

Table 1 reports the summary statistics of our final sample. There are 1,169 observations in the AR and CSR tests. On average, 64.9 percent (759) of the observations include CSR reports, while 46.4 percent (542) of the observations include standalone ARs. Regarding the executive gender, 6 percent (70) of the total firm years have female CEOs, 7.4 percent (87) of the total firm years have female CFOs, and 42.1 percent (428) of our firm year sample has at least one other female non-CEO executives. All the continuous variables in the table are winsorized at the top and bottom 1%.

Additionally, untabulated trend results show that the percentages of sample firms providing CSR reports increased significantly from 25 percent in 2004 to 87 percent in 2019. The difference is significant with a p-value less than 0.001. Sample firms providing standalone ARs decreased steadily from 75 percent to 23 percent during the same period. In the meantime, the percentage of female CEOs in our sample period increased from 2.78 percent to 7.69 percent, while that of a female CFO went from 0 percent to 13.85 percent over our sample period. Further, the percent of our sample with at least one other female executive increased from 36.62 percent to 65.57 percent during our sample period. This trend motivates us to examine the impact of executive gender on the tradeoff between CSR and AR.

5.2 CSR Reporting

Hypothesis 1 posits that a female in a chief executive role is positively associated with CSR reporting. The dependent variable of interest is *CSRDummy*, a dummy variable indicating whether a firm provides CSR report in year *t*. Table 2 shows the logistic regression results for the female CEO dummy variable (*FemaleCEO*), the female CFO dummy variable (*FemaleCFO*), and the number of female chief executives other than the CEO and CFO (*FemaleExecOther*) separately.

Because of the industry-specific nature of reporting and the time trend of reporting across years, a two-digit industry fixed effect and a year fixed effect are also included in all models. The number of observations in the *CSRDummy* and Standalone AR models presented in the paper is different from the number shown in the summary statistics or sample construction table. This difference is because some industries have no variation in *CSRDummy* (or Standalone AR) over time, and the observations from those industries are automatically dropped when running the regression models.² The standard errors are robust and clustered at the firm level in all models

Table 2 shows that *FemaleCEO* is insignificant in either the model with or without the control variables. In the model with control variables, the coefficient on *FemaleCEO* is -0.862 with a p-value of 0.174; in contrast, *FemaleCFO* is significantly positive in the models both with and without control variables. The coefficient on *FemaleCFO* in the model with the control variables is 1.172 with a p-value of 0.009. *FemaleExecOther* is marginally positive in the model with control variables (*FemaleExecOther* = 0.452, *p* = 0.060). When we include all the three executive gender variables in the same model, *FemaleCFO* and *FemaleExecOther* remain positive. These results suggest that CEO gender does not significantly impact a firm's CSR reporting policy. In contrast, firms with a female CFO and/or those with more non-CEO non-CFO female executives are more likely to

² Specifically, in the CSR model, none of the 6 observations from the printing and publishing industry (SIC 27) have CSR reports, all the 16 observations from the trucking and warehousing industry (SIC 42) have CSR reports, and all the 32 observations from the business service industry (SIC 73) have CSR reports. In the AR model, 3 industries have no standalone AR providers, including the printing and publishing industry (SIC 27, with 6 observations), the electronic and other electric equipment industry (SIC 36, with 32 observations), the health services industry (SIC 80, with 9 observations); 3 industries have only standalone AR providers, including the petroleum and coal products industry (SIC 29, with 48 observations), the depository institutions industry (SIC 60, with 42 observations), and the business services industry (SIC 73, with 32 observations). The industry classification is based on the 2-digit standard industrial classification codes, which can be accessed from <https://mckimmoncenter.ncsu.edu/2digitsiccodes/>.

provide CSR reports, indicating that the impact of CFO and other executives' genders do not subsume each other. Overall, these results support Hypothesis 1 that having a female CFO or more female chief executives is positively associated with corporate CSR reporting. Still, there is no indication that this result also holds for having a female CEO.

5.3 Tradeoff Between Standalone Annual Report and CSR Report

Given the finding that the gender of the CFO is more influential to the reporting choices previously documented, we focus on the CFO gender when examining the tradeoff between the standalone AR and the CSR report. Accordingly, this section formally tests whether CFO gender affects the tradeoff between CSR report and standalone AR by following the three-step test used in Burnett, Cripe, Martin, and McAllister (2012). Specifically, in Step 1, we test whether female CFO has a positive impact on CSR report; in Step 2, we examine whether female CFO has a negative effect on standalone AR; and in Step 3, we keep only the firm-years with either CSR report or standalone AR and test again whether female CFO continues having a positive impact on CSR report.

Table 3 shows the results of the tradeoff test. The first two steps are essentially the same as the CFO gender test in Table 2, but we report the same results in Table 3 to simplify column-wise comparisons for all three steps. We can see that female CFO is positively related to the CSR reports from Step 1 (FemaleCFO = 1.172, $p = 0.009$), negatively related to the standalone annual reports from Step 2 (FemaleCFO = -2.311, $p = 0.002$), and within firms providing either CSR reports or standalone AR or both, female CFO is positively related to CSR reports (FemaleCFO = 2.468, $p = 0.001$). These results provide confirming evidence for H2 that a female in a CFO role is associated with replacing standalone ARs with CSR reporting.

6. Discussions and Conclusions

Using time-series data of the Fortune 100 firms from 2004 to 2019, we examine the impact of executive gender (i.e., CEO, CFO, or other five chief executives) on firms reporting choices (i.e., CSR reports or ARs). Our results indicate that there does not seem to be a link between the CEO gender and the CSR reporting. However, a female CFO is associated with the choice of providing CSR reports and replacing the standalone AR with CSR reports. In addition, the gender of other corporate executives is also associated with the choice to employ standalone corporate social reporting. Although no link is observed for the gender of the CEO, our results support the notion that the CEO effect does not override the impact of having female diversity of other executives on the choice to provide a standalone corporate social report.

The mandated information 10-K filing is primarily financial and operational, resembles a registration statement for a public offering, and purports to satisfy sophisticated and professional users' information needs. Thus, the US SEC requires reporting companies to submit an AR to shareholders before holding annual meetings, which creates a separate channel for nonfinancial, CSR, and other voluntary disclosures in a "colorful, glossy publication" (US Securities and Exchange Commission, 2021a). When the business community calls for corporate social transparency and stakeholders request more CSR information, the importance of the AR, an official communication between corporate insiders and outsiders required by the SEC, has been weakened

by changes in SEC policies, information technologies, and user preferences. Our results suggest that the traditional AR is being replaced with a CSR report. However, this replacement is happening without any overt policy changes regarding corporate filings, which indicates an issue policymakers should directly address. In addition, we find evidence that the executives' gender may influence the use of a CSR report to satisfy stakeholders' information needs. Such findings could yield policy implications mandating 10-K and essential CSR information, regardless of corporate executives' gender, willingness, or motivation.

While most prior research examines the association between CEO gender/ board diversity and CSR performance/reporting, we find evidence that the CFO's gender plays a more critical role than the CEO's gender. This finding is consistent with Baker, Lopez, Reitenga, and Ruch (2019) that the relative powers of the CEO and the CFO determine the accrual and real earnings management. Moreover, ARs, CSR reporting, and other professional communications with investors, analysts, and other stakeholders are typically prepared and provided by the investor relationship personnel, which generally reports directly to the CFO, but rarely to the CEO. In other words, future research is encouraged to disentangle and investigate CEOs' and CFOs' respective roles in CSR engagement and reporting.

Noteworthy is that while some empirical studies emphasize gender differences, others tend to neglect or ignore them; still others take the contingency approach to examine if any moderating variable exists to affect the direction and/or strength of the relationship between gender diversity and various outcome variables (Khlif & Achek, 2017; Perryman, Fernando, & Tripathy, 2016; Welsh, 1992). For example, Li and Chen (2018) find that firm size undermines the positive impact of board gender diversity on firm performance. While several prior studies suggest that females in senior management improve earnings quality, Kouaib and Almulhim (2019) indicate that audit service significantly moderates the relationship between board gender diversity and earnings management activities. Harris et al. (2019) find that female CEOs manipulate earnings to a lesser degree than their male counterparts when given lower levels of equity-based compensation. Nevertheless, regardless of gender, all CEOs exhibit similar earnings management behavior when given high equity incentives. While this research finds an association between CFO gender and various reporting choices, future research is encouraged to explore the potential moderating or mediating effects.

Our research finds evidence of the impact of executive gender on firms reporting choices (i.e., CSR reports or the AR) by using a longitudinal archive of AR and CSR reports. Although our results are consistent with the growing literature on gender diversity, our archival research method cannot examine the decision-making process of AR and CSR reporting choices. Thus, we concur with Rao and Tilt (2016) and emphasize the importance of examining whether gender diversity matters in financial or CSR reporting through qualitative and quantitative methods, especially when the gender diversity issue is crucial to firms, academics, and policymakers.

Although the AR is the official communication between management and stakeholders and can include various voluntary disclosures, few empirical studies have examined their determinants, content, or consequence. This lack of research may be partially due to the lack of a centralized and complete archive to provide convenient access to annual reports and CSR reports. Therefore, we

recommend future researchers scrutinize the content of ARs and CSR reports to assess what/ where/ how information is reported. There are many choices being made regarding a number of attributes of the messaging and this may require extensive analyses given the heterogeneity of the choices.

Lastly, the Internet and social media have created several timely, interactive, and inexpensive communication channels between management and their stakeholders. While our study investigates the impact of the executive gender on AR or CSR reporting, we do not examine the impact of the executive gender on other reporting venues (e.g., tweets, Internet/Web-based financial reporting), which is another potential area of future study.

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Appendix A. Variable Definitions

Variables	Definitions	Source
<u>Dependent Variables</u>		
CSRDummy	Indicator variable of standalone CSR report; = 1 if firms provide standalone CSR report in year t, and 0 otherwise;	Hand Collection
Standalone AR	Indicator variable of standalone annual report; = 1 if firms provide standalone annual report in year t, and 0 if they provide 10-K wrap or 10-K only as annual reports in year t;	Hand Collection
<u>Main Independent Variables</u>		
ExecutiveGender	Gender of the chief executives in a firm in year t, with a breakdown of CEO, CFO, and other executives;	Execucomp; Hand Collection
FemaleCEO	Indicator variable for female CEO; = 1 if firms have female CEO in year t, and 0 otherwise;	Execucomp; Hand Collection
FemaleCFO	Indicator variable for female CFO; = 1 if firms have female CFO in year t, and 0 otherwise;	Execucomp; Hand Collection
FemaleExecOther	Number of the female non-CEO, non-CFO chief executives; = number of female chief executives, provided in Execucomp - the number of female CEOs or CFOs	Execucomp; Hand Collection
<u>Control Variables</u>		
ROA	Return on asset; = earnings before extraordinary items (IB) scaled by beginning total assets (AT);	COMP
EQ	Accrual earnings quality; = discretionary accruals from the modified Jones model $\times(-1)$ in year t;	COMP
lnMV	Size; = natural log of total market value (PRC \times CSHO) in year t;	COMP
MTB	Market to book ratio; = Total market value of equity (PRC \times CSHO) scaled by equity book value (AT – LT - PSTK) in year t;	COMP
Leverage	Leverage = long-term debt (LT) scaled by the beginning total assets (AT) in year t;	COMP
lnSegment	Number of segments; = natural log of the number of business segments in year t;	COMP
Restructure	Indicator variable of restructuring; = 1 if the restructuring cost (RCA) > 0 in year t, and 0 otherwise;	COMP
MA	Indicator variable of merge and acquisition; = 1 if the sales/turnover footnote (SALE_FN) is "AA", "AB", "AR", "AS", "FA", "FB", "FC", "FD", "FE", or "FF" in year t, and 0 otherwise	COMP
RetVolatility	Return volatility; = standard deviation of the monthly returns in the past twelve months;	CRSP
lnAnalystFollow	Number of analysts following the firm; = natural log of the number of analysts following in the most recent consensus EPS forecasts;	I/B/E/S

Table 1. Descriptive Statistics

	No. Obs	Mean	Std	Min	25Pct	Median	75Pct	Max
CSR	1,169	0.649	0.477	0	0	1	1	1
Standalone AR	1,169	0.464	0.499	0	0	0	1	1
FemaleCEO	1,169	0.060	0.237	0	0	0	0	1
FemaleCFO	1,169	0.074	0.261	0	0	0	0	1
FemaleExecOther	1,145	0.421	0.639	0	0	0	1	3
ROA	1,169	0.056	0.054	-0.104	0.020	0.054	0.085	0.210
EQ	1,169	-0.309	0.139	-0.707	-0.400	-0.269	-0.200	-0.086
lnMV	1,169	10.836	1.207	6.898	10.108	10.873	11.777	13.221
MTB	1,169	3.458	4.913	-6.157	1.373	2.302	3.791	34.382
Leverage	1,169	0.737	0.221	0.259	0.571	0.705	0.887	1.435
lnSegment	1,169	0.758	1.088	0.000	0.000	0.000	1.792	3.178
Restructure	1,169	0.432	0.496	0	0	0	1	1
MA	1,169	0.218	0.413	0	0	0	0	1
RetVolatility	1,169	0.014	0.008	0.006	0.010	0.012	0.016	0.057
lnAnalystFollow	1,169	1.548	1.507	0.000	0.000	2.079	2.996	3.784

Table 2. CSR Reporting

	CEO	CFO	OtherExec	Combine	CEO	CFO	OtherExec	Combine
Intercept	1.399 (0.372)	1.288 (0.411)	1.438 (0.379)	1.320 (0.422)	-9.459*** (0.004)	-9.506*** (0.003)	-10.117*** (0.003)	-10.602*** (0.001)
FemaleCEO	-0.621 (0.393)			-0.671 (0.378)	-0.862 (0.174)			-0.906 (0.165)
FemaleCFO		1.181*** (0.008)		1.061** (0.024)		1.172*** (0.009)		1.133** (0.015)
FemaleExecOther			0.322 (0.159)	0.321 (0.156)			0.452* (0.060)	0.445* (0.059)
ROA					-5.947 (0.154)	-5.319 (0.214)	-6.523 (0.139)	-5.480 (0.221)
EQ					-4.212*** (0.006)	-3.928*** (0.009)	-4.610*** (0.005)	-4.475*** (0.007)
lnMV					0.715*** (0.006)	0.707*** (0.004)	0.760*** (0.005)	0.782*** (0.003)
MTB					-0.028 (0.393)	-0.033 (0.333)	-0.036 (0.296)	-0.035 (0.276)
Leverage					0.290 (0.699)	0.436 (0.568)	0.387 (0.626)	0.377 (0.624)
lnSegment					0.307 (0.274)	0.284 (0.310)	0.243 (0.400)	0.278 (0.343)
Restructure					1.022*** (0.001)	0.999*** (0.001)	0.945*** (0.002)	0.976*** (0.002)
MA					-0.150 (0.596)	-0.152 (0.603)	-0.166 (0.585)	-0.132 (0.653)
RetVolatility					-5.153 (0.797)	-4.356 (0.833)	-4.476 (0.828)	-1.880 (0.929)
lnAnalystFollow					0.056 (0.709)	0.051 (0.734)	0.022 (0.888)	0.019 (0.900)
Industry Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
Year Fixed Effect	YES	YES	YES	YES	YES	YES	YES	YES
N	1,115	1,115	1,091	1,091	1,115	1,115	1,091	1,091
Pseudo R2	0.354	0.358	0.364	0.370	0.415	0.416	0.422	0.429

Note: *** p<0.01, ** p<0.05, * p<0.1

Table 3. Female CFO's Impact on the Tradeoff between CSR Report and Standalone Annual Report

	Step 1. DV = CSR	Step 2. DV = Standalone AR	Step 3. DV = CSR (Sample: CSR = 1 or Standalone AR = 1)
Intercept	-9.506*** (0.003)	-17.299*** (0.000)	-7.498* (0.051)
FemaleCFO	1.172*** (0.009)	-2.311*** (0.002)	2.468*** (0.001)
ROA	-5.319 (0.214)	-3.212 (0.440)	-4.071 (0.477)
EQ	-3.928*** (0.009)	-3.652* (0.067)	-3.431 (0.119)
InMV	0.707*** (0.004)	1.285*** (0.000)	0.587** (0.033)
MTB	-0.033 (0.333)	-0.065 (0.146)	-0.036 (0.340)
Leverage	0.436 (0.568)	-0.883 (0.319)	1.808 (0.142)
InSegment	0.284 (0.310)	-0.036 (0.878)	0.148 (0.627)
Restructure	0.999*** (0.001)	0.404 (0.232)	0.628* (0.063)
MA	-0.152 (0.603)	0.577** (0.028)	-0.196 (0.549)
RetVolatility	-4.356 (0.833)	-39.190 (0.154)	19.561 (0.426)
InAnalystFollow	0.051 (0.734)	-0.246 (0.213)	0.145 (0.435)
Industry Fixed Effect	YES	YES	YES
Year Fixed Effect	YES	YES	YES
N	1,115	1,000	862
Pseudo R2	0.416	0.284	0.409

Note: *** p<0.01, ** p<0.05, * p<0.1