

The disclosure of financial forward-looking information: does the financial expertise of female directors make a difference?

Abstract

Purpose: The main objective of this paper is to examine the association between the financial expertise (accounting and non-accounting) of female directors in the audit committee and the voluntary disclosure of financial forward-looking information.

Design: Our sample is composed of the companies belonging to the Standard & Poor's 100 Index in 2016. Content analysis techniques are used to analyze both information disclosed in annual reports and the financial expertise of female directors.

Findings: Our results fail to find an association between the presence of women on the audit committee and the disclosure of financial forward-looking information. However, the disclosure of this information is associated with the presence of female audit committee members with financial expertise, especially accounting expertise.

Research implications: The academic implications are related with the need for a consideration of the personal attributes of female directors to understand their role in the boardroom or on subcommittees.

Practical implications: Given the importance of financial forward-looking information in the capital markets, these findings will also help policy makers and managers to implement effective corporate governance structures and will have significant implications for the selection of female audit committee members.

Originality: This paper is the first to examine whether the specific expertise of female directors, beyond mere gender, makes a difference in financial forward-looking disclosure strategies.

Key Words: Gender Diversity, Financial expertise, Audit Committee, Forward-looking Information, Content Analysis.

Article Classification: Research paper

1. Introduction

A growing number of studies have examined whether gender diversity may impact on strategic decisions and have an economic contribution (Adams and Ferreira 2009; Kılıç and Kuzey, 2016; Kirsch, 2018). Specifically, some researchers posit that female directors influence the voluntary disclosure practices of firms (Tejedo-Romero et al., 2017). Given the importance of voluntary information in capital markets (Healy and Palepu, 2001) and the ongoing debate on gender diversity, this relationship is relevant for academics, firms and regulators. Nonetheless, the association between gender diversity and the disclosure process still remains an open question in the literature for several reasons. First, disclosure practices include a variety of information which has different characteristics, and not all types of information may be relevant for investors and have an effect on capital markets (Bravo et al., 2012; Dutta and Nezlobin, 2017). Second, the literature generally fails to examine the specific characteristics of female directors (i.e., background, maturity, expertise), which can clearly affect their contributions to the boardroom (Zelechowski and Bilimoria, 2004; Gull et al., 2017).

The main objective of this paper is to examine the association between the financial expertise (accounting and non-accounting) of female directors in the audit committee (AC, hereafter) and the voluntary disclosure of financial forward-looking information. This implies a step further in the existing literature because we focus on one specific type of valuable information and we also posit that the role of female directors in the disclosure process is likely to depend on their personal attributes. Therefore, this study extends the literature by answering the following question: is it the gender diversity or the specific financial expertise of female directors which matters in the disclosure process of financial information? In particular, we examine AC female members because the AC has become a key mechanism in establishing corporate reporting policy, which must take responsibility for voluntary

disclosure practices and contribute to providing higher quality financial information (Samaha et al., 2015; Salehi and Shirazi, 2016). The selection of voluntary financial forward-looking information provides an interesting scenario to better understand the role of female directors because this information has been traditionally considered as highly important for both companies and capital market agents (Hirst et al., 2008; Hussainey and Aal-Eisa, 2009). The main novelty of this research is the consideration of specific financial expertise (accounting and non-accounting) of female directors as a crucial characteristic to explain their potential influence on financial disclosure practices.

Our sample is composed of the companies belonging to the Standard & Poor's 100 Index in 2016. Content analysis techniques are used to manually analyze forward-looking information disclosed by firms in the voluntary annual reports. In addition, a unique set of data is used since the information about the financial expertise of female AC members is also hand-collected by examining 374 directors' biographies. Our results fail to find an association between the presence of women on the AC and the disclosure of financial forward-looking information. Notwithstanding, our findings highlight that the disclosure of this information is associated with the presence of female AC members with financial expertise, both accounting and non-accounting. We thus contribute to the debate concerning whether the presence of women on boards' committees is merely an ethical issue or whether it simply reflects compliance with governance recommendations. This evidence also contributes to the corporate governance literature by clarifying the role of women's characteristics, such as financial expertise, in the disclosure process. Therefore, our results complement the previous literature by suggesting that the impact of female directors without considering their personal attributes may lead to inconclusive results, since the financial expertise of women on the AC appears to be determinant for disclosure strategies.

The paper is organized as follows. First, the literature review and the hypothesis development are provided in the next Section. Section 3 describes the data collection process and the sample, and explains the research method. Section 4 discusses the results of the empirical analysis and Section 5 summarizes the contributions of the paper.

2. Theoretical framework and hypothesis development

Although many studies focus on gender diversity in the boardroom, ACs appear to be crucial in the oversight and preparation of the voluntary information disclosed by firms (Li et al., 2012; Samaha et al., 2015). Only a few studies have examined the relationship between female AC members and the reporting process, but they usually focus on mandatory reporting practices (Srinidhi et al., 2011; García-Sánchez et al., 2017). All the same, the previous literature has extensively documented that voluntary disclosures are useful for investors and extremely beneficial in the capital markets (Healy and Palepu, 2001; Chung et al., 2017). In this sense, voluntary forward-looking disclosures appear to be important for all stakeholders, comprising future projections on both financial and non-financial items (Kılıç and Kuzey, 2018), and for companies since these disclosures may help to create value for firms (Garanina and Dumay, 2017). Despite the relevance of this issue, the existing research on gender diversity and voluntary disclosures is scant and, especially, the literature fails to provide conclusive empirical evidence on the association between gender diversity on the AC and forward-looking disclosure practices. Specifically, the disclosure of financial forward-looking information may be beneficial for companies and also extremely valuable for investors and regulators (Hirst et al., 2008). This kind of information may be potentially informative for investors, thereby improving the anticipation of future earnings, share prices and a firm's future performance (Hussainey and Aal-Eisa, 2009; Hassanein et al., 2018). Moreover, this information is also likely to have a positive impact on firm outcomes by enhancing the

accuracy in analysts' forecasts, increasing analyst following and reducing information risk (Graham et al., 2005).

Due to the multidisciplinary nature of the topic, no single theory can provide a complete framework to explain the relation between gender diversity and disclosure decisions (Pugliese et al., 2009). Recent research has extensively used agency theory and resource dependence theory to explain the potential influence of gender diversity on disclosure practices (Ammer and Ahmad-Zaluki, 2017; García-Sánchez et al., 2017). From an agency perspective, female directors may improve the monitoring activity of ACs because women tend to be more independent (Adams and Ferreira, 2009), carry out their duties with greater involvement (Huse and Solberg, 2006), and display better reporting discipline (Srinidhi et al., 2011). On the other hand, consistent with the resource dependence theory, female AC members may bring strategic resources to the ACs on which they serve (Campbell and Mínguez-Vera, 2008), which may lead to generating new ideas and increasing ethical sensitivity and, as a result, improving voluntary disclosure practices (Tejedo-Romero et al., 2017).

However, the application of these theories might not be generalizable to all cases, since the monitoring and advising functions of female AC members can be ineffective for specific disclosure practices if they lack certain personal attributes beyond their gender. For instance, in order to improve the disclosure of financial information, AC members need to be able to understand and correctly interpret this kind of information (Karamanou and Vafeas, 2005). Consistent with the previous literature (Aguilera and Cuervo-Cazurra, 2009), we posit that for the adequate fulfillment of their tasks, female directors are expected to have concrete expertise and, specifically, financial expertise is likely to be a crucial attribute for female AC members in order to effectively perform their monitoring and advising functions in relation to financial forward-looking disclosure practices.

In the US context, AC financial expertise has long been a topic of interest for regulators and academics (SEC, 2003; Abernathy et al., 2014). The previous literature has generally documented a positive relationship between the reporting of financial information and the presence of AC members with financial expertise (Dhaliwal et al., 2010; Abernathy et al., 2014). Under an agency approach, the domain-specific knowledge of AC financial experts provides them with an effective means of monitoring financial reporting practices and reducing associated agency costs (Krishnan and Visvanathan 2008). In particular, financial forward-looking disclosure practices require a high degree of financial sophistication, and female AC members with financial expertise may be expected to better oversee the reporting of this information (DeFond et al., 2005). In addition, from a resource dependence theory, female financial experts are better prepared for advising the ACs on developing strategies regarding the disclosure of financial information (Beasley et al., 2009). Furthermore, female AC members with financial expertise have the necessary skills to evaluate and discuss estimates and assumptions involved in the disclosure of financial forward-looking information and hence to promote these disclosure practices (Badolato et al, 2014).

Since previous research has claimed that the SEC includes a definition of financial expertise that has been controversial among academia, including both accounting expertise and non-accounting expertise, we differentiate between both types of financial expertise. In line with the previous arguments, we posit that financial expertise provides women with the necessary skills to oversee and influence the preparation of financial forward-looking information. As the disclosure of this kind of information includes both accounting and non-accounting issues, the following hypotheses are formulated:

H1: The presence of female directors with financial expertise on the AC is positively associated with the voluntary disclosure of financial forward-looking information.

H1a: The presence of female directors with accounting financial expertise on the AC is positively associated with the voluntary disclosure of financial forward-looking information.

H1b: The presence of female directors with non-accounting financial expertise on the AC is positively associated with the voluntary disclosure of financial forward-looking information.

3. Data and methodology

3.1. Sample and data

The sample was made up of the companies included in the Standard & Poor's 100 Index in 2016. The selection of the largest companies is adopted in the majority of research since these firms are highly representative and are more likely to make voluntary disclosures (Brammer and Pavelin, 2004). Consistent with previous studies (Hussainey and Aal-Eisa,2009), the documents analyzed were the voluntary annual reports downloaded from the companies' websites. The voluntary annual report (also called annual review) mainly includes narrative sections such as: Financial Highlights, Summary Results, Chair's Statement, Chief Executive Officer's Review, Operating and Financial Review, Financial Review, Financial Director's Report, Finance Review, Business Review, and Operating Review. The entire voluntary annual reports of every company included in the sample were read and analyzed.

Content analysis techniques were undertaken to measure voluntary financial forward-looking disclosures. A frequent limitation of studies that use content analysis of companies' reports by employing hand-collected data is the sample size, since the process is a very time-consuming task. Nonetheless, manual analysis leads to an increase in the quality of the results because it enables disclosures to be fully understood through the consideration of the whole

context (Milne and Adler, 1999), and minimizes the problems that machine-based procedures introduce regarding the identification and interpretation of information (Beattie and Thompson, 2007).

Information about female directors was also manually collected by examining the biography of every director. These biographies were obtained from the firms' proxy statements and, where necessary, by examining other public sources such as *Bloomberg Business Week* and the official websites of other companies where these directors served. Specifically, we researched the biographies of 374 AC members. The financial variables were downloaded from the Datastream database. The final sample was made up of 85 firms, which is similar to many other studies that employ hand-collected techniques (Jindal and Kumar, 2012; Lazzaretti et al., 2013; Kılıç and Kuzey, 2018).

3.2. Variables description

3.2.1. Dependent variable: Financial Forward-looking information

Forward-looking disclosure refers to current plans and future forecasts that enable investors and other users to assess a company's future financial performance (Aljifri and Hussainey, 2007). Forward-looking disclosure involves both financial and non-financial information. This paper focuses on the disclosure of financial forward-looking information (which is likely to require financial expertise), such as earnings forecasts, expected revenues, anticipated cash flows, or any other financial indicator. In line with the suggestions from professional organisms (SEC, 2003) and the previous literature (Bozzolan et al., 2009; Kılıç and Kuzey, 2018), a list of the specific information items is designed for the identification of financial forward-looking disclosures. These items are reported in Table 1. Several sentences as examples of the coding procedure are provided in the Appendix.

Insert Table 1 about here

In this study, two measures are used to quantify financial forward-looking information: the level of financial forward-looking disclosures (FFLD_level) and its coverage (FFLD_cov). First, the FFLD_level is calculated through the number of sentences with financial forward-looking information (Muslu et al., 2014; Hassanein and Hussainey, 2015). The sentence is commonly considered as the unit of analysis in disclosure studies because sentences are more reliable coding units than words since words cannot be interpreted and coded without the context of a sentence (Milne and Aler, 1999). Second, the FFLD_cov was obtained by dividing the number of items disclosed by a company by the total number of items that a company may disclose (9 items). The previous research has extensively employed coverage indices as a proxy for the quality of the information disclosed by firms (Al-Najjar and Abed, 2014; Kılıç and Kuzey, 2018).

The inherent subjectivity of disclosure indices using content analysis is a common handicap of this type of measures, and therefore it is required that the coding procedure be reliable to draw valid conclusions (Milne and Adler, 1999). Therefore, the main criteria for the coding process were initially discussed by the two researchers to minimize ambiguity (Kilian and Hennings, 2014). Moreover, this study employs both stability and reproducibility tests to check the reliability of financial forward-looking disclosures. The stability test was performed by one researcher through two rounds, carried out on different dates, of the coding of annual reports. In order to conduct the reproducibility test, three annual reports were again analyzed by these independent researchers by using Scott's pi coefficient (Krippendorff, 1980) and the results were satisfactory.

3.2.2. Explanatory variables

In line with the SEC's definition of financial expertise (disclosure required by Sections 406 & 407 of the Sarbanes-Oxley Act of 2002), we considered a female AC member to have

accounting expertise if she has a professional certification in accounting, including CPAs, CFOs, CAOs, controllers and auditors. The CEO position was excluded since it does not provide accounting expertise (Bédard et al., 2004). Based on the methodology proposed by Krishnan and Lee (2009) and Dhaliwal et al., (2010), among others, the variable accounting expertise of female AC members (*Gender_AFE*) is defined as a dummy variable that takes the value of 1 if there is at least one female accounting expert on the AC and 0 otherwise. Second, the remaining female AC financial experts were classified as “non-accounting financial experts”. The variable non-accounting expertise of female AC members (*Gender_NAFE*) is also defined as a dummy variable that takes the value of 1 if there is at least one female non-accounting financial expert on the AC and 0 otherwise. Finally, the variable financial expertise of female AC members (*Gender_FE*) encompasses both accounting and non-accounting expertise, and is defined as a dummy variable that takes the value of 1 if there is at least one female AC member with any kind financial expertise and 0 otherwise.

3.2.3. Control variables

Consistent with previous meta-analyses of voluntary disclosure studies and the previous research on forward-looking information disclosure (Alkhatib, 2014; Al-Najjar and Abed, 2014; Khlif and Hussainey, 2016), several control variables are considered to be related to the disclosure of this information: firm size, leverage, profitability, AC size, gender diversity in the AC, and industry. We used the log of total assets as an indicator of firm size (*SIZE*). The ratio of total debt to total assets was employed to measure the companies' leverage (*LEV*). Moreover, return on assets (*ROA*) was used to measure profitability. In addition, the AC size and gender diversity in the AC were also introduced as control variables, since the likelihood of a firm having a female financial expert is higher for larger ACs and for ACs

with a higher presence of women. We defined the AC size (ACSIZE) as the number of AC members and gender diversity on the AC as the percentage of female directors in the AC. Finally, industry dummies were created by using SIC codes.

3.3. Research model

To investigate the associations proposed in the research hypotheses, we performed a multivariate ordinary least squares (OLS) regression. The following five models are represented as follows:

Model 1: $FFLD = f(\text{control variables})$

Model 2: $FFLD = f(\text{Gender_FE}, \text{control variables})$

Model 3: $FFLD = f(\text{Gender_AFE}, \text{control variables})$

Model 4: $FFLD = f(\text{Gender_NAFE}, \text{control variables})$

Model 5: $FFLD = f(\text{Gender_NAFE}, \text{Gender_AFE}, \text{control variables})$

FFLD refers to financial forward-looking disclosures. In order to guarantee that our results are robust in the use of different measures for forward-looking disclosures, all the models were run for our two disclosure measures: the FFLD_level and the FFLD_cov. Model 1 includes the control variables. Models 2, 3 and 4 also include individually the financial expertise of the women on the AC. Model 2 tests the association proposed in hypothesis H1. Models 3 and 4 split the financial expertise of female AC members into accounting (Gender_AFE) and non-accounting (Gender_NAFE) and tests the relationships proposed in hypotheses H1a and H1b. In order to prevent omitted variable bias, Model 5 includes both Gender_AFE and Gender_NAFE in the same specification, which would allow for formal testing as to whether their effects are statistically different from each other. The definition of

the dependent variables, the explanatory variables, and the control variables is reported in Table 2.

Insert Table 2 about here

4. Results and discussion

The descriptive statistics are reported in Table 3. As regards the measures for information disclosure, the results show a significant variability in the quantity (FFLD_level) and the coverage (FFLD_cov) of the financial forward-looking information disclosed by firms. Women are clearly underrepresented, since female directors only average 26.3% of total AC membership. The results also highlight that 51% of the ACs analyzed have a female director with a financial expertise. Yet, most of them are non-accounting financial experts. Descriptive statistics point out that only 15% of the ACs have a female accounting expert and 44% of the ACs have female non-accounting experts. The percentage of firms with female AC financial experts (Gender_FE) is higher than the sum of Gender_AFE and Gender_NAFE because a few firms have an AC composed of women with both accounting and non-accounting expertise.

Insert Table 3 about here

Table 4 shows the Pearson coefficients for the main variables included in the model. The disclosure of financial forward-looking information (FFLD_level and FFLD_cov) is not associated with the proportion of female directors on the AC. Nonetheless, the presence of women on the AC with financial expertise (either accounting expertise or non-accounting) seems to be related to the disclosure of financial forward-looking information. In addition, the variables for female AC members with accounting expertise and female AC members with non-accounting financial expertise are not correlated. Obviously, the variable Gender_FE is positively correlated with both Gender_AFE and Gender_NAFE. These results highlight the role of the female AC members considered financial experts in the disclosure

process. Of the control variables, the disclosure of financial forward-looking information appears to be positively related with the firm's size and negatively related with the firm's profitability. This table also confirms the lack of collinearity problems since, multicollinearity is generally considered to be a problem if a correlation is 0.7 or more in the correlation matrix formed by the independent variables (Cooper and Schindler, 2003).

Insert Table 4 about here

Tables 5 and 6 contain the results obtained in the multivariate analysis for the five models previously explained. The level of financial forward-looking information (FFLD_level) and the coverage of this kind of information (FFLD_cov) are considered as dependent variables in Tables 5 and 6 respectively. First, we highlight that all the Models fail to find an association between the FFLD_level and the FFLD_cov and the proportion of women on the AC. A number of studies have supported a positive relationship between the quality of financial reporting and gender diversity on boards or ACs (Srinidhi et al., 2011; García-Sánchez et al., 2017), but our findings suggest that intrinsic characteristics linked to women appear to be insufficient for ACs that include women to enhance voluntary disclosures on financial forward-looking information. Consistent with the previous literature (Aguilera and Cuervo-Cazurra, 2009), specific expertise could be determinant for female AC members for their involvement in particular corporate strategies. Although female directors may improve the AC's monitoring and advising functions (Ammer and Ahmad-Zaluki, 2017; García-Sánchez et al., 2017), according to our results, gender per se seems to be not enough to have an effect on particular reporting policies.

Particularly, we extend the previous literature by highlighting that the impact of gender diversity on the AC without considering the personal attributes of female directors, such as their expertise, can lead to inconclusive results in relation to the role of women directors in

the disclosure process. Specifically, gender diversity on the AC does not make a difference in the disclosure of financial forward-looking information. Financial forward-looking information has become relevant in capital markets, but the preparation and interpretation of this information is complex and requires specific skills and expertise for the AC.

On the other hand, consistent with recent research (Gull et al., 2017), specific attributes of women directors appear to be relevant to understand their influence on their disclosure process. In particular, the previous literature has highlighted that financial expertise is likely to be crucial for AC members in the fulfillment of their tasks (Abernathy et al., 2014; Salehi et al., 2016). Our results underline that financial expertise is a key attribute for female AC members in the explanation of how women may influence the disclosure of financial forward-looking information. First, the specific knowledge of financial experts can improve their monitoring abilities of financial reporting practices (Krishnan and Visvanathan 2008) and their capacity to oversee specific disclosures strategies regarding financial information (DeFond et al., 2005). On the other hand, given that financial experts have relevant skills to evaluate and discuss the information about financial projections (Badolato et al, 2014), female financial experts are also likely to adapt a proactive role in the improvement of financial forward-looking disclosures.

Our evidence contributes to the literature on gender diversity and specifically to the ongoing debate regarding the participation of female directors in corporate disclosure strategies. In this sense, recent research (Pucheta-Martínez et al., 2016; Abad et al., 2017; Ammer and Ahmad-Zaluki, 2017; García-Sánchez et al., 2017; Tejedo-Romero et al., 2017) has highlighted that gender diversity can have an effect on information asymmetries, earnings forecasts, earnings quality, or voluntary disclosures. Particularly, our results show a positive association between the disclosure of financial forward-looking information (both the FFLD_level and the FFLD_cov) and the presence of women with financial expertise on the

AC, irrespective of the kind of financial expertise. Financial expertise appears to be positively associated with the FFLD_level (at the level of 5%) and the FFLD_cov (at the level of 1%). Therefore, female AC members with financial expertise play an important role in influencing disclosure strategies that provide forward-looking information containing projections and financial data useful for investors. Hence, Hypothesis H1 is supported.

In addition, this paper also presents academic contributions by extending prior research since we analyze both the accounting financial expertise and the non-accounting financial expertise of female AC members. Both Gender_AFE and Gender_NAFE appear to be associated with the measures for financial forward-looking information, so the hypotheses H1a and H1b can be accepted. In particular, the association between female AC financial experts and the disclosure of financial forward-looking information is slightly stronger for female AC members with accounting expertise. The relationship between Gender_AFE and both the FFLD_level and the FFLD_cov is significant at the 1% level in all the models. Therefore, women accounting experts on the AC seem to be in a better position to improve financial forward-looking information. Our results are consistent with the previous empirical evidence which posits that accounting expertise may be particularly important for AC members because disclosure practices which they are responsible for, including financial forward-looking information, require a relatively high degree of accounting sophistication (Dhaliwal et al., 2010). In this sense, the prior literature has suggested that accounting expertise may be crucial for the AC to report more accurate financial projections (Karamanou and Vafeas, 2005), to evaluate the evolution of financial statements and the impact of economic decisions (Tanyi and Smith, 2014), and to improve the capacity of this committee to discuss and assess financial estimations (Abernathy et al., 2014). Our results complement the prior literature by contributing to the debate about the role of accounting experts. In particular, accounting expertise is crucial for female AC members in the improvement of financial forward-looking

disclosures, which are likely to contain estimates on accounting variables and projections about financial statements. Therefore, we extend previous research by highlighting that female AC members with specific accounting expertise may considerably enhance AC members' capacity to understand the technical financial issues facing their companies and evaluate significant accounting and financial issues to improve the disclosure of financial forward-looking information. Previous studies have also indicated that the presence of accounting financial experts on the AC is significantly associated with more accurate analysts' earnings forecasts (Abernathy et al., 2014). We also complement the previous literature since one possible explanation for the association between the financial expertise of directors and analysts' forecast accuracy may be the disclosure of financial projections.

In general terms, our findings present a relevant contribution to the literature for two main reasons: the increasing debate regarding female directors in corporate disclosure strategies, and the importance of voluntary disclosure, specifically, financial forward-looking information in the capital markets.

Insert Table 5 about here

Insert Table 6 about here

Finally, a robustness check was conducted using alternative measures for the financial expertise of female AC members by taking into consideration the proportion of accounting female AC experts and non-accounting female AC members (Abernathy et al., 2014). Given that firms with female financial experts on the AC (both accounting and non-accounting) generally had only one woman with financial expertise, the results are very similar and confirm the association between the financial expertise of female AC members and the disclosure of financial forward-looking information (the results are not shown in the tables).

5. Conclusions

This paper provides new empirical evidence concerning the effect of gender diversity on the AC on the quality of voluntary disclosures. We extend the previous research and provide deep insights into the relation between board gender diversity and voluntary disclosures by examining how the financial expertise of female AC members can affect the disclosure of financial forward-looking information. This issue remains relevant for academics, firms and regulators for several reasons. First, in recent years the impact of female directors on strategic decisions and economic outcomes has been largely discussed by researchers, professional organisms and regulatory bodies (Kılıç and Kuzey, 2016; Kirsch, 2018). Second, the influence of personal attributes to understand the role of female directors on boards or committees remains an open question (Gull et al., 2017). There is notably an ongoing debate about the benefits of having financial experts on the AC (Abernathy et al., 2014), but empirical evidence on the financial expertise of female directors is scarce. Third, voluntary disclosures have traditionally been seen as crucial to improve decision-making processes (Chung et al., 2017) and financial forward-looking information is likely to be valuable for firms, investors and capital markets in general (Hassanein et al., 2018).

Our results fail to find an association between gender diversity on the AC and the disclosure of financial forward-looking information. Yet, the disclosure of this information appears to be related with the financial expertise of female AC members, especially with their accounting expertise. These findings have direct implications for researchers, firms and policy makers. The academic implications are related with the need for a consideration of the personal attributes of directors in order to study their role in the boardroom or on board committees. The main practical implications concern shareholders, stakeholders, and regulators. Low female representation and social pressure may lead to gender bias, as public organisms

legislate or recommend on the presence of women in boards. Nonetheless, requiring only a specific proportion of women may be counter-productive to obtain qualified board members. Therefore, this paper presents major contributions for the design of effective governance structures, especially in terms of gender diversity, which has become of societal importance. Important implications of our evidence are that specific strategic decisions, such as financial forward-looking disclosure practices, require particular competencies and expertise, and the appointment of women to corporate boards and subcommittees should be based more on their expertise than on the compliance of corporate governance recommendations or quotas. Given the importance of financial forward-looking information in the capital markets, these findings will help policy makers and managers to implement effective corporate governance structures, and will have direct implications for the selection of AC members. In addition to the contribution to the debate on the role of female directors, this paper also strengthens the academic and professional discussion on the benefits obtained from having a financial expert serving on the AC. It could also help the SEC and other organisms to narrow the definition of financial expertise to specifically consider accounting expertise. Finally, this study also adds to prior research on the determinants of forward-looking disclosures, which is expected to have both academic and practical implications.

Like most studies, this research is subject to certain limitations. For instance, we focus only on US listed companies for one year, and disclosure practices may be influenced by the type of firms, the industry, the institutional context and the year of analysis. Therefore, we must exercise caution when seeking to extrapolate our results. Furthermore, another common limitation in studies using content analysis techniques is related to disclosure indices, which are affected by inherent subjectivity. However, several reliability tests were carried out in order to minimize the subjectivity of our disclosure measure and additional robustness tests were performed in order to ensure that our results were not driven by our experimental

design. Given the novelty of our study, we think that our findings create encouraging opportunities for future research. This research may be extended by analyzing different institutional contexts, different kind of information, or examining the influence of other female directors' characteristics in the disclosure process. Additionally, future studies could also explore how the characteristics of the audit committee, the board of directors, or the CEO moderate the role of female AC members in the implementation of corporate disclosure strategies, since the decisions made by women in the AC are likely to depend on the context in which they work.

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TABLE 1
Financial forward-looking Disclosure Index

Items
1. Financial impact of production activities
2. Future investments
3. Financial risk exposure
4. Dividends distribution
5. Profitability ratios
6. Cash-flows and earnings
7. Financial structure
8. Costs evolution / distribution
9. Shares and market capitalization

TABLE 2
Definition of variables

Variables	Measure
FFLD_level	Number of sentences with financial forward-looking information
FFLD_cov	Number of items disclosed by a company divided by the total number of items that a company may disclose
Gender_FE	Dummy variable: 1 if there is at least one female financial expert on the AC and 0 otherwise
Gender_AFE	Dummy variable: 1 if there is at least one female accounting financial expert on the AC and 0 otherwise
Gender_NAFE	Dummy variable: 1 if there is at least one female non-accounting financial expert on the AC and 0 otherwise
SIZE	Total assets (logarithm)
LEV	Ratio total debt to total assets
ROA	Return on assets
ACSIZE	Number of audit committee members
AC_Gender	Percentage of female directors on the AC.

TABLE 3
Descriptive Statistics

	Mean	Standard deviation	Minimum	Maximum
FFLD_level	4.02	5.25	0	24
FFLD_cov	0.24	0.24	0	0.89
Gender_FE	0.52	0.50	0	1
Gender_AFE	0.15	0.36	0	1
Gender_NAFE	0.45	0.50	0	1
SIZE	8.38	0.92	7.07	11.47
LEV	0.74	0.16	0.16	0.99
ROA	0.07	0.07	-0.06	0.33
ACSIZE	4.40	1.07	3	8
AC_Gender	0.26	0.20	0	0.75

TABLE 4
Pearson Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) FFLD_level	1								
(2) FFLD_cov	0.897***	1							
(3) Gender_FE	0.221**	0.297***	1						
(4) Gender_AFE	0.343***	0.379***	0.410***	1					
(5) Gender_NAFE	0.186*	0.256**	0.868***	0.078	1				
(6) SIZE	0.368***	0.323***	0.042	0.075	0.097	1			
(7) LEV	0.127	0.065	0.158	0.024	0.192*	0.318***	1		
(8) ROA	-0.342***	-0.327***	-0.084	-0.062	-0.106	-0.429***	-0.388***	1	
(9) ACSIZE	0.015	-0.007	0.141	0.024	0.173	-0.139	-0.166	0.169	1
(10) AC_Gender	0.077	0.118	0.540***	0.278**	0.524***	0.046	0.309***	-0.244**	-0.012

See Table 2 for the definition of the explanatory variables. *p-value < 0.1; ** p-value < 0.05; *** p-value < 0.

TABLE 5
Multiple Regression Analysis (FFLD_level)

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Intercept</i>	-9.068 (-1.29)	-7.355 (-1.07)	-8.313 (-1.25)	-6.76 (-0.96)	-5.653 (-0.85)
<i>Gender_FE</i>		2.810** (2.21)			
<i>Gender_AFE</i>			4.485*** (3.05)		4.707*** (3.26)
<i>Gender_NAFE</i>				2.216* (1.70)	2.517** (2.04)
<i>SIZE</i>	1.614** (2.28)	1.478** (2.13)	1.457** (2.16)	1.451** (2.05)	1.264* (1.90)
<i>LEV</i>	-2.682 (-0.72)	-2.643 (-0.72)	-1.688 (-0.47)	-2.944 (-0.80)	-1.936 (-0.55)
<i>ROA</i>	-16.070* (-1.69)	-15.69* (-1.69)	-16.475* (-1.83)	-15.903* (-1.70)	-16.305* (-1.85)
<i>ACSIZE</i>	0.375 (0.73)	0.137 (0.27)	0.352 (0.72)	0.1421 (0.27)	0.085 (0.17)
<i>AC_Gender</i>	1.226 (0.42)	-2.573 (-0.77)	-1.573 (-0.54)	-1.486 (-0.45)	-4.793 (-1.46)
<i>Industry effect</i>	Yes	Yes	Yes	Yes	Yes
Adjusted R²	0.144	0.187	0.231	0.166	0.263
F (p-value)	2.42**	2.76***	3.29***	2.52***	3.49***

See Table 2 for the definition of the explanatory variables. The industry effect is controlled with industry dummies. Coefficients of industry dummies are not included for parsimony.

P-values are shown in parentheses. * p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01

TABLE 6
Multiple Regression Analysis (FFLD_cov)

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Intercept</i>	-0.223 (-0.67)	-0.115 (-0.36)	-0.185 (-0.59)	-0.067 (-0.21)	-0.010 (-0.03)
<i>Gender_FE</i>		0.178*** (3.04)			
<i>Gender_AFE</i>			0.228*** (3.29)		0.242*** (3.67)
<i>Gender_NAFE</i>				0.149** (2.47)	0.165*** (2.94)
<i>SIZE</i>	0.071** (2.10)	0.062* (1.94)	0.063* (1.98)	0.059* (1.82)	0.050 (1.64)
<i>LEV</i>	-0.224 (-1.26)	-0.221 (-1.31)	-0.173 (1.03)	-0.241 (1.40)	-0.189 (-1.19)
<i>ROA</i>	-0.780* (-1.73)	-0.756* (-1.77)	-0.801* (1.89)	-0.769* (-1.77)	-0.789** (-1.96)
<i>ACSIZE</i>	0.009 (0.38)	-0.006 (-0.25)	0.008 (0.35)	-0.006 (-0.27)	-0.009 (-0.42)
<i>AC_Gender</i>	0.141 (1.01)	-0.100 (-0.65)	-0.001 (-0.01)	-0.042 (0.28)	-0.213 (-1.42)
<i>Industry effect</i>	Yes	Yes	Yes	Yes	Yes
Adjusted R²	0.103	0.193	0.208	0.160	0.283
F (p-value)	1.97**	2.83***	3.01***	2.46**	3.77***

See Table 2 for the definition of the explanatory variables. The industry effect is controlled with industry dummies. Coefficients of industry dummies are not included for parsimony.

P-values are shown in parentheses. * p-value < 0.1; ** p-value < 0.05; *** p-value < 0.01

APPENDIX
Examples of the coding procedure.

Sentence	Item
<i>"Separately, in 2017, we expect our Digital software orders to be over \$5 billion, with growth of 20% to 30%, a valuable franchise." (General Electric Company)</i>	1. Financial impact of production activities
<i>"In 2016, we announced a companion investment in Beaumont, Texas, that will further increase metallocene polyethylene capacity." (Exxon Mobil Corporation)</i>	2. Future investments
<i>"The results of the UK referendum and the US elections will likely be felt over 2017 and beyond, and require continued care in managing the firm's exposures, not just in financial markets but in credit portfolios." (Barclays PLC)</i>	3. Financial risk exposure
<i>"Our Board remains confident in Aviva's ability to deliver on our commitment to increase the dividend payout ratio to 50% of operating earnings per share in 2017." (Aviva PLC)</i>	4. Dividends distribution
<i>"We believe that strong execution against all three drivers will place our updated financial targets firmly within reach, including: a 10 percent ROTCE excluding our disallowed Deferred Tax Assets in 2018; and a 10 percent ROTCE including our DTA in 2019. Longer term, we believe Citi is capable of generating a 14% ROTCE." (City Group Inc)</i>	5. Profitability ratios
<i>"While the resulting negative mark-to-market movements on these hedging instruments are recorded in 2016, the related increases in fee income that arise from the higher "asset values managed, will be recognised and reported in future years." (Prudential PLC)</i>	6. Cash-flows and earnings
<i>"The Group's funding structure remains conservative with limited refinancing requirements over the next few years." (Standard Chartered PLC)</i>	7. Financial structure
<i>"Additive manufacturing can reduce GE's product cost by \$3 billion to \$5 billion over the next decade and create new performance entitlement." (General Motors)</i>	8. Costs evolution / distribution
<i>"... plans for a new share buyback program of up to \$3 bn from 2017 through 2019." (ABB Limited)</i>	9. Shares and market capitalization