Impact of Women and Ethics committees on firm value and financial performance

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Resumo

We investigate whether gender diversity in the corporate board and in the board of directors and having an ethics committee impacts firms? value and financial performance. We use a unique sample of Brazilian firms that have passed through a recession period to address whether gender diversity in top executive roles can boost these figures. Our identification strategy covers three different methods (i) fixed effects approach, (ii) generalized structural model approach to deal with endogeneity (e.g. reverse causality), and (iii) propensity score matching approach (to isolate the effect of the woman in the corporate board as a director). The results show that women in the corporate board or in the board of directors, and the firm has an ethics committee boost firms? value. We also find significant evidence that women in the corporate board together with the existence of an ethics committee boost return on assets.

Palavras-chave: Gender Diversity; Corporate Board; Ethics Committee; Financial Performance; Value of the Company.

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ABSTRACT

We investigate whether gender diversity in the corporate board and in the board of directors and having an ethics committee impacts firms' value and financial performance. We use a unique sample of Brazilian firms that have passed through a recession period to address whether gender diversity in top executive roles can boost these figures. Our identification strategy covers three different methods (i) fixed effects approach, (ii) generalized structural model approach to deal with endogeneity (e.g. reverse causality), and (iii) propensity score matching approach (to isolate the effect of the woman in the corporate board as a director). The results show that women in the corporate board or in the board of directors, and the firm has an ethics committee boost firms' value. We also find significant evidence that women in the corporate board together with the existence of an ethics committee boost return on assets.

Keywords: Gender Diversity; Corporate Board; Ethics Committee; Financial Performance; Value of the Company.

1. Introduction

The global actions concerning the adoption of quotas for participation of women in corporate boards are considered a great support to gender diversity (Malhotra & Schulerm, 2005; Isidro & Sobral, 2015). The priority of these actions is to support women empowerment[1] and to enhance effective monitoring through the reduction of innefective fund allocation, and thereby improving return on investments. Gender diversity can bring economic benefits to companies, considering that it lowers the company's exposure to risks (Muller-Kahle & Lewellyn, 2011), increases the fulfillment of companies' ethical principles, consequently diminishing the management of results (Labelle *et al*., 2010), improving sustainable performance (Rost & Osterloh, 2010) and financial performance (Erhardt et al., 2003; Jo & Harjoto, 2011; Rodgers, Choy & Guiral, 2013).

This topic has gained momentum since nations such as Norway, Canada, Switzerland, Denmark, Germany and many others have decided to support gender diversity and encouraged the inclusion of quotas for the participation of women in corporate boards (Isidro & Sobral, 2015). This is also the case in the U.S. where recently, the major investment bank Goldman Sachs announced that will no longer do IPO's with all-male corporate boards.[2] The bank has announced that board diversity is related to higher profitabilitaty and higher market value, and as such, it was in line with their strategy of offering premium returns to its clients. The U.S. estate California also transformed Senate Bill n. 826 into a law, which ensures that at least one of the board members must be female until 2020, with that number increasing from 2021.

We shift our discussion to developing economies where recently in Brazil, these discussions between academics, politicians and press, triggered the creation of the bill n. 7179 of 2017[3], which determines a system of quotas for the participation of women in public companies, demonstrating the importance of women's participation in the corporate board.

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[1] UN WOMEN. (2016). *Empoderamiento político de las mujeres: marco para una acción estratégica en América Latina y el Caribe* (2014-2017). Available at: http://www.onumulheres.org.br/wpcontent/uploads/2016/04/EMPODERAMIENTO-POLITICO-DELASMUJERES-LAC-2014-17-UNWOMEN.pdf. Acessed at: 10 October 2016.

[2] FORBES. (2020). Goldman Sachs Won't Take Companies Public If They Have All-Male Corporate Boards. Available at: https://www.forbes.com/sites/kimelsesser/2020/01/23/goldman-sachs-wont-take-companies-publicif-they-have-all-male-corporate-boards/#f05cf09475a9. Acessed at: 24 February 2020.

[3] Available at https://www.camara.leg.br/proposicoesWeb/fichadetramitacao?idProposicao=2126313

While numerous countries show advances in research that indirectly relate women's presence to the company's value (Isidro & Sobral, 2015), in Brazil the research is limited and focus exclusively on the impact of women's presence in the corporate board with data up to 2009 (Carvalhal da Silva & Margem, 2015). Therefore, our first objective is to investigate whether women participation in corporate boards can boost firms' value and financial performance. Although this has been investigated by Carvalhal da Silva and Margem (2015), we argue that the economic circumstances have changed as a result of both international financial crisis in 2008 as well as crisis in the Brazilian economy, which certainly impact firms' value and financial performance. Additionally, with the adoption of International Financial Reporting Standards (IFRS) in 2010 by Brazilian companies have had an impact in firms' financial performance (Moura & Coelho, 2016; Moura & Gupta, 2019). Therefore, new research is needed in order to investigate the impact of women in corporate boards on firms' value and performance under this new economic scenario.

To the best of our knowledge, prior literature has well investigated the effect of women participation on corporate boards, however there is a lack of research of the participation of women in other top executive roles, such as the board of directors. Additionally, greater presence of women in the board of directors or in the corporate boards may be linked with a presence of an ethics commitee as women are usually responsible to fulfill a company's ethical principles (Labelle *et al*., 2010). However, the implication of this phenomena was not investigated by previous literature, and we conjecture that women presence in top executive roles (either on corporate boards or in the board of directors) and the presence of ethics commitees would help firms to boost their value and financial performance, as they would be able to fulfill long-term goals that increase shareholders perception of value. Therefore, to fill this gap, our second objective is to investigate the joint effect of women's presence in top executive roles and the presence of an ethics committee in companies' value and financial performance.

The values of investigating this issue in Brazil are manifold. Firstly, Brazil is a country with high ownership concentration, weak enforcement, weak investor protection mechanisms and being recognized internationally by several corruption scandals (Please see the Car wash operation). Aguilera and Crespi-Cladera (2015) argue that concentrated ownership structures in emerging economies, can help to inform broader questions around corporate governance and related institutions. As emerging economies are often imposed Anglo-American corporate governance mechanisms, we are not sure of the outcomes of this system in emerging economies (Grosman, Aguilera and Wright, 2019). Thus, the participation of women on boards and executive roles as well as the interplay of the ethics commithee could bring new evidence to the literature on developing countries. Secondly, it is of the utmost importance to discuss this issue as it is not clear whether the bill n. 7179 issued in 2017 has really the potential of increasing firms' value and financial performance. Moreover, the results of this study could potentially support the creation of quotas for women in top executive roles in other emerging countries.

We investigate all companies listed on the Brazilian stock exchange B3 (Brasil, Bolsa, and Balcão) during 2010 to 2017. We investigate firms' financial performance using two metrics, the ROA and by Operating Margin, and we use the log of market value to measure firms' value. Our research design covers three different methods to answer our objectives: (i) fixed effects approach, (ii) generalized structural model approach to deal with endogeneity (e.g. reverse causality), and (iii) propensity score matching approach (to isolate the effect of the woman in the corporate board as a director).

Our results are consistent across our three identification strategies and show that the presence of woman either in the corporate board or in the board of directors, as well as together with an ethics committee boost firms' value. We find some significant evidence that women in the corporate boards, as well as when a firm has an ethics committee boost financial performance measured in the form of return on assets. We don't find consistent results when financial performance is measured as operational margin. The results regarding women as directors and its effects on financial performance are mixed across our methods.

This research provides the first discussions on the impact of the inclusion of quotas of women's participation in the corporate board of Brazilian companies. These discussions may also foment discussions in other emerging markets. Second, it contributes to the literature by discussing the impact of women not only in the corporate board but also in the board of directors in an emerging market setting, which has suffered from strong corruption scandals as well as several financial and political crises during our sampling period. This unique scenario can demonstrate the effect of having a woman in top executive roles considering these turbulent times. We, therefore, extend the research of Labelle et al. (2010) by showing that increase in ethics compliance boost firms' value. Third, we also investigate whether the presence of an ethics committee together with the presence of women in top executive roles affect firms' value and financial performance. Our results suggest that when women have the support of an ethics committee this helps in terms of achieving great market value, and greater financial performance. Thus, we bring new evidence to the literature and extend the studies of Erhardt et al. (2003), Campbell and Mínguez-Vera (2008) and Isidro and Sobral (2015) in an emerging market setting. Lastly, our results may be of value of discussing gender quotas for women in top executive roles and may also foment the discussion of this issue in other emerging markets. The remainder of this paper is organized as follows. Section 2 developes hypotheses. Section 3 describe our research methods. Section 4 presents the empirical results. Finnally the last section discusses our conclusions and implications of our research.

2. Theoretical Background

In this section, we first discuss the international agenda, on gender quotas for corporate boards in several countries, including Brazil, through bill n. 7179 of 2017. Subsequently, the fundamental research hypotheses are developed.

2.1. Gender Quotas for the Corporate Board

Through political decisions, the discussions around the theme of inclusion of gender quotas in corporate boards are diffused by three distinct bases, according to Terjesen, Aguilera and Lorenz (2015), in which they are structured by the amplification of the vision of investments to the stakeholders, the analysis of the impact in companies' value, and changes in companies' ethical behavior and in countries' social identity.

The corporate board is considered an important tool of corporate governance and highly discussed and studied by the Agency Theory and Administration Theory, in search of mitigating informational asymmetry and, most importantly, when it comes to the monitoring aspect of high executives (Watts & Zimmerman, 1986; Fama & Jersen, 1983; Dechow, Sloan & Sweeney, 1996), and for that reason it is not only a target of numerous studies, but also, according to theorists of resource-based view (RBV), the councils are built on a source of resources for the good functioning of the company (Barney, 1990). Therefore, it is possible to observe that the corporate board is one of the responsible for the construction of the company's mechanisms of prevention and monitoring, consequently presenting a strong impact in the economy (Hillman & Dalziel, 2003).

It's factual to observe that public management's attitudes correlated to the changes in corporate boards bring, one way or another, positive and negative impacts to the companies and

society in its entirety, and for that reason it is necessary to analyze the historical context of the countries that adopted the inclusion of gender quotas for corporate boards' decision making, compulsorily or voluntarily.

The first mentions of inclusion of gender quotas in corporate boards originated from Norway in 2002, when minister Ansgar Gabrielsen announced the compulsory inclusion of at least 40% of women in the corporate boards' panels of open capital and state-owned companies, punishable by dissolution or shutdown from the Oslo Stock Exchange (Huse, 2013; Strom, 2015). Before the decision making, the presence of women in the council did not surpass 10%, and the motivations for the implementation of quotas were based in the improvement of country's social identity, consequently increasing companies' value (Storvik; Teigen, 2010).

Afterwards, Spain announced the inclusion of quotas, but influencing the voluntary inclusion between the years of 2007 and 2015, when it suffered great pressure and political resistance, demonstrating that only half of the companies fulfilled the goal of 40% of the effective chairs for women in corporate boards (Terjesen *et al.*, 2015), considering this, Spain adopted the inclusion of quotas to motivate behavioral changes in company's ethical compliance and in the country's social identity.

In contrast, Iceland suffered great national pressure for the inclusion of gender quotas after the major banks in the country, which were administered by men, were involved in big scandals that devastated the nation with an economic crisis (Vaiman, Sigurjonsson & Davidsson, 2011), making it clear that the country's motivations were based on the amplification of the vision of investments for the stakeholders and, consequently, the increase in the company's value, obtaining positive feedback.

Other countries like France, Italy and Belgium also adopted the inclusion of quotas for women in the board, and the initial motivations were only and exclusively because of behavioral changes in the ethical conduct and country's social identity (Brogi, 2013).

After the mobilizations in European countries, the European Union Committee proposed, in 2012, the inclusion of quotas for the participation of women in European companies' corporate boards, which was signed in 19/07/2017 and remains in force. In contribution, (Isidro & Sobral, 2015) performed a research with 16 European countries and analyzed the behavior of 992 companies, investigating the direct and indirect effects of women in corporate boards on companies' value. They do not find evidence that a greater participation of women in the board directly affects the company's value, but indicate that there are indirect factors that increase it, for instance, women's relation not only with the ethical principles, but also with the financial performance (Isidro & Sobral, 2015).

Even though China did not present laws that motivate the inclusion of quotas, studies performed in companies listed in the stock market remarked on the female sensibility and the importance of gender diversity to companies' shifts in ethical and social behavior (Liu, Wei & Xie, 2014). Similarly, authors (Muller-Kahle & Lewellyn, 2011) identified that North American financial companies that had a council with lower gender diversity and short mandates were the ones involved with subprimes, displaying high incidence of risk-taking by council members.

In Brazil, bill n. 7179 (2017) determines a system of quotas for the participation of women in Brazilian public companies. It is based on the principle of search for change in the company's ethical behavior, followed by the country's social identity. However, statistical data shows the opposite and demonstrate that Brazil is within the last placements in terms of female representation in leadership roles, with only 15% of the management positions occupied by women Grand Thorton.[4] Likewise, women with university diplomas earn only 63% of what

[4] (https://www.grantthornton.global/, recovered in November 2018).

men do to work in similar positions, in comparison with OECD'S average of 73%[5], with men still being the holders of the higher salaries and faster career progressions than women (Eagly *et al*., 2007).

In September of 1995, the world accompanied one of the biggest rises of the active voice for gender diversity through the IV Conference of the United Nations on women, that took place in Beijing, named ***"Action for Equality, Development and Peace"***[6]. The Conference had as

one of its central goals "women's empowerment", aiming to emphasize the importance of women taking control over their development, making the government and society responsible for enabling it and supporting them in this process.

Collective actions across the globe consolidated diversity and women's empowerment in the political (Malhotra & Schulerm, 2005) social and economic field (Luttrell & Quiroz, 2009), resulting in laws that support women in government agencies in different levels (Malhotra & Schulerm, 2005). In 2010, the UN, supported by many countries, created the ***United Nations Entity for Gender Equality and the Empowerment of Women***, highlighting that "Gender equality is not only a basic human right, but its achievement has enormous socioeconomic ramifications. Empowering women fuels thriving economies, spurring productivity
and growth."[7]

The heterogeneity and gender diversity inside the boards amplify the perspectives of solutions through discussions (Van Knippenberg *et al*., 2004), generating different alternatives for the companies (Watson, Kumar & Michaelsen, 1993). To increase the perspectives of choices and to offer different paths in the decision making of a company is to promote growth in the board's independence, consequently increasing the efficiency, effectiveness and performance (Bonn, Yoshikawa, & Phan, 2004; Carter, Simkins & Simpson, 2003), promoting the improvement in governance (De Abreu *et al.,* 2012).

2.2 Hypotheses Development

The first objective of this research is to analyze if there is an association between women's presence in corporate boards or in the board of directors and an increase of companies' value and financial performance in Brazil. Gender diversity can expand the quality in problem solving, such as overcoming the different shapes of homogeneous groups' decisions (Hambrick, Cho & Chen, 1996). Suggesting to investors that a company may increase its value and positively influence the dynamics of corporate boards in the organizations by promoting gender diversity (Dezco & Ross, 2012).

Several studies indicate that the presence of women in the board is related to a positive association with companies' value or financial performance. For instance, Post and Byron (2015) did a meta-analysis with 87 independent samples, counting as participants from more than 20 countries, including South Africa, Sweden, Peru, France, India, and others, showed that there is a positive correlation between women's participation in the corporate board and companies' value, based on the ethical conformities and financial performance. Another study by the Credit Suisse (2016) revealed that women follow a tendency of growth in positions of high management in the same proportion that present positive financial results, this research

[5] (https://www.oecd.org/edu/eag2014/, recovered in September 2016)

[6] UN WOMEN. (2016). *Empoderamiento político de las mujeres: marco para una acción estratégica en América Latina y el Caribe* (2014-2017). Available at:

[7] Refer to the above footnote.

investigated 27,000 managers in the world's 3,000 largest companies, finding that, the larger the proportion of women in decision making positions, the higher are the returns on investments. Cementing the argument of (Carter, Simkins & Simpson, 2003), in which were analyzed all companies listed on Fortune 1,000 and it was concluded that the presence of women in corporate boards is positively associated to companies' value.

According to Van Der Walt and Ingley (2003), investors seek to find inside the corporate boards the appropriate balance through different expertises, which will lead to effective decision making, avoiding companies' failure. Moreover, Borguesi, Chang and Mehran (2016) complement that, to investors, the equilibrium of corporate board and women's presence are positively correlated to the company's creativity and innovation, bringing not only financial benefits, but also support in the construction of companies' ethical image.

http://www.onumulheres.org.br/wpcontent/uploads/2016/04/EMPODERAMIENTO-POLITICO-DELASMUJERES-LAC-2014-17-UNWOMEN.pdf. Acessed at: 10 October 2016

There is evidence that a larger proportion of women in corporate boards and high executive teams bring abnormal positive results to the company (Francoeur, Labelle & SinclairDesgagne, 2008), and stock prices reflect more specific informations of the firm in companies that maintain a larger gender diversity, transmitting value to its stockholders (Gul, Hutchinson & Lai, 2013).

By analyzing the relationship of financial performance with women's presence, Erhardt, Werbel and Shrader (2003) found a positive relationship between the percentage of female board members in large-sized American companies and financial measures of performance (ROA and Operational Margin). Carter *et al.* (2003) also identified that the number of women in corporate boards is positively related to ROA. Gulamhussen and Santa (2015), and Conyon and He (2017) also find that some financial performance measures, for instance, the return on equity, return on assets, operational profit index, and other market based measures, tend to increase when there is female representation in the corporate board.

Evidence in emerging markets also corroborates these results. Yap lee-kuen, Sok-gee and Zainudin (2017) show that having female directors in the corporate board tend to increase financial performance of Malaysian firms. Chinese researchers also found positive relations between gender diversity in the corporate board and financial performance of companies analyzed in the country from 1999 to 2011, where growth in the (ROA) was observed, as well as in the return on sales, proving the "critical mass" theory, wherein it was acknowledged that companies with three or more women in the board present superior financial performance to the one obtained by companies with lower numbers of women in the board (Liu, Wei & Xie, 2014), following the same tendency, a research performed in 169 companies from 2002 to 2011 in South Africa, found positive results by analyzing the heterogeneity of the council and financial performance (Ntim, Opong & Danbolt, 2015).

Previous Brazilian studies show that there are positive effects in companies' value when there is two or more women in the corporate board (Carvalhal da Silva & Margem, 2015).

Additionally, the extensive evidence presented a positive relationship between women in top executive roles and firms' value and financial performance. Thus, our hypotheses are as follows:

***H1*: There is a direct association between women's participation in the corporate board and board of directors in companies' value.**

***H2*: There is a direct association between women's participation in the corporate board and board of directors in companies' financial performance.**

The second objective of this research is to analyze if companies that have an Ethics Committee and women participating in corporate boards or in director boards, have higher market value or better financial performance. This is based on the argument that committees are the arena in which crucial decisions are made and strategies are built. Additionally, many critical processes and corporate board decisions do not come from the corporate board, but from the committees (Dalton *et al.*, 1998).

During past years companies have sought to identify mechanisms that have impacted on the construction of its value (Miraftabzadeh *et al*., 2015), and one of the prevention mechanisms utilized has been the transparency in business practices, as well as informational transparency, providing trust and credibility to companies' actions (Smith, Palasso & Bhattacharya, 2010). A way to achive greater transparency may be related to hiring more women in firms' corporate board as the presence of women in corporate boards can increase ethical compliance (Post & Byron, 2015).

Ethics Committees in Brazil are announced as true establishers of value in companies listed in the B3, being described and documented in the ethics code as trying to fulfill companies' true mission and objective.

Some studies try to measure the effectiveness and efficiency of the establishment of compliance programs or corporative governance, in lieu of pinpointing which parameters or rules could decelerate fraudulent practices and mitigate corporate corruption, but end up being blocked by questions and inquiries about what would be truly ethical or unethical in the corporate environment. For instance, Jones (1991) explains that the unethical behavior is defined as a behavior that is "illegal or morally unacceptable to most of the community"; that is to say, there is a step by step to be analyzed, from the moment something was morally rejected by a great quantity of people, until the point it became the norm.

Pallazzo *et al.* (2016), explain that the individual values are not made overnight, but are formed and nurtured by socialization processes that incorporate and place individual performers in a traditional normative context. Thus, companies' values are built, the acceptance of their investors are analyzed, the internal regiment is placed and adjusted to what was ethically thought and discussed.

Representation of minority groups in society, both in the corporate body and corporate boards, serve as an incentive and originate ethical considerations (Terjesen, Sealy & Singh, 2009), likewise, a company's engagement with high standards of responsibility and social ethical principles increases its value (Rodgers, Choy & Guiral, 2013; Jo & Harjoto, 2011; Donker, Poff & Zahir, 2008), stimulating companies' ethical and social performance (Boulouta, 2013; Hafsi & Turgut, 2013), and women's presence is intimately connected and impacts ethical and social issues (Isidro & Sobral, 2015). Brazil has shown high levels of scandals around corruption in the past years, similarly to what happened in Iceland, followed by an economic crisis (Vaiman, Sigurjonsson & Davidsson, 2011), along with what occurred in North American companies involved with subprimes (Muller-kahle & Lewellyn, 2011), where the majority of corporate boards were predominantly male. Therefore, we expect the inclusion of women in the corporate board or in the board of directors will increase companies' ethical compliance, which will help to achieve firms' long-term value as well as boosting performance.

Considering the possibility of existing a relationship of participation of women in corporate board and their interaction with ethical compliance through ethics committees, the hypotheses are as follows:

***H3*: There is an association between the interaction of women's participation in corporate board and board of directors and the existence of ethics committee in the value of the company.**

***H4*: There is an association between the interaction of women's participation in corporate board and board of directors and the existence of ethics committee in its financial performance. 3. Research Design**

3.1 Sampling procedures

We gather financial data from all public firms listed on B3(Brazilian Stock Exchange) available at the database of Economática that were both dead or still listed. We adopt this criterion to mitigate the survivorship bias. Our sampling period is from January 2010 to December 2017. This period was chosen because detailed information about the corporate boards and board of directors, from which we get data of number of women in the boards, started to be available publicly from 2010 (Norm CVM n.480, 2009). We hand-collect information regarding whether there is at least one woman in the corporate board as well as on the board of directors. Our sample comprises 342 companies, with 5,208 firm-year observations. The number of firms and observations decreases to 281 and 2,008 respectively due to the requirement of all being available to run our regressions and methods. We winsorize all variables at 5% in order to deal with outliers in our sample.

3.2 Econometric models and procedures

We estimated our models using a fixed effects estimator with robust standard errors to control for autocorrelation and heteroskedasticity. In order to address ***H1*** and ***H3***, we have the following model:

$$MV\beta_6 LEV_{it} = {}_{it}\beta + {}_0\beta + {}_7 MTBV\beta_1 DWOMEN_{it} + \quad {}_{it} + \beta_2 + ETHICS\,\beta\, DGOV_{IT} + + \beta_3 \beta DWOMENAUD + * \varepsilon ETHICS \quad {}_{it} + \beta_4 ROA_{it} + \beta\ {}_5 SIZE_{it} + \quad (1)$$

$$\beta_8 AGE_{it} \quad {}_9 \quad {}_{it} \quad {}_{10} \quad {}_{it} \quad {}_{it}$$

where: MV_{it} = is the natural logarithm of the market value of equity for company i at time t; $DWOMEN_{it}$ is equal to 1 in case there is a woman in the coprorate board and 0 otherwise; $ETHICS_{it}$ equals 1 if there is an Ethics Committee, otherwise 0; ROA_{it} = calculated as the net profit divided by total assets; $SIZE_{it}$ = represents the assets' natural logarithm; LEV_{it} equals current liabilities plus non-current liabilities, divided by total assets; $MTBV_{it}$ is the ratio between market value and book value of equity; AGE_{it} equals the number of years a company has been running denoting its age; $DGOV_{it}$ = equals 1 if a company bond to higher level of corporate governance practices (if it is listed on the segment of the New Market, Level 1 and Level 2) and it is 0 otherwise; AUD_{it} equals 1 if the company is audited by Big 4 Auditors (KPMG, Deloitte, PwC and EY), and 0 otherwise.

We include several controls for companies' financial performance such as SIZE, LEV, ROA because those can impact on firms' value (Carter *et al*., 2010). We also control for growth opportunities represented by the MTBV (Zang, 2012; Cupertino, Martinez & Costa, 2015), a company's age (AGE), different levels of corporate governance (DGOV) because companies with good corporate governance practices soften conflicts and are aligned with ethical compliances, and we also control for stricter auditors (AUD) Big 4 audit firms may mitigate earnings management and signal higher credibility of firms financial statements.

Similarly, we build the next model, with regard to women on the board of directors, to shed light on ***H1*** and ***H3*** in the same fashion:

$$MV\beta_7 MTBV_{it} = \beta_{it0} + + \beta\beta_{81} AGEDDIR_{it\ it} + + \beta\beta_{92} DGOVETHICS_{it} + {}_{IT}\beta_{10} + AUD\beta_3 DDIR_{it} * ETHICS_{it} + \beta_4 ROA_{it} + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \quad (2)$$

$$+ \varepsilon_{it}$$

Where: $DDIR_{it}$ equals 1 if there is a woman in the board of directors, and 0 otherwise.

We investigate the value of the coefficients β_1 to evaluate whether the presence of women on corporate board (Board of directors – Equation 2) is linked with firms' value (***H1***), β_2 to evaluate whether the presence of an ethics committee is linked with firms' value and β_3 to evaluate whether having women on the corporate board (board of director – Equation 2) as well as an ethics committee is linked to firms' value (***H3***). We alert readers that the coefficient on β_3 cannot be taken alone to investigate ***H3***, rather we focus on the sum of the coefficients of β_1, β_2 and β_3 to provide a conclusion for our hypothesis. Our next models focus on ***H2*** as well as ***H4***:

$$ROA\ \beta_{4\,it}\ or\ OPMARGIN_{it} = \beta_0 + \beta_1 DWOMEN_{it} + \beta_2 ETHICS_{IT} + \beta_3 DWOMEN * ETHICS_{it} + (3)\ SIZE_{it} +$$

$$\beta_5 LEV_{it} + \beta_6 MTBV_{it} + \beta_7 AGE_{it} + \beta_8 DGOV_{it} + \beta_9 AUD_{it} + \varepsilon_{it}$$

$$ROA\beta_5 LEV_{it\ it} or + OPMARGIN\beta_6 MTBV_{it} + {}_{it}\beta\ _7 = AGE\beta_{0\ it} + \beta_1 DDIR_{it} + \beta_2 ETHICS_{IT} + \beta_3 DDIR * ETHICS_{it} +$$
$$\beta_4 SIZE_{it} + \qquad (4)$$
$$+ \beta_8 DGOV_{it} + \beta_9 AUD_{it} + \varepsilon_{it}$$

Where: $OPMARGIN_{it}$ is the earnings before interest and taxes (EBIT) divided by net sales.[8]

In models 3 and 4 we also look at the coefficients of β_1, β_2 and β_3 individually as well as their sum, to evaluate ***H2*** and ***H4***, similar to our previous analyses. Lastly our next models investigate ***H5***:

$$LEV\beta_6 MTBV_{it} = {}_{it}\beta + {}_0 + \beta_7 \beta AGE_1 DWOMEN_{it} + \beta_8 DGOV_{it} + \beta_{it2} ETHICS + \beta_9 AUD_{ITit} + + \beta_3 \varepsilon DWOMEN_{it}$$
$$* ETHICS_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \qquad (5)$$

$$LEV\beta_6 MTBV_{it} = {}_{it}\beta_0 + + \beta_7 \beta AGE_1 DDIR_{it} + {}_{it} + \beta_8 \beta DGOV_2 ETHICS_{it} + {}_{IT}\beta_9 + AUD\beta_3 DDIR_{it} + \varepsilon_{it} *$$
$$ETHICS_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \qquad (6)$$

The analysis on the coefficients of β_1, β_2 and β_3 take the same fashion as our previous analyses.

4. Results

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics on the interest variables, as well as the control variables.

(Table 1 here)

According to Table 1, it is worth noting that the mean of the ROA during the period is negative illustrating the economic crisis period that followed from the financial crisis in 2010 and also the recent political crisis in Brazil which culminated in an impeached president and several corruption scandals such as the operation car wash. On average, 25% of the listed companies between the period of 2010 and 2017 presented 1 woman in their corporate board, likewise, in the same period, an average of 16.5% of the listed companies presented 1 woman in the Board of Directors.

The financial leverage ratio presented an average of 1.11 among the companies involved, illustrating caution during the crisis period. The Market to book value ratio is greater than 2 indicating that on average, investor perceive growth opportunities for Brazilian firms. We next present the descriptive statistics segregated by the presence of a woman on the corporate board,

[8] The variables utilized and their definitions are presented in appendix A.

on the board of the directors, as well as the interaction of those with the presence of an ethics committee, resulting in four panels (A, B, C and D) of table 2:

(Table 2 here)

According to Table 2, Panel A, following the t test, the only variables that are not significant between DWOMEN being equal to 0 and 1 are financial leverage (LEV) and companies' age (AGE). All other variables are significantly higher at 1% for when there is a woman in the corporate board. Those firms have higher performance (ROA), are larger firms (SIZE), better corporate governance practices (DGOV), higher growth opportunitties (MTBV), are audited more by Big 4 auditors (AUD), more women in the board of directors (DDIR), more ethics committees (ETHICS), higher operational performance (OPMARGIN), and higher market value (MV).

Panel B shows a similar situation as panel A for when there is at least a woman in the board of directors. However, companies that hire women for the board of directors are on average younger firms, which may suggest a change in organization culture and dynamics as younger firms are more flexible and have a more inclusive culture. Consistent with the evidence that Engel, Knappert and Biron (2018) found in startups.

Panel C and Panel D illustrate similar features of Panel A and Panel B. We highlight the fact that Leverage is greater for firms that have womem on the board of directors and also have an ethics committee, indicating that they may feel more supported to take risks which may yild higher returns in the future and fulfill shareholders long term value.

4.2 Correlation Analysis

We run the correlation analysis through all variables used in this study in order to verify if there is any potential endogenous effect between value of the company or financial performance and the participation of women, in other words, we don't know for sure if a company has increased value or financial performance because it hires more women, or if because a company have more women, this impacts on companies' value and financial performance.

(Table 3 here – Trimmed due to space)

The analyses show that the dummies of woman in the corporate board (DWOMEN) as well as the dummy of woman in the board of directors (DDIR) show very weak correlation with our covariates, which indicates that our analysis will not suffer from this endogenous problems as indicated in prior literature (Isidro & Sobral, 2015). Therefore, in the next section we estimate our regressions considering a fixed effects estimator, that is we consider that the error term may be correlated with other unobservable omitted variables such as ability of firms' managers as well as other intrinsic firm characteristics that vary from firm to firm and therefore represent a firm's unique behaviour.

4.3 Testing *H1* and *H3* – The effect of Women on corporate board and a presence of an ethics committee on firms' value and financial performance.

We present the results from our models 1 and 2 including for each one of them an estimate controlling for year fixed effects as well.

(Table 4 here)

Columns 1 and 2 from table 4 show that when firms have women on corporate boards, or when they have women in the board of directors (columns 3 and 4) there is no effect of the presence of women and firms' market value. This provides evidence that rejects our ***H1***. Columns 1, 2, 3 and 4 also show that companies that have an ethics committee present higher market values and this is significant at 1%. However, we are interested in the interaction between women on corporate boards or on the board of directors and the presence of an ethics committee. Columns 1 and 2 show that the interaction between DWOMEN and ETHICS is

positively significant at 1% indicating that companies that have both women in their corporate boards as well as an ethics committee have higher market value. The same result could not be found for DDIR and ETHICS on columns 3 and 4. Nevertheless, one must rely on the sum of the coefficients as presented on Panel B of table 4 in order to evaluate ***H3***. The sum of the coefficients of our variables of interest (DWOMEN(DDIR), ETHICS and the interaction of both) are all significant at 1% indicating that companies which have women on the corporate boards (board of directors) and an ethics committee, have higher market value. This suggests that the presence of women and an ethics committee is associated with ethics and social compliance that helps to fulfill shareholders long term value. Therefore, we find strong support for our ***H3***. Overall, our control variables signs are according to expectation considering our stricter approach including year fixed effects on columns 2 and 4. The results show that ROA, SIZE, MTBV, DGOV are significantly positive at 1% and AGE at 1%, indicating that firms that have higher performance, are bigger, have bigger growth opportunities, have better corporate governance practices, and are older present higher market value. The coefficients on AUD were not significant across our regressions, which indicates that being audited by a Big 4 auditor is not related to firms' value. That is, investors do not price these companies distinctively in comparison to the others.

4.4 Testing *H2* and *H4* – The effect of women and ethics committee on firms' financial performance.

Next, we examine whether the presence of women in corporate boards or in the board of directors is associated with better financial performance, as well as if having an ethics committee together with the presence of women on the boards is associated with higher financial performance.

(Table 5 here)

Columns 1 and 2 show that DWOMEN is not significant, as wells as DDIR on columns 3 and 4. This illustrates that simply the presence of women in the corporate board or in the board of directors is not enough for a firm to perform better (in terms of ROA). Therefore, these findings reject our ***H2.*** Columns 1, 2, 3 and 4 show that ETHICS is positively significant at 1% and 10% indicating that having an ethics committee help to booster firms' financial performance. However, the interaction between DWOMEN and ETHICS (on columns 1 and 2), and DDIR and ETHICS (on columns 3 and 4) is not significant. Thus, this does not provide support for our ***H4***. Nonetheless, the sum of the coefficients on Table 5, Panel B, show that having women on the corporate board and ethics committee have a positive and significant effect at 1% on firms' performance measured in terms of ROA. Panel B also shows that the sum of coefficients is significant for the variables DDIR, ETHICS and DDIR*ETHICS, showing that having women on the board of directors as well as an ethics committee help to booster firms' performance. Overall these results provide support for ***H4***. This suggests that it is the joint effect of women working on the corporate board or in the board of directors and the presence of an ethics committee that help to booster firms' performance.

We also conduct our tests with another metric of performance, namely the operational margin, which is showed next in table 6.

(Table 6 here – trimmed due to space)

The results are against our expectation. Columns 1, 2, 3 and 4 show that none of the coefficients of interest are significant. This suggests the presence of women or together with an ethics committee do not imply in better operational performance. However, this result together with our previous result shows that women and ethics committee could help to cut expenses, or to pay less taxes, but they cannot increase operational performance. They focus on overall

performance, which is a metric used by investors for valuation purposes. Thus, we reject our ***H2***, but find partial evidence for ***H4***.

4.6 Robustness tests

In this section, we report the robustness tests using 2 different approaches. First, we present results using a generalized structural equation approach. Second, we present the results using a Propensity Score Matching approach (PSM).

4.6.1 Generalized Estructural equation approach

In order to deal with endogeneity, we performed a generalized structural equation model estimation (gSEM), since our model may suffer from reverse causality between the presence of women on the board, market value and financial performance (Isidro & Sobral, 2015). In this technique, we estimate our system of 21 equations using a generalized linear model (GLM) by using a maximum likelihood estimator. In gSEM we assume that ROA and Market Value are endogenously determined within the system and each variable that explain them possess an independent regression. Thus, the independent variables are uncorrelated by construction and its effects on dependent variables are considered simultaneously. This is a key feature of using gSEM over 3SLS (three stage least squares) and 2SLS (two stage least squares) as used in previous research. When estimating the model over 3SLS and 2SLS that treats endogeneity, one loses information content because a part of the variability of the original variables is lost (with the instrumental variables). However, we are instead simultaneously estimating the original variables through gSEM, as it does not require exogeneity. Therefore, we argue that we are better able to investigate the real effect of these exogenous variables over previous research (Erhardt et al., 2003, Campbell & Mínguez-Vera, 2008, Isidro & Sobral, 2015). The 21 equations (trimmed due to space) represent the full system of simultaneous equations that was estimated to test the hypotheses of this study. It is worth mentioning that all variables are general response variables in which we consider its properly distribution in our estimation process. We present the results from our first system including an estimate controlling for year fixed effects with robust clustered errors.

(Table 7 here)

Colum 2 from table 7 show that when firms have women on corporate boards there is a positive effect on firms' market value. This provides evidence that supports our ***H1***. Also, in colum 2 we can observe that if a company possess an ethics committee, then its market value tends to increase and this is significant at 10%. However, we are interested in the second order effect of women on corporate boards through the presence of an ethics committee. Columns 2 show that the interaction between DWOMEN and ETHICS is not significant, however, when we perform a F-test to sum the estimated coeficients of DWOWEN, ETHICS, and the interaction term, presented on Panel B of Table 7 this is significant at 1% indicating that companies that have both women in their corporate boards as well as an ethics committee have higher market value, which supports ***H3***.

In the same system, we test our ***H2***, which conjectures that the presence of women in the corporate board may improve firm financial performance. Colums 2 of table 7 show that our variable of interest is significant at 1%, implying that if firms have women on their corporate boards, firms tend to have higher financial performance. The presence of an ethics committee, in its turn, also increases firms' financial performance (significant at 5%) wich suggests that if a companie has both, a woman in the corporate board and an ethical committee, then its financial performance will be greater, wich leads to our ***H4***. However, the interecation between woman and ethics is not associated with firms' financial performance. However, when we perform a F-test to sum the estimated coeficients of DWOWEN, ETHICS, and the interaction term, presented on Panel B of Table 7 this is significant at 10% indicating that companies that have

both women in their corporate boards as well as an ethics committee have better financial performance, which supports ***H4***.

We use a similar fashion to present the results for when the woman is present in the board of Directors.[9] Results are similar.

4.6.2 Propensity Score Matching

As an alternative identification strategy, we have done a propensity score matching (PSM) approach. While this method does not treat endogeneity as in the gSEM, it helps to isolate the effect of the women in the board or as a director. The idea is to match a firm that has women in its board of directors with a firm that does not. Therefore, we are able to better compare the effect of women if we match other firm characteristics. We match firms based on size, industry and year in our first stage. We do this matching four times according to the following variables: (i) DWOMEN, (ii) DWOMEN*ETHICS, iii (DDIR), (iv) DDIR*ETHICS. In the second stage, we regress the same variables described in our fixed effects approach (equations 1, 2, 3 and 4) apart from the variables already included in our first stage using an Ordinary Least Squares (OLS) estimator. Results are similar as reported before, we did not present it here due to space restriction.

5. Concluding Remarks In search of fomenting gender diversity in company's management positions, and in support of bill n. 7179 of 2017, which proposes a system of quotas for the participation of women in public companies, to deepen the search of monitoring tools and good corporate governance practices inside the organizations, with the goal of improving ethical compliance (Palazzo *et al*., 2012), this research presented two objectives.

The first objective was to analyze the impact of women's participation in corporate board and board of directors, directly on companies' value and financial performance. The second objective was to analyze the participation of women in the corporate board and in the board of directors together with the presence of an ethics committee, in financial performance, as well as their impact in companies' value.

We have run three different identification strategies (Fixed Effects, gSEM, PSM with OLS) to answer both objectives, and all methods converge in support of ***H3***. Therefore, our results show that the presence of women either in the corporate board or in the board of directors enhances firm value if there is an ethics committee. This result finds its support in the argument of Dalton *et al.* (1998), that argue that many of the critical processes and corporate board decisions do not stem from the general council, but from the committees. Our study corroborates this evidence, suggesting that the market prices differently firms that have women and an ethics committee. Considering that there is at least one woman in the council and ethics committee in the company, there are positive reflections in its value, in line with Post and Byron

(2015) who state that women in the council present positive effects on the compliance with ethical and social standards. We therefore suggest that is not only necessary that emerging economies issue places for women in the board or in the board of directors, in the form of quotas, but also to regulators need to mandate an ethics committee in companies. This suggestion might apply to other emerging economies that face similar problems as Brazil such as high ownership structure, weak corporate governance, weak enforcement of law, and high corruption.

[9] The second system is similar to the first system from equations 7 to 27, we just replace DWOMEN by DDIR. We suppress the second system for easiness of exposition and the sake of brevity.

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Table 1: Descriptive Statistics

VARIABLES	N	Mean	Median	Std. Dev
Test Variables				
MV	2,491	13.74	14.01	2.293
ROA	3,244	-0.0372	0.0200	0.238
OPMARGIN	2,657	0.0586	0.104	0.400
LEV	3,085	1.119	1.400	3.463
Control Variables				
SIZE	3,312	13.89	14.38	2.540
AGE	5,130	41.92	35	34.58
DGOV	5,208	0.290	0	0.454
MTBV	2,591	2.144	1.501	2.069
AUD	4,832	0.597	1	0.490
DWOMEN	5,208	0.250	0	0.433
DDIR	5,208	0.165	0	0.372
ETHICS	2,855	0.0893	0	0.285

Table 2: Descriptive Statistics per criteria

Panel A: If there is a woman in the corporate board or not

Variables	N	DWOMEN = 0			N	DWOMEN = 1			Diff
		Mean	Median	Std.Dev		Mean	Median	Std.Dev	t test
LEV	1,892	1.125	1.373	3.678	1,193	1.108	1.439	3.092	-0.130
ROA	1,968	-0.0591	0.0163	0.260	1,276	-0.00352	0.0318	0.195	6.535***
SIZE	2,032	13.72	14.06	2.489	1,280	14.17	14.86	2.597	4.978***
AGE	3,826	42.25	34	35.52	1,304	40.94	37	31.64	-1.176
DGOV	3,904	0.237	0	0.425	1,304	0.451	0	0.498	15.072***
MTBV	1,619	2.054	1.397	2.091	972	2.293	1.624	2.026	2.859***
AUD	3,531	0.576	1	0.494	1,301	0.655	1	0.476	4.950***
DDIR	3,904	0.0978	0	0.297	1,304	0.367	0	0.482	23.887***
ETHICS	1,780	0.0758	0	0.265	1,075	0.112	0	0.315	3.253***
OPMARGIN	1,619	0.0183	0.0926	0.433	1,038	0.122	0.121	0.334	6.531***
MV	1,492	13.44	13.52	2.261	999	14.20	14.59	2.268	8.1747***

Panel B: If there is a woman in the board of directors or not

Variables	DDIR = 0				DDIR = 1				Diff
	N	Mean	t test	Std.Dev	N	Mean	Median	Std.Dev	t test
LEV	2,318	1.083	1.381	3.612	767	1.228	1.448	2.967	1.008
ROA	2,399	-0.0466	0.0177	0.242	845	-0.0105	0.0320	0.224	3.799***
SIZE	2,462	13.77	14.12	2.523	850	14.26	14.97	2.554	4.894***
AGE	4,269	42.78	35	36.10	861	37.65	34	25.32	-3.978***
DGOV	4,347	0.252	0	0.434	861	0.485	0	0.500	14.066***
MTBV	1,940	2.047	1.427	2.023	651	2.431	1.639	2.179	4.111***
AUD	3,971	0.581	1	0.494	861	0.675	1	0.469	5.116***
DWOMEN	4,347	0.189	0	0.392	861	0.556	1	0.497	23.887***
ETHICS	2,056	0.0696	0	0.254	799	0.140	0	0.347	5.974***
OPMARGIN	1,986	0.0373	0.0940	0.425	671	0.122	0.133	0.308	4.736***
MV	1,823	13.49	13.60	2.316	668	14.45	14.67	2.076	9.404***

Panel C: If there is a woman in the corporate board and the existence of an ethics committee

Variables	DWOMEN & ETHICS = 0				DWOMEN & ETHICS = 1				Diff
	N	Mean	t test	Std.Dev	N	Mean	Median	Std.Dev	t test
LEV	2,385	1.138	1.447	3.503	105	1.404	1.479	2.058	0.772
ROA	2,508	-0.0240	0.0213	0.217	120	0.0595	0.0482	0.0696	4.198***
SIZE	2,559	14.07	14.45	2.385	120	15.84	16.22	1.627	8.059***
AGE	2,735	38.45	34	31.42	120	44.46	37.50	35.93	2.035***
DGOV	2,735	0.502	1	0.500	120	0.767	1	0.425	5.7153***
MTBV	2,038	2.088	1.501	2.061	104	2.553	2.090	1.955	2.247***
AUD	2,720	0.639	1	0.480	120	0.808	1	0.395	3.798***
OPMARGIN	2,126	0.0790	0.104	0.367	98	0.232	0.194	0.252	4.094***
MV	2,056	13.75	13.95	2.221	114	15.71	15.86	1.879	9.251***

Panel D: If there is a woman in the board of directors and the existence of an ethics committee

Variables	DDIR & ETHICS = 0				DDIR & ETHICS = 1				Diff
	N	Mean	t test	Std.Dev	N	Mean	Median	Std.Dev	t test
LEV	2,387	1.123	1.442	3.505	103	1.763	1.563	1.884	1.84*
ROA	2,516	-0.0232	0.0214	0.217	112	0.0482	0.0407	0.0641	3.4731***
SIZE	2,567	14.07	14.44	2.395	112	15.86	16.02	1.210	7.8681***
AGE	2,743	38.71	34	31.50	112	38.61	21.50	34.93	-0.034
DGOV	2,743	0.502	1	0.500	112	0.786	1	0.412	5.929***
MTBV	2,041	2.094	1.483	2.065	101	2.453	1.692	1.887	1.713*
AUD	2,728	0.639	1	0.481	112	0.839	1	0.369	4.368***
OPMARGIN	2,124	0.0793	0.105	0.366	100	0.223	0.186	0.291	3.872***
MV	2,064	13.76	13.96	2.239	106	15.57	15.45	1.638	8.210***

*** p<0.01, ** p<0.05, * p<0.1

Note: Differences are between variables when the variable of interest equals to 1 minus when it equals to 0.

Table 4

Panel A: Effect of women and ethics committees on Market Value

Independent Variables	Exp. Sign	MV			
		(1)	(2)	(3)	(4)
DWOMEN	+	-0.0650	-0.0662		
		(-1.084)	(-1.144)		
ETHICS	+	0.481***	0.813***	0.483***	0.815***
		(9.786)	(17.18)	(9.661)	(17.01)
DWOMEN*ETHICS	+	0.267**	0.224*		
		(2.054)	(1.764)		
DDIR	+			-0.0163	-0.00322

				(-0.187)	(-0.0386)
DDIR*ETHICS	+			0.0497	0.0323
				(0.359)	(0.245)
ROA	+	0.937***	0.814***	0.933***	0.809***
		(4.178)	(3.832)	(4.164)	(3.833)
SIZE	+	0.739***	0.772***	0.740***	0.772***
		(13.43)	(13.83)	(13.12)	(13.50)
LEV	+	-.0007	-.0007	-.0003	-.0003
		(-0.13)	(-0.12)	(-0.07)	(-0.07)
MTBV	+	0.206***	0.174***	0.205***	0.174***
		(5.572)	(5.070)	(5.514)	(5.000)
AGE	+	-0.0855***	0.114**	-0.0853***	0.125**
		(-8.167)	(2.020)	(-8.135)	(2.394)
DGOV	+	-1.724***	6.749**	-1.718***	7.228***
		(-3.605)	(2.548)	(-3.588)	(2.962)
AUD	+	-0.0294	-0.0149	-0.0299	-0.0160
		(-0.406)	(-0.219)	(-0.415)	(-0.235)
Constant		6.205***	-1.796	6.174***	-2.239
		(7.300)	(-0.654)	(7.133)	(-0.855)
Fixed Effects					
Year		No	Yes	No	Yes
Firm		Yes	Yes	Yes	Yes
Observations		2,008	2,008	2,008	2,008
Number of Firms		281	281	281	281
Adjusted R-squared		0.369	0.432	0.367	0.431

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B: Testing the sum of coefficients

	Coefficients		Sum	F-test
(1) $\beta_1 DWomen_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DWomen * Ethics_{i,t} = 0$		0.683		63.19***
(2) $\beta_1 DWomen_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DWomen * Ethics_{i,t} = 0$		0.9708		30.99***
(3) $\beta_1 DDIR_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DDIR * Ethics_{i,t} = 0$	0.5164			18.70***
(4) $\beta_1 DDIR_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DDIR * Ethics_{i,t} = 0$	0.8443			58.38***

Note: The test is on the sum of the coefficients only, the variables are presented in the equations for easiness of exposition.

Table 5 Panel A: The effect of women and ethics committee on financial performance

Independent Variables	Exp. Sign	ROA			
		(1)	(2)	(3)	(4)
DWOMEN	+	0.0132	0.0145		
		(0.897)	(0.977)		
ETHICS	+	0.0366***	0.0142*	0.0369***	0.0143*
		(3.284)	(1.698)	(3.276)	(1.706)
DWOMEN*ETHICS	+	-0.0109	-0.00902		
		(-0.620)	(-0.529)		

DDIR	+			0.00697	0.00612
				(0.371)	(0.322)
DDIR*ETHICS	+			0.00333	0.00439
				(0.150)	(0.197)
SIZE	+	0.0501***	0.0483***	0.0502***	0.0485***
		(3.866)	(3.728)	(3.848)	(3.703)
LEV	+	0.00161*	0.00161*	0.00163*	0.00162*
		(1.825)	(1.822)	(1.843)	(1.839)
MTBV	+	0.000116	0.00195	0.000184	0.00202
		(0.0208)	(0.361)	(0.0328)	(0.371)
AGE	-	-0.113	-0.00894***	-0.115	-0.00894***
		(-1.358)	(-5.303)	(-1.334)	(-5.282)
DGOV	+	-5.064936	-.4685882***	-5.161596	-.4694716***
		(-1.28)	(-5.04)	(-1.26)	(-5.04)
AUD	+	-0.0232	-0.0239	-0.0227	-0.0233
		(-1.526)	(-1.578)	(-1.507)	(-1.552)
Constant		3.651	-0.323*	3.734	-0.323*
		(1.146)	(-1.927)	(1.130)	(-1.913)
Fixed Effects					
Year		No	Yes	No	Yes
Firm		Yes	Yes	Yes	Yes
Observations		2,035	2,035	2,035	2,035
Number of Firms		281	281	281	281
Adjusted R-squared		0.057	0.066	0.065	0.057

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Panel B: Testing the sum of coefficients

Coefficients	Sum	F-test
(1) $\beta_1 DWomen_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DWomen * Ethics_{i,t} = 0$	0.0389	8.32***
(2) $\beta_1 DWomen_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DWomen * Ethics_{i,t} = 0$	0.0197	3.44*
(3) $\beta_1 DDIR_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DDIR * Ethics_{i,t} = 0$	0.0471	9.5***
(4) $\beta_1 DDIR_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DDIR * Ethics_{i,t} = 0$	0.0247	3.37*

Note: The test is on the sum of the coefficients only, the variables are presented in the equations for easiness of exposition.

Table 7 - Generalized structural equation model: Women in the corporate board

	Coef.	Std.Err.	z	P>z	[95%Conf.	Interval]
Dependent variable MV						
ROA	1.004**	0.442	2.270	0.023	0.138	1.870
DWOMEN	0.241***	0.083	2.920	0.003	0.079	0.403
ETHICS	0.326*	0.180	1.810	0.070	-0.027	0.678
DWOMEN*ETHICS	0.117	0.173	0.680	0.498	-0.222	0.457
SIZE	0.833***	0.046	18.140	0.000	0.743	0.923
MTBV	0.218***	0.025	8.840	0.000	0.169	0.266
AGE	-0.005**	0.002	-2.450	0.014	-0.008	-0.001
DGOV	0.164	0.131	1.260	0.208	-0.092	0.420

AUD	0.404***	0.121	3.350	0.001	0.168	0.641
LEV	0.017	0.011	1.520	0.128	-0.005	0.038
AVERAGE YEAR	-0.079***	0.010	-8.040	0.000	-0.098	-0.060
_cons	159.701***	19.767	8.080	0.000	120.959	198.444
Dependent variable ROA						
DWOMEN	0.032***	0.011	2.880	0.004	0.010	0.054
ETHICS	0.028**	0.014	2.070	0.039	0.001	0.055
DWOMEN*ETHICS	-0.032	0.020	-1.600	0.109	-0.071	0.007
SIZE	0.031***	0.006	4.870	0.000	0.018	0.043
MTBV	0.017***	0.004	4.440	0.000	0.009	0.024
AGE	0.000**	0.000	2.560	0.011	0.000	0.001
DGOV	-0.000	0.013	-0.040	0.970	-0.025	0.024
AUD	-0.004	0.015	-0.290	0.770	-0.035	0.026
LEV	0.004***	0.001	4.170	0.000	0.002	0.006
AVERAGE YEAR	-0.007***	0.002	-4.770	0.000	-0.010	-0.004
_cons	14.337***	3.131	4.580	0.000		20.474
8.200	0.992	0.095				1.196
var(e.MV)					0.822	
var(e.ROA)	0.022	0.003			0.016	0.029
Number of firms	281					
Number of Obs.	2008					

Robust coefficients disclosed
*** p<0.01, ** p<0.05, * p<0.1

Panel B: Testing the sum of coefficients

	Coef.	P>z
(MV) $\beta_1 DWomen_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DWomen * Ethics_{i,t} = 0$	0.684***	0.000
(ROA) $\beta_1 DWomen_{i,t} + \beta_2 Ethics_{i,t} + \beta_5 DWomen * Ethics_{i,t} = 0$	0. 028*	0.089

*** p<0.01, ** p<0.05, * p<0.1