Board Gender Diversity and Its Impact on Earnings Management: An Empirical Analysis for Selected European Firms

Abstract:
From a corporate governance point of view, this paper addresses the question about how board gender diversity influences managerial opportunistic behavior in solving agency conflicts in a sample of European countries. Specifically, we analyzed indexed non-financial companies from Denmark, Finland, France, Germany, Italy, Norway, Portugal, Spain, Sweden, and United Kingdom for the period 2006 – 2016. Several panel data techniques are used in the empirical analysis to deal with the endogeneity and heterogeneity problems. To the best of our knowledge our research is novel in the literature by providing a multi-country approach in board gender diversity, as well as considering contextual, country variables and the role of the regulatory system as determinants of earnings management.

Our results confirm the benefits of having a balanced board, in terms of gender diversity. An equilibrated board tends to mitigate earnings management practices, reinforcing the value of the laws passed in the last decades in Europe. Our analysis reveals that the regulatory framework regarding board gender diversity established by each country has a determinant role in reaching equality in decision-making positions, as a founding value of the European Union. We provide several policy recommendations from our main findings.

Key words: Earnings management; Corporate Governance; Gender Diversity; Board Composition; Female Quotas

JEL Classification: G32, G34

1.Introduction

Equality between women and men is one of the European Union's founding values. It goes back to 1957 when the principle of equal pay for equal work became part of the Treaty of Rome.[1] On this respect, the European Commission has proposed legislation with the aim of attaining a 40% objective of the under-represented sex in non-executive board-member positions in publicly listed companies, with the exception for small and medium enterprises. The proposed directive is supported by the European Parliament and by most member states and continues to be discussed in the Council of the European Union.[2] As a matter of fact, at European Union level, the share of women on the boards of large publicly listed companies has risen from 11.9 % in October 2010 to 23.9 % in October 2016.[3]

Equal participation of women and men in decision-making positions is a matter of justice, respect for fundamental rights and good governance.[4] However, there is a widely held concern about the board's inability to ensure that the management acts in the interest of stakeholders (Huang et al. 2012). This can be observed in the not small amount of real-life corporate scandals in which managers did not make decisions in the best interest of stakeholders, with the subsequent negative consequences on the image and reputation of companies. Hence, the role of the board of director as a monitoring body of managers is critical in preventing managerial opportunistic behavior. Examples of corporate scandals across Europe include to, among many others, Afinsa, Banesto, Gescartera and Pescanova, in the Spanish corporate sector; The Bank of Credit and Commerce International, Olympus and Tesco in the UK; ABB, Prosolvia and Fermenta from Sweden; Balsam and Comroad in Germany; Parmalat in Italy, and Kone in Finland. All these cases revealed the necessity of reinforcing the rules and regulations towards a more transparent disclosure of the financial

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[1] http://ec.europa.eu/justice/gender-equality/index_en.htm

[2] European Commission (2012), *Proposal for a Directive of the European Parliament and of the Council on improving the gender balance among non-executive directors of companies listed on stock exchanges and related measures*. COM (2012) 614

[3] 2017 report on equality between women and men in the European Union.

[4] 2017 report on equality between women and men in the European Union

statements. In most of these corporate scandals, managers misused their making decision power and overstated the financial reports to realize private benefits.

Accordingly, this paper empirically examines how board gender diversity influences the managerial opportunistic behavior materialized in the management of accounting earnings of firms listed in the main stock market indexes of ten European countries: Denmark (KFX index), Finland (HEX 25 index), France (CAC index), Germany (DAX index), Italy (IT 30 index), Norway (OBX index), Portugal (PSI 20 index), Spain (IBEX 35 index), Sweden (SE30 index), and United Kingdom (UKX index).

The most common way to misreport the real financial information is using earnings manipulation. To constrain such opportunistic behavior, country-level initiatives has been addressed through enhanced regulation such as the Cadbury report in the UK in 1992 or the Good Governance Code of listed companies in Spain in 2006. Similarly, concerning specifically the board diversity, many European countries like Spain, Sweden, Denmark, Finland and the UK have enacted regulation towards mandating/promoting more female representation in publicly held firms (Sila et al. 2016). Norway is counted as the first European country introducing legislation on gender quotas in the board of directors, including sanctions when not fulfilling the required quotas. Italy, Germany, France and more recently by Portugal followed the example of Norway on this regard.

This paper contributes to the current literature from different angles. First, to the best of our knowledge, ours is a ground-breaking research in studying the impact of board gender diversity on earnings management for a multi-country sample of European firms. Second, we are also novel in the literature by considering contextual, country variables in the empirical analysis to shed additional light on the role played by the regulatory system and the earnings management practices. Third, to test the robustness of our findings, we apply several gender diversity measures not widely used in the literature yet. Fourth, we follow a methodological strategy based on the application of several alternative panel data methodologies. These econometric methods allowed us to control for the unobservable heterogeneity problem and the simultaneity or endogeneity problem.

We found evidence that more female presence in the board of directors leads to less earnings manipulations practices in European countries reducing therefore agency conflicts. Findings

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that are in line with the existing literature. Additionally, we observe that the existence of laws mandating female quotas for more gender equilibrated boards have a positive effect in constraining the managerial opportunistic behavior. All these results reveal the timeliness of laws and recommendations regarding board gender diversity in the countries analyzed.

The paper proceeds as follows. In addition to this introductory section, the next section summarizes the literature review and develops the research hypotheses. Section 3 describes the methodological strategy used in the empirical analysis. Section 4 discusses the empirical results and finally, in section 5, we underline the major conclusions.

2.   Literature Review and Hypotheses

a. *Earnings management and board gender diversity*

Research related to economics and psychology in general find that women are more risk averse and more cautious than men in their financial decisions (Cohn et al. 1975; Riley Jr. and Chow K. 1992; Estes and Hosseini 1988; Byrnes et al. 1999). Barua et al. (2010) and Sexton and Bowman-Upton (1990) examined corporate financial and investment decisions made by female executives compared with male executives and found evidence that men exhibit relative overconfidence in significant corporate decision making compared with women. Similarly, Francis et al. (2015) studied the positive impact of CFO gender diversity on financial reporting in the context of accounting conservatism.

Empirical evidence also shows that women have more ethical conducts than men at corporate level in their perception of business ethical situations (Bernardi and Arnold 1997; Bernardi 1994; Fallan 1999; Betz et al. 1989; Ruegger and King 1992). In general, literature shows that there are not discrepancies in the literature that women are more risk averse than men in their business decisions and have a more ethical conduct than men. These gender theories support the intuition that more women in companies' board of directors improve the quality of reported earnings and the reduction of earnings management.

According to Schipper (1989), earnings management is the deliberate intervention in the external financial reporting process with the purpose of obtaining private gains. Hence, the opportunistic managerial behavior is implicit in the management of earnings. Agency theory

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suggests that the lack of efficient corporate governance mechanisms triggers this managerial misconduct (Claessens and Yurtoglu 2013).

The main goal of accounting accruals is to improve the quality of the information reported in the financial statements and to avoid the mismatching between cash flows and the flow of revenues and expenses. However, managers motivated by private interests might engage in the discretionary use of their decision-making power to manipulate or redirect the information reported in the financial statements. Such misbehavior is widely known as earnings manipulation which is reflected in the active use of discretionary accruals (Barth et al. 2001).

Previous research on the relationship between board gender diversity and the capacity of managers to manipulate earnings highlights the relevance of women role in reducing agency conflicts and acting actively as efficient monitors. For instance, Barua et al. (2010) examined the association between chief financial officer gender and the quality of accruals. They concluded that companies with female CFOs have lower performance-matched absolute discretionary accruals and lower absolute accrual estimation errors, confirming in this way the constraints imposed by female monitoring role on managerial opportunistic behavior. In a more contextualized case as is in the UK, Arun et al. (2015) show that firms with a higher number of women as independent directors are more prone to adopt restrained earnings management practices. Similarly, for a sample of firms from Fortune 500 index, Krishnan and Parsons (2008) find that earnings quality is positively associated with gender diversity in senior management; and in the same vein, Srinidhi et al. (2011) find that greater female participation on their boards exhibited higher earnings quality for a sample of US firms. Additionally, Gavious et al. (2012) found evidence of a negative relation between the presence of female directors and earnings management. They conclude that the gender of directors has value implications for analysts and investors, suggesting that there is a positive relation between the proportion of female directors and the firm value. These results are supported by the fact that the unique characteristics of women in business ethics and risk aversion, as discussed earlier, and findings regarding women's motivation and achievement, moral values, social stereotypes and the relation between task performance and self-confidence (Srinidhi et al. 2011; Gul et al. 2009).

Concerning the participation of female board member on specific board committees, Thiruvadi and Huang (2011), using a sample of S&P Small Cap 600, found consistent evidence that the presence of a female director on the audit committee constrains accrual-based earnings management. Female directors are found to have a significant influence on the quality of financial reporting and contribute to the efficacy of corporate governance considerably. Pucheta-Martínez et al. (2016) found that the percentage of female directors on different committees increase the likelihood of further transparency by disclosing audit reports with less uncertainties and scope limitation qualifications. In summary, more diverse board of directors contribute to board effectiveness (Huse and Solberg 2006), enhanced strategic controls (Nielsen and Huse 2010) and corporate social responsibility (Adams and Ferreira 2009), and improvements of earnings forecast (Larelle et al. Forthcoming). Hence, all the previous literature suggests the following research hypothesis:

H1: More female presence in the board of directors leads to less earnings manipulation.

b. *Regulatory environment and board gender diversity*

Legal instruments and voluntary regimes are the two main types of legal instruments used by governments to cut the gender gap in the board of directors of corporations. This section describes the regulatory system concerning board gender diversity among the countries analyzed in this study.

Norway was the first European country to include quotas on top corporate boards in 2003, requiring at least 40.0% of the members to be on each gender for larger boards. For 2015 Norway reached 46.7% of women on board of directors, being the European leader in closing gender gap. The successful implementation of the quota was due mainly to sanctions, the toughest of which was the forced dissolution of noncompliant companies. When there were no sanctions in the initial phase, companies did not widely implement the policy on a voluntary basis (Storvik and Teigen 2010). Italy is another country that issued a law mandating gender quotas for listed companies and for state-owned enterprises. Under the new regulation at least one-third (one-fifth for the first term) of board seats must be held by directors of the less represented gender. This provision has been in force since August 2012

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and is subject to a three-board-terms sunset clause (Bianco et al. 2015), corresponding to a law provision that indicate that it will automatically be terminated after three periods, unless it is extended by law.

On the other side, countries with no quota legislation include Sweden. Its parliament has rejected plans to introduce legislation that would fine listed companies who fail to appoint women to at least 40% of board seats in January 2017. The Swedish Code on Corporate Governance valid for listed private and public limited-liability companies, includes a rule that an equal distribution among the sexes shall be the goal (Numhauser-Henning 2015).

In Denmark in general the policies and legislation implemented aim to ensure flexibility for the companies by not making binding obligations (fixed targets for example) and instead prioritize the principle of self-management by leaving it up to the companies to set their own goals. The new legal framework entered into force on 1 April 2013.

The Good Governance Code of listed companies (CNMV, 2015) in Spain establishes among its principles that director selection policy should seek a balance of knowledge, experience and gender in the board's membership. It also states that companies should also think of including concrete targets to combat the still insufficient presence of women on company boards. Among its recommendations is the one that dictates that the director selection policy should pursue the goal of having at least 30% of total board places occupied by women directors before the year 2020. Although the 3/2007 Equality law gave Spanish public companies and listed firms eight years, that is until 2015, to achieve a representation in their boards of a minimum of 40% and a maximum of 60% of each sex, the absence of sanctions for noncompliant companies weakened the effectiveness of the statutory policy (Lombardo 2015).

Women are widely under-represented in economic decision-making positions in Germany. The Berlin Declaration of 2011 required a binding legal regulation of 30% women on advisory boards of listed, co-determined and public companies (Botsch 2015). Board-level gender quotas were introduced in 2015 by the Act on Equal Participation of Men and Women in Leadership Positions in the Private and the Public Sector. According to this Act, there is a mandatory 30% quota for the underrepresented sex on non-executive boards (Fixed Gender Quota), i.e. supervisory boards or, in one-tiered board structures, administrative boards of

listed corporations that are subject to co-determination (i.e. to employee-participation on these boards). The Act also establishes women quotas individually determined by each affected company (Individual Women Quotas) for the members on its supervisory board, executive board (depending on the type of company) and the two uppermost levels of the management of corporations that are listed or subject to co-determination (or both). Non-compliance with gender quota requirements is sanctioned by empty board seats or administrative fines (Prat and Mueller 2016).

The Act on Equality between women and men in Finland applies only to state-owned companies and requires boards of state-owned companies to have at least 40% of both, men and women. The code of governance requires both genders to be represented on the boards of directors of public limited companies. The Act 31/2014 which amends the Corporate Enterprises Act for the improvement of corporate governance recommends gender diversity when appointing board members must be ensured, facilitating the incorporation of women into the selection process, but does not talk about quotas neither establishes sanctions for infringing law.

Board-level gender quotas were introduced in France by the Act of 27 January 2011 on the Balanced Representation of Women and Men on Governing and Supervisory Boards and on Professional Equality. The act requires that the governing and supervisory boards of companies shall be staffed seeking a balanced representation of women and men. It establishes a mandatory 40% minimum quota of members of each sex on the governing and supervisory boards of companies (mandatory gender quotas). This obligation applies to the boards of private sector listed companies that during three consecutive years employed at least 500 permanents employees and having a net turnover or total assets of at least EUR 50 million. The Act establishes sanctions for infringing law (Prat and Mueller 2016).

The UK has not adopted a quota system for board of directors. Instead, the government-commissioned report published in February 2011[5] by Lord Davies recommended a voluntary, business led framework in which UK listed companies in the FTSE 100 should be aiming for a minimum of 25% female board member representation by 2015 and FTSE 250 to aim for 25% target in longer timeframe. The goal was reached for the FTSE 100.

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[5] https://www.gov.uk/government/news/women-on-boards

Portugal adopted the Government Resolution of 8 March 2012 obliging state-owned companies to adopt gender equality plans aiming, inter alia, at promoting gender balance in management and executive positions. The Government has also recommended that listed companies adopt such plans.[6] Portugal passed law 62/2017, August 1, with the purpose of attaining balanced representation between women and men in the director and supervisory bodies of public sector companies and listed companies. The law requires public and listed companies to have one third of women representation. This new law, to be enforced on January 1, 2018, will see at least 33.3% of women comprising in public and listed companies in Portugal by 2020. To summarize this information, we present the following explanatory Table 1.

Armstrong et al. (2010) find that legal instruments to enforce quotas are an effective and fast means of achieving change. The use of voluntary regimes has led to some increase in the proportion of women on corporate boards, but the effects are significantly smaller and slower, as is the case of Spain. For instance, Gregorič et al. (2017) demonstrate that degree of legal coercion behind the institutional pressure for female directorship is positively associated with the share of women on the board of directors of firms in Denmark, Finland, Sweden, and Norway. They suggest that before the absence of quota laws, as the organizational adaptation to societal expectations for more female directors, it should be supplemented by additional policies to ensure the transparency of board changes.

Hence, it is expected that the legislation and its enforcement concerning companies' board gender diversity is aimed at having more efficient and shareholder-focused boards. Thus, performance enhanced boards through the statutory gender diversity would commit in better monitoring that constraints the management of accounting earnings. For instance, Arun et al. (2015) and Gavious et al. (2012) provide evidence that statutory diversity play an active role in ensuring the quality of reported earnings. In this research, we use a female board member quota as statutory measure of gender diversity, suggesting the following hypothesis:

H2: It is expected less earnings manipulation in countries with quota systems.

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[6] http://ec.europa.eu/justice/gender-equality/files/womenonboards/womenonboards-factsheet-pt_en.pdf

3. Methodology Design

a. Sample

The goal of this study is to analyze the impact of board gender diversity on discretionary accruals as a measure of earnings manipulation, and the moderating effect of statutory female board member quotas. The statistical analysis is conducted with a sample of European companies listed in their respective market indexes. Hence, the sample included annual financial data of companies from Denmark (KFX index), Finland (HEX 25 index), France (CAC index), Germany (DAX index), Italy (IT 30 index), Norway (OBX index), Portugal (PSI 20 index), Spain (IBEX 35 index), Sweden (SE30 index), and United Kingdom (UKX index). The data set comprises financial, market, and ownership structure information for the period from 2007 to 2016 obtained from Thomson Reuters Eikon. The contextual variables were taken from the publicly available information at country level published by the World Bank and the Heritage Foundation. Specifically, we used the government effectiveness index which is one of the composite categories included in the World Governance Indicator according to (Kaufmann et al. 2011), and the Economic Freedom Index of the Heritage Foundation. As usual in empirical analyses, in order to minimize the biases in the final results, we dropped all the companies in technical bankruptcy –with negative total common equity–, those with missing relevant information for the construction of variables, and those within the financial and banking industry since their specific regulation and financial reporting system does not allow to build many of the needed variables for the empirical analysis. Hence, the panel data includes a total of 1,269 firm-year observations, and with an average of 6.6 observations per company –it is a sine qua non condition to run the estimations with a panel data with at least four consecutive years of cross-sections (Arellano and Bond 1991)– as described in Table 1. The sample of firms used in the analysis is representative of the companies in their respective markets. As observed, our sample represents an average of 56.30% of the constituents of the market indexes of the countries considered in the analysis. Obviously, such average is substantially higher if adjusted by excluding in the calculation the financial companies that are part of the market indexes.

b. Methodology

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The econometric strategy is based upon panel data estimations. When using panel data regressions, we face the econometric limitations of unobservable heterogeneity problem (Gormley and Matsa 2014) and the simultaneity or endogeneity problem (Baltagi 2013; Roberts and Whited 2013; Wintoki et al. 2012). The first problem refers to the specific, time-invariant characteristics of each firm (e.g. firm culture, business strategy, internal policies etc.); whilst the endogeneity problem arises because of the imprecision of the direction of the causality between some independent variables and the dependent variable. For instance, the corporate governance features of board diversity impact on the earnings management, but at the same time, earnings manipulation may also impact on the board gender diversity. Therefore, since in this study both gender diversity and the other board features are endogenously determined (Gull et al. 2017), we use a carefully formulated methodology to deal with firm-level differences and endogeneity issues.

The first regression method corresponds to the panel data with fixed effect (FE) specifications to tackle the unobservable heterogeneity problem. Hausman (1978)'s contrast allows us to compare the fixed and the random effects under the null hypothesis that the individual effects are uncorrelated with the other regressors in the model specifications. As exhibited in all the regressions in Table 5, the Hausman test rejects random effects and allows us to accept the existence of time-invariant effects. In addition to the Hauman test, Breush-Pagan contrast is used to check whether the estimated variance of the residuals is dependent on the values of the independent variables (e.g. heteroskedasticity). As a preliminary estimation we found that Breush-Pagan test rejected the absence of firm specific effect, which means that the ordinary least squared (OLS) estimations are inconsistent, and consequently, FE estimations are more suitable. As a post estimation of the FE, we following Greene (2003) and calculate a modified Wald statistic for groupwise heteroskedasticity in the residuals of each fixed effect regression. Additionally, the uncentered variance inflation factor test (VIF) is used to determine the inexistence of autocorrelation problems in the estimations. As observed in the regressions reported in all the tables, the values of VIF do not exceed 2.5 which are often regarded as indicating multicollinearity.

Given that in a minor number of estimations, the null hypothesis of homoskedasticity – distributed as a Chi-squared– was rejected in the fixed effect estimations, we proceeded with the Feasible Generalized Least Squared estimations (F-GLS). This methodology fits panel-

data linear models by using feasible generalized least squares, which allows estimation in the presence of first-order autocorrelation within panels and cross-sectional correlation and heteroskedasticity across panels. We used the F-GLS suitable specifications to correct these econometric problems.

Additionally, we also used panel-corrected standard error (PCSE) estimates which is usually applied for linear cross-sectional time-series models where the parameters are estimated by OLS regression. When computing the standard errors and the variance-covariance estimates with PCSE, it assumes that the disturbances are, by default, heteroskedastic and contemporaneously correlated across panels. In their well-cited paper, Beck and Katz (1995) demonstrated that Feasible Generalized Least Square specifications produce coefficient standard errors that are severely underestimated. Furthermore, by using Monte Carlo experiments, they report that PCSE estimator produces accurate standard error estimates at no or little loss in efficiency compared to F-GLS. However, in a more recent research, Reed and Webb (2010) claim that when the explanatory variables are characterized by substantial persistence –which is not necessarily our case–, the PCSE estimator falls short in comparison to F-GLS. Hence, to minimize the bias in the parameters estimates because of the chosen methodology, the F-GLS and PCSE are simultaneously used as robustness checks of our major findings.

Finally, the panel-data GMM Two-Step System Estimator (GMM) is used to properly control for the endogeneity problems and individual heterogeneity of companies included in our sample (Blundell and Bond 1998). This methodology uses adjusted standard errors for potential heteroskedasticity as a superior estimation method (Blundell and Bond 1998) in comparison with the Dynamic GMM and requires the proper choice of instrument for those variable that are presumably endogenous (Alonso-Borrego and Arellano 1999). Therefore, the choice of instruments is a key decision in handling the endogeneity problem (Bond 2002). According to Arellano (2003), Hsiao (2007) and Baltagi (2013), the advantages that panel data have over time series data or cross-section data refer to greater degrees of freedom, less multicollinearity, and more variation in the data, ultimately resulting in more-efficient estimators.

c. *Variables measurement*

i. *Dependent variable*

The dependent variable corresponds to the earnings management. Given that this critical variable is not perfectly observable, we must use proxy variables, and in doing so we applied three alternative methods used in the empirical literature. All the accrual-based measures of earning management are based upon the magnitude of accruals which proxies the extent to which managers exercise discretion in reporting earnings (Dechow 1994).

We follow Leuz et al. (2003) and Kyaw et al. (2015) for our first measure of earning management ($EM1$), calculated as the operating accruals as:

$$EM1 = \left| \frac{ACC_{it}^{M1}}{OCF_{it}} \right| \tag{1}$$

Where ACC_{it}^{M1} is the total accruals in model 1 calculated as $ACC_{it}^{M1} = (\Delta CA_{it} - \Delta Cash_{it}) - (\Delta CL_{it} - \Delta STD_{it} - \Delta TP_{it}) - DA_{it}$ for the firm i in the period t. Knowing that ΔCA_{it} is the annual change in total current assets, $\Delta Cash_{it}$ is the change in cash and equivalent, ΔCL_{it} is calculated as the change in total current liabilities, ΔSTD_{it} is the change in short-term debt included in current liabilities, ΔTP_{it} is the change in income taxes payable and ΔDA_{it} is the change in depreciation and amortization expenses. The numerator in equation (1) is scaled by OCF_{it} which corresponds to the cash flows from operations to control for differences in firm size and performance.

Our second measure of earnings manipulation corresponds to a cross-sectional model of discretionary accruals based on Dechow et al. (1995). To get the discretionary accruals, the total accruals in model 2 (ACC_{it}^{M2}) are estimated as $ACC_{it}^{M2} = (\Delta CA_{it} - \Delta Cash_{it}) - (\Delta CL_{it} - \Delta STD_{it}) - DA_{it}$. Where all the inputs are the same as those already defined above.

Once the total accruals are calculated, they are split into their non-discretionary and discretionary components. Non-discretionary accruals are aimed to improve the informational content of financial statements. According to Jones (1991)'s model, total accruals are affected by the firm's usual business (which can affect non-cash current assets and liabilities) and by fixed assets (which can affect the depreciation expense). Consequently, ACC_{it}^{M2} are regressed depending on the change in sales ($\Delta Sales_{it}$) and the gross level of

property, plant, and equipment (PPE_{it}) in the following equation, where variables are scaled by one-period lagged total assets (A_{it-1}):

$$\frac{ACC_{it}^{M2}}{A_{it-1}} = \beta_0 + \beta_1 \frac{\Delta Sales_{it}}{A_{it-1}} + \beta_2 \frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it} \qquad (2)$$

Regarding the expected signs for β_1 and β_2 it might be said that this is not trivial, except for β_2. In this case, it is expected that β_2 be negative because depreciation has been included with a negative sign in the definition of total accruals(ACC_{it}^{M2}). However, there is no a clear prediction for the sign of β_1 because, on the one hand, higher level of sales might imply higher accounts receivable but, on the other hand, increases in sales usually imply increases in short-term debt too, so the net effect on the working capital might not be determined a priori.

Hence, the value of ACC_{it}^{M2} is the level of total accruals based on the firm's activity and the composition of the firm's assets. Therefore, the error term (ε_{it}) in that regression, which is the difference between observed and estimated accruals as stated in equation (2), would become the part of total accruals due to the discretionary behavior of managers ($EM2$).

Given that the discretional behavior in earnings management might be used either to increase or reduce the earnings, we follow Gabrielsen et al. (2002) and calculate the absolute value of the second proxy of earnings management ($EM2$) to measure the extent of the discretionary behavior rather than of its direction.

The third measure used of earnings management ($EM3$) is also a cross-sectional model based on discretionary accruals according to Jones (1991)'s model. In this case, the total accruals (ACC_{it}^{M3}) are estimated as:

$$\frac{ACC_{it}^{M3}}{A_{it-1}} = \beta_0 + \beta_1 \frac{\Delta Sales_{it} - \Delta AR_{it}}{A_{it-1}} + \beta_2 \frac{PPE_{it}}{A_{it-1}} + \mu_{it} \qquad (3)$$

Where all the variables are those already described before and ΔAR is the annual change in accounts receivable. Following Cohen et al. (2008), while computing the non-discretional accruals, we adjust the reported revenues on the sample of firms for the change in accounts receivable to capture any potential accounting discretion arising from sale credits. Similarly as before, the measure of discretionary accruals as our third proxy of earnings manipulation ($EM3$) is computed as the difference between total accruals and the fitted non-discretionary

accruals defined corresponding to the residuals (μ_{it}) in (3).

ii. Independent variables

Gender diversity, as the most important independent variable in this study, is estimated in different ways. Typically, we define it as the percentage of women on the board $(GD1)$ which basically represents the share of female members on the total number of board members. Nevertheless, given that a board composed only by male members or female members is characterized by lack of diversity, we follow Martín-Ugedo and Minguez-Vera (2014) and Abad et al. (2017) and use two additional indexed measures of gender diversity that take into account the proportion of both gender categories. These indexed measures correspond to the Blau (1977) Index $(GD2)$ and the Shannon (1948) Index $(GD3)$ of diversification. Blau Index is computed as $GD2 = 1 - \sum_{i=1}^{n} P_i^2$, where P_i corresponds to the proportion of directors in each $n = 2$ gender categories (male and female members). The rage of values of $GD2$ variable is between 0, when there is no gender diversity at all, meaning that there are only male members or female members in the board, and 0.5 when there is equal proportion of male and female members in the board. Shannon Index is calculated with the same inputs as Blau Index as $GD3 = \left| \sum_{i=1}^{n} Ln P_i^{P_i} \right|$. $GD3$ variable takes values between 0, when there is no gender diversification and 0.693 when there is equal proportion of each gender category. This index assumes that $GD3 = 0$ when $P_i = 0$. $G2$ and $GD3$ variables are highly correlated as observed in Table 4, but $GD3$ is more sensitive to small changes in gender diversity that $GD2$ due to its logarithmic transformation (Abad et al. 2017) –as observed when comparing their standard deviations shown in Table 3–. Hence, we look at to these measures as complementary measures of board gender diversity than substitute indicators, and due that, both are used in our estimations.

In addition to these variables of gender diversity, we also considered a dummy covariate to measure the impact of quota systems (QS_{it}) across countries on earnings management to tests our second research hypothesis. Hence, QS_{it} takes value 1 if the country in a certain year had a required quota system as a minimum number of female board members and zero if no-quota is required.

As control variables we included similar information as in previous empirical papers. For instance, we entered the board size ($BSize_{it}$) which is measured as the natural logarithmic transformation of the total number of board members. The number of independent board members ($BIndep_{it}$) as a share of the total number of board members is used to represent the extent to which the board decisions are not influenced by insiders' interest. The proportion of shares in hand of the majority shareholder (Own_{it}) is used as a governance variable to measure the agency problem caused by the separation between ownership and the firm's control. Firm size ($Size_{it}$) is also used as a control variable that corresponds to the logarithmic transformation of the firm's total assets reported. A leverage measure (Lev_{it}) calculated as the total liabilities over total assets is also used. Two market measures are included in the empirical analysis. The widely known proxy of Tobin's Q for growth opportunities (TQ_{it}), on the one hand, and the market-to-book ratio (MTB_{it}), on the other hand. TQ_{it} is computed as the equity market value plus debt at book value, and then everything scaled by the addition of common equity and debt at book value. MTB_{it} variable is calculated as the market capitalization over the total common equity. Another firm-specific characteristic used in the empirical analysis is the Altman (1968)'s Z-score (Z_{it}) as a measure of the firm's default risk, calculated as $Z_{it} = \frac{(1.2WK_{it}+1.4RE_{it}+3.3EBIT_{it}+0.99Sales_{it})}{A_{it}} + \frac{0.6MK_{it}}{TL_{it}}$, where WK_{it} is the working capital, RE_{it} represents the retained earnings, $EBIT_{it}$ is the earnings before interest and taxes or net operating income, $Sales_{it}$ are the total revenues, MK_{it} is thee market capitalization calculated as the number of shares outstanding multiplied by the year-end share price, and A_{it} and TL_{it} are the firm's total assets and the total liabilities, respectively. The return on assets (ROA_{it}) entered the analysis as the net income scaled by total assets.

In addition to this set of firm-level variables, we also controlled for contextual or country-level governance effectiveness variables. We think that there is a cross country heterogeneity that might impact on the extent of the earnings management. Particularly, we used the Worldwide Government Effectiveness Index (WGE_{tc}) which changes over time t and country c. This index is an aggregate indicator that incorporates the following six governance characteristics according to Kaufmann et al. (2011): voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality,

rule of law, and the control of corruption. This indicator rages from -2.5 and 2.5 and takes greater values as the government at country level improves. Additionally, we used the Index of Economic Freedom (IEF_{tc}) as another contextual variable. This measure of economic freedom is based upon twelve quantitative and qualitative factors, grouped into the following four broad categories of economic freedom: rule of law, government size, regulatory efficiency, and open markets. Each of these categories is graded on a scale of 0 to 100, and a country's overall index is derived by averaging the scores. The greater the index, the better the economic freedom and consequently its underlying categories.[7] Finally, time and country dummy variables were used to control for temporal and cross-country fixed effects.

Consequently, based on our hypotheses, we have formulated our multicounty-baseline empirical specification that takes the following form:

$$EM_{itc} = \beta_0 + \beta_1 GD_{itc} + \sum_{j=1}^{J} \gamma_j FLV_{itc} + \sum_{k=1}^{K} \delta_k CLV_{itc} + \eta_i + \mu_t + \varepsilon_{it} \qquad (4)$$

Where EM represents our alternative measures of discretionary accruals as proxies for earnings management, GD summarize the various measures of gender diversity in the board of directors, FLV is the vector of $J = 9$ control, firm-level variables corresponding to the board size ($BSize_{itc}$), board independency ($BIndep_{itc}$), firms' ownership structure (Own_{itc}), company size ($Size_{itc}$), leverage (Lev_{itc}), growth opportunities (TQ_{itc}), market-to-book ratio (MTB_{itc}), firms' default risk (Z_{itc}), and profitability (ROA_{itc}). CLV is a vector which includes the $K = 4$ contextual or country-level covariates like the Worldwide Government Effectiveness Index (WGE_{tc}), the Index of Economic Freedom (IEF_{tc}), and the dummy temporal and country variables. η_i is the individual, firm-specific time invariant effect, μ_t is the time effect, and ε_{it} is the stochastic error term.

4. Results

a. Univariate Analysis

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[7] Visit https://www.heritage.org/index/about for further details about the construction and source of the Index of Economic Freedom.

This section describes the general picture of the variables used in the empirical analysis. Besides the panel composition, Table 2 shows how the three alternative measures of earnings management are exhibited across countries. Portugal, Norway, Germany and Spain are the countries with the highest $EM1$ variable. In the opposite place, with the lowest measure of earnings management ($EM1$) we find Sweden and Denmark. However, regarding EM2 and EM3, we observe that Portugal again is the country with the highest manipulation of financial statements.

We use Table 3 to show basic descriptive statistic of all the variables used in the analysis. First, we test the hypothesis that the mean values of the three alternative measures of earnings management are equal to zero. As observed in Table 3, we reject such null hypothesis at the highest confidence level and consequently accept the fact that their mean values are different from zero. This preliminary result is shown as evidence that managers in our sample of companies discretionally manipulate their results, either by increasing profits or reducing them. This finding is in line with Saona and Muro (2017) and García and Gill-de-Albornoz (2007) for the Latin American and Spanish contexts, respectively.

Concerning the female representation in the board of directors of companies ($GD1$), we observe that in average only 2 out of 10 board members are women, with a maximum representation of less than 6 every 10 board members. Regarding the two other alternative measures of gender diversity, we confirm that the board structures are way below what is considered a balanced or equal representation of both genders. For instance, $GD2$ and $GD3$ have average values of only 0.291 and 0.443, respectively; which are substantially lower than what is considered balanced representation of women and men, corresponding to indexes of 0.50 and 0.693, respectively.

The average number of board members is about 11.26 (exponent calculation of the $BSize$ measure of board size) with only 52.90% of independent members. The ownership structure shows that the majority shareholder holds almost an average of 19.00% of the outstanding shares. A typical company has an average of 65.50% of its total assets financed with debt (Lev) with an average return (ROA) of 4.80% on total assets.

Regarding the two contextual variables used in this study, we observe that the average economic freedom index is around 70 (exponent calculation of the EFI variable), knowing

that this variable goes from 0 to 100 with higher values as economic freedom increases. The second country-level variable used is a measure of government effectiveness (GE) which had an average of 1.50, ranging from -2.50 to 2.50 and with higher values showing better governance levels.

In Table 4 we observe that there are not substantially high correlations among the independent variables except for those that measure the same concept, such as the proxies for the discretionary earnings management, gender diversity, and growth opportunities.

b. Multivariate Analysis

i. The Impact of Gender Diversity on Earnings Management

As mentioned above, several panel-data estimation methods are used to check the robustness of our findings. Tables 5 through 8 displays the results of the equation (4) by using individual fixed-effect estimations (FE), the feasible generalized least square (F-GLS), panel corrected standard error (PCSE) and the generalized method of moment (GMM) with the system estimator. In all these tables, the beneficial effect of the presence of women on the board of director ($GD1$) as a proxy of gender diversity on the earnings management practices of companies appears to be robust across all the specifications. In the same way, our results are consistent and statistically significant by using the three different proxies of earnings management ($EM1$, $EM2$, and $EM3$).

Specifically, Table 5 shows the results of the baseline model using the individual time-invariant effect (FE), in addition to the temporal and country fixed effect. Time fixed-effect accounts for unobservable changes over time, and country fixed effects accounts for country unobserved differences in the sample. The nine alternative regressions are grouped based on the three alternative dependent variables ($EM1$, $EM2$, and $EM3$). These findings are aligned with our first hypothesis and supports the relevance of gender diversity on the board of directors as a mechanism to mitigate corporate earnings management practices. Barua et al. (2010), Srinidhi et al. (2011), Thiruvadi and Huang (2011), for US evidence, found that firms with more women on the board of directors show higher quality earnings. In the same way, Kyaw et al. (2015), for European firms, show that their results highlight the importance of

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female empowerment.

Table 5 reports the specifications with individual time-invariant effects (FE), which help us to tackle the unobservable heterogeneity problem. As observed at the bottom of the table, Hausman test rejects the existence of random effects, and consequently, the individual fixed-effect hypothesis is accepted. All the specifications in Table 5 show a negative and statistically significant relationship of the parameter of $GD1$ with earnings management practices. Estimates in specifications (1) to (3) with an average elasticity of -1.168, meaning that when women participation on the board changes 10%, the associated earnings management amount moves in the opposite direction by 11.7%. It is important to note that the elasticity changes substantially when we consider the other earnings management proxies (see columns 4-9). This negative relationship supports the idea that a higher presence of women on the board of directors constraints earnings management practices in the company. On this respect, there are several arguments that support this negative relationship between the proportion of female board representative and the earnings management practices. For instance, regarding economics psychology arguments, it has been widely demonstrated that female executives are more risk averse than their male counterparties in their financial decisions (Cohn et al. 1975; Riley Jr. and Chow K. 1992) and more cautious and less aggressive in a variety of other decision contexts (Barua et al. 2010; Huang and Kisgen 2013). Concerning the gender of corporate decision makers and accounting conservatism, Francis et al. (2015) observe that, following the hiring of a female executive, there is a significant increase in the degree of accounting conservatism as compared to the degree of their male predecessor. Consequently, the arguments supported by conservatism, caution, less aggressiveness, and risk aversion of female directors strongly support our findings of a negative impact of the proportion of female board members and extent of earnings manipulation.

Additionally, there is another argument concerning the business ethics of female board members that justify our findings. According to Bernardi and Arnold (1997) female decision makers are at a significantly higher average level of moral development than their male counterparties which helps to improve the quality of reported earnings.

Besides, firm characteristics also affect earning management practices (Ye et al. 2010; Barua

et al. 2010). In Table 5, it is observed that firm size and profitability have an effect over the dependent variable. In the first case, firm size has a mixed effect. On the one hand, when the proxy used for earnings management corresponds to the operating accruals ($EM1$), we observe that it increases as the firm dimension increases also. However, on the other hand, when more accurate measures of earnings management are used –such as $EM2$ and $EM3$– which consider the discretionary component of the total accruals rather than just the gross total accruals, bigger firms ($Size$) constraint the managerial discretionary behavior. These findings disclose that the potential opportunistic conduct of managers is mitigated as the company grows. This is in line with the fact that bigger firms are more closely monitored and followed by analysts, reducing the room for potential managerial misbehavior (Hassan and Skinner 2016).

Regarding the firm's profitability (ROA), our results show a negative correlation between this variable and earnings management practices. Managers running more profitable companies have less incentives to overstate the firm performance, and consequently they engage less in manipulating the earnings in one or another direction.

Tables 6 to 8 provides robustness checks of our preliminary results by controlling for the potential skewedness usually observed in using FE specifications due the potential endogeneity problems and the minor problems of heteroskedasticity observed in estimations 1 and 3 in Table 5.[8] Hence, Feasible Generalized Least Squares (F-GLS) specifications are exhibited in Table 6. Panel F-GLS is typically used to perform linear estimations when there is a certain degree of correlation between the residuals in a regression model. Nevertheless, in Table 7 we provide specifications with panel-corrected standard errors (PCSE) as a robustness check for the potential bias in the estimations because of the heteroskedasticity problem. In the widely known experimental research of Beck and Katz (1995), it is suggested that F-GLS outperforms in every near practical research situations and PCSE almost always provides improvement –often dramatic improvement– over F-GLS when it comes to estimating standard errors. Therefore, both F-GLS and PCSE are reported in Tables 6 and 7, respectively.

Finally, Generalized Methods of Moments (GMM) is reported in Table 8 where we

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[8] Detected through the Modified Wald test for groupwise heteroskedasticity.

specifically controlled for those covariates that a priori are considered as endogenous variables. In our case, and following previous empirical literature, $GD1$, $Bsize$, $Bindep$ and Own are considered endogenous variables for which proper instruments are created based on their lagged values.

Therefore, Tables 6 and 7 report comparable results. Specifically speaking, we find further evidence of the negative impact of gender diversity ($GD1$) in the managerial discretionary behavior materialized in earnings management. Another relevant firm-specific characteristic is the company's leverage (Lev) level. The findings indicate that corporate indebtedness exerts a negative influence on the practices of earnings management. This result is supported by the agency theory approach. As argued by Jensen and Meckling (1976), high levels of debt reduce the firm's free cash-flow that otherwise might be used opportunistically by managers in suboptimal decisions such as private rent seeking, exerting a negative impact on discretionary accruals. Similarly, the arguments of the delegate monitoring (Berlin and Loeys 1988) fit with our findings, suggesting that European indexed companies are tightly monitored by financial institutions through restricted debt covenants. This idea is supported by the relevant role played by the financial institutions in civil-law countries, because the more intensive use of bank debt than public debt.

The corporate ownership concentration (Own) is another variable that deserves to be analyzed. Own variable is statistically significant in Table 6 for the estimates that consider the discretionary accruals as proxy for earnings management (e.g. $EM2$ and $EM3$). All the statistically significant estimations (models 4 through 9) show that the managerial discretionary capacity is mitigated as the voting rights of the majority shareholder increase. The existence of concentrated ownership structures contribute to the solution of certain collective action conflicts, such as the free-rider problem, by endowing the majority shareholders with proper incentives for managerial supervision that are not present in the case of minority shareholders (Bergström and Rydqvist 1990). Our results support this reasoning, that majority shareholders reduce the earnings management practices as their voting rights increase. According to the Law and Finance approach, the ownership structure features are not independent from the financial system where companies operate, and these characteristics explain many aspects of the corporate decision-making process (La Porta et al. 1997, 1998; La Porta et al. 1999). With the exception of the UK, all of the countries

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included in our sample belong to the civil-law legal system where the rights of the shareholders are not properly protected (La Porta et al. 1998), which tends to drive greater ownership concentration as substitution mechanisms for weak legal protection of investors' rights (López and Saona 2005). Consequently, our results support the fact that such relatively greater concentration of the ownership leads to better monitoring and lower misreport of the financial information.

Contextual variables such as government effectiveness (GE) and the index of economic freedom (IEF) provide non-conclusive results. For instance, the worldwide governance indicator of government effectivenes (GE) is only significant in the third model of Tables 6 and 7 when the dependent variable corresponds to the total operating accruals ($EM1$). This lukewarm finding suggests that as the governance indicators such as regulatory system and political stability improve at national level, the manipulation of the financial statements increases. This counterintuitive finding might be explained as consequence of

Likewise, when the index of economic freedom (IEF) is used, we also find some weak evidence of this variable on earnings manipulation. In Table 5 for instance, the relationship is negative and statistically significant in model 2, suggesting that as the barrier to international trade, the regulation, and the enforcement of the law improve, there is less room for managers to misreport the financial information. Similar findings are observed in Tables 6 and 7.

In Table 8 we estimate the parameters corresponding to the equation (4) computed with a dynamic panel data by using the Generalized Method of Moments (GMM).

Regression outputs in Table 8 indicate, on the one hand, that the measure of gender diversity ($GD1$) still impacts negative on the overstatement of the financial information measured with the three proxies of earnings management. On the other hand, differently from previous findings, Table 8 provides additional information on the hypothesis of persistency in earnings management practices. As observed in the nine alternative models, none of them report significant coefficient for the one-period lagged dependent variable, and consequently, we reject the persistency of the earnings manipulation in the context of selected European corporations. The remaining results in Table 8 can be used as robustness checks for our previous findings.

Finally, in Table 9 we used our two alternatives and more suitable measures of gender diversity (see $GD2$ and $GD3$ variables). For space saving reasons, we recurred only to the results based on the dynamic panel data, but all the other specifications (FE, F-GSL and PCSE) were also computed and their results remained consistent with those already shown in Table 9. The results shown in Table 9 confirm the negative relation between gender diversity and EM practices, like observed in the previous tables. The main idea extracted from this table is that equilibrated diversity in the board have a discourage effect over EM practices, benefiting earnings quality reported. In this case, and following Blau (1977), Shannon (1948), Abad et al. (2017), Martín-Ugedo and Minguez-Vera (2014) and Baumgärtner (2006), our gender measures are more than just women on board measures, these are rather diversity measures, making reference to equilibrated board in terms of women/men presence.

Related to the others independent variables, the results hold.

All the arguments presented in previous tables from multivariate analysis, confirm that more female presence at the board of directors will lead to less earnings manipulation, consistent with the hypothesis 1.

ii. The impact of Female Quotas on Earnings Management

This part of the analysis is focused on assessing how the extent to which female quotas on the board of director stated by law or corporate governance codes across countries impact on the earnings management.

Table 10 has been developed considering the interacted relation between gender diversity and quotas and their joint impact on the earnings management. In regressions 3 through 6 for $GD2$ and in regressions 9 to 12 for $GD3$, the lineal combination between gender diversity measures and quotas recommendations ($GD2 + GD2 * Quota$ and $GD2 + GD2 * Quota$) show significant coefficients and with a greater economic impact than the stand-alone gender diversity measures ($GD2$ and $GD3$, respectively). Hence, this table shows evidence supporting the female quotas indications passed in the last decades in some countries in Europe as means to increase financial reporting transparency. We can state, therefore, that in countries where female quota indications (by law or recommendation) exists, the impact of

gender diversity has been more prominent in diminishing earnings manipulation practices than in countries where this kind of recommendations do not exist. Therefore, the efforts in carrying out these measures in European countries have helped to constraint active earnings manipulation, consistent with the hypothesis 2.

5. Conclusions

This paper studies how board gender diversity influences the managerial opportunistic behavior. Specifically, we analyze the impact of board gender diversity as instrument of corporate governance in mitigating the earnings management practices in some selected European countries.

Our results confirm the benefits of having a balanced board in terms of gender diversity. In fact, the presence of female members mitigates earnings management practices. Moreover, the results show the relevance of legislations concerning the application of female quotas on boards in Europe.

Specifically, the results shed some light on two important aspects. First, the benefit of having a balanced board between men and women directors, because balanced board tend to reduce or mitigate earning management practices. Second, the beneficial effect of equilibrated boards, exposed in this first point, is even more relevant in countries that have required female quotas on board of directors. The effort in carrying out this measure in European countries have led to less overstatement of the financial reports.

This study provides evidence of the critical role played by laws and corporate governance codes that foster the active participation of female directors on corporate boards. Women on corporate positions mitigate the managerial opportunistic behavior, as has been demonstrate in this study.

Therefore, we conclude that it is necessary for the European governments, institutions, and policy makers to develop policies that promote legal frameworks in favor of quota systems

with the corresponding sanctions. The enforcement of the law might eliminate the gender gap in decision making positions, which eventually will decrease managers' discretionary power, measures need to be taken to promote equality between men and women in boards, contributing to reach one of the founding values of the European Union.

This work might be extended towards other countries besides Europe. We have focused our analysis of some selected listed European firms, but many other countries in the region have not been exposed to empirical analysis. A possible future research line would be a comparative analysis of Europe versus less developed institutional contexts.

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TABLE 1. Gender Diversity Gap and Quotas

Country	Gender gap index WEF	Quota/No quota for private companies	Effective since when	Sanctions	Legal Origin	2017-91
Norway	0.83	Yes-2003	2005	Yes	Civil-law	44.0
Italy	0.692	Yes-2011	2012	Yes	Civil-law	32.9
Sweden	0.816	No	-	-	Civil-law	35.5
Denmark	0.776	No	-	-	Civil-law	28.0
Spain	0.746	Yes-2007	2015	No	Civil-law	21.5
Germany	0.778	Yes	2016	Yes	Civil-law	29.7
Finland	0.823	No	-	-	Civil-law	32.3
Portugal	0.734	Yes - 2017	2018	Yes	Civil-law	15.5
France	0.778	Yes-2011	2017	Yes	Civil-law	42.1
UK	0.770	No. Davies report 2011	-	-	Common-law	27.7

TABLE 2. Panel Composition

Country	EM1	EM2	EM3	% on Index	Observations		Companies		Average Obs. per Company
					N	(%)	N	(%)	
DIN	0.509	0.043	0.034	75.00	78	6.15	15	7.81	5.2
ESP	0.963	0.038	0.034	65.71	179	14.11	23	11.98	7.8
FIN	0.711	0.037	0.037	84.00	148	11.66	21	10.94	7.0
FR	0.569	0.026	0.028	50.00	124	9.77	20	10.42	6.2
GER	1.002	0.037	0.031	53.33	112	8.83	16	8.33	7.0
ITA	0.766	0.042	0.038	40.00	107	8.43	12	6.25	8.9
NOR	1.049	0.051	0.041	48.00	73	5.75	12	6.25	6.1
PORT	1.089	0.046	0.046	40.00	59	4.65	8	4.17	7.4
SWEDEN	0.425	0.034	0.033	60.00	91	7.17	18	9.38	5.1
UK	0.691	0.035	0.030	47.00	298	23.48	47	24.48	6.3
Total	0.760	0.037	0.033	56.30	1,269	100.00	192	100.00	6.6

TABLE 3. Descriptive Statistics

	Variable	Mean	Std. Dev.	Min	Max
EM2	EM1	0.760***	1.256	0.017	7.378
EM4	EM2	0.037***	0.040	>0.000	0.241
EM5	EM3	0.033***	0.069	>0.000	0.282
womenboard	GD1	0.203	0.130	0.000	0.571
gd2	GD2	0.291	0.153	0.000	0.500
gd3	GD3	0.443	0.209	0.000	0.693
boardsize	Bsize	2.422	0.314	1.386	3.219
indepboard	Bindep	0.529	0.248	0.000	1.000
own1	Own	0.187	0.172	0.012	1.000
wsize	Size	23.134	1.360	19.154	27.220
tobinq	TQ	1.664	1.100	0.547	19.927
wmtb	MTB	3.112	3.253	0.065	22.207
tdta	Lev	0.655	0.162	0.022	0.995
z	Z	2.889	1.993	0.552	14.662
roa	ROA	0.048	0.067	-0.395	0.334
econindex	IEF	4.260	0.077	4.074	4.381
ge	GE	1.503	0.462	0.198	2.354

TABLE 4. Correlation Matrix

	Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	EM1	1.000															
2	EM2	0.415	1.000														
3	EM3	0.415	0.999	1.000													
4	GD1	-0.128	-0.077	-0.076	1.000												
5	GD2	-0.133	-0.102	-0.100	0.970	1.000											
6	GD3	-0.132	-0.107	-0.105	0.938	0.992	1.000										
7	Bsize	0.053	-0.076	-0.077	-0.129	-0.110	-0.091	1.000									
8	Bindep	-0.091	-0.053	-0.053	0.190	0.194	0.196	-0.415	1.000								
9	Own	-0.014	0.013	0.011	-0.039	-0.090	-0.114	0.094	-0.209	1.000							
10	Size	0.044	-0.181	-0.182	-0.037	-0.031	-0.024	0.360	-0.168	0.018	1.000						
11	TQ	-0.158	0.038	0.037	0.070	0.095	0.099	-0.249	0.065	0.009	-0.392	1.000					
12	MTB	-0.102	0.041	0.041	0.045	0.064	0.066	-0.169	0.045	-0.103	-0.280	0.688	1.000				
13	Lev	0.170	-0.033	-0.033	-0.191	-0.196	-0.192	0.337	-0.194	-0.084	0.334	-0.255	0.186	1.000			
14	Z	-0.161	0.047	0.047	0.094	0.130	0.137	-0.341	0.111	-0.011	-0.449	0.168	0.416	-0.572	1.000		
15	ROA	-0.285	-0.005	-0.007	0.050	0.072	0.078	-0.219	0.128	-0.036	-0.236	0.586	0.409	-0.310	0.596	1.000	
16	IEF	-0.026	0.004	0.005	0.058	0.113	0.134	-0.346	0.124	-0.344	-0.232	0.234	0.251	-0.167	0.248	0.207	1.000
17	GE	-0.035	-0.015	-0.014	0.295	0.325	0.332	-0.401	0.197	-0.284	-0.312	0.160	0.094	-0.323	0.268	0.169	0.715

TABLE 5. Women on Board and Earnings Management (OLS-FE Regressions)

VARIABLES	(1) EM1	(2)	(3)	(4) EM2	(5)	(6)	(7) EM3	(8)	(9)
GD1	-1.1853***	-1.1938***	-1.1255***	-0.0362***	-0.0235*	-0.0237*	-0.0377***	-0.0254*	-0.0255*
	(-3.1849)	(-3.0734)	(-2.9130)	(-2.7641)	(-1.7402)	(-1.7702)	(-2.8702)	(-1.8735)	(-1.9005)
Bsize	0.0766	0.0547	0.0381	-0.0065	-0.0105	-0.0107	-0.0079	-0.0117	-0.0118
	(0.3198)	(0.2099)	(0.1462)	(-0.7662)	(-1.1674)	(-1.1818)	(-0.9241)	(-1.2854)	(-1.2978)
Bindep		0.2584	0.3114		0.0001	0.0001		0.0007	0.0007
		(0.9869)	(1.1959)		(0.0113)	(0.0080)		(0.0772)	(0.0779)
Own	0.5745	0.6053	0.5502	0.0108	0.0118	0.0116	0.0091	0.0099	0.0098
	(1.2243)	(1.2194)	(1.1084)	(0.6483)	(0.6756)	(0.6686)	(0.5440)	(0.5680)	(0.5592)
Size	0.1998*	0.2520**	0.2826**	-0.0070*	-0.0079*	-0.0079*	-0.0065	-0.0073*	-0.0073*
	(1.7493)	(2.0818)	(2.3597)	(-1.7416)	(-1.8629)	(-1.8972)	(-1.6070)	(-1.7156)	(-1.7445)
TQ	0.0731			0.0066			0.0065		
	(0.6316)			(1.6282)			(1.5934)		
MTB		0.0218	0.0228		0.0003	0.0003		0.0004	0.0004
		(0.9741)	(1.0193)		(0.4434)	(0.4435)		(0.4653)	(0.4658)
Lev	-0.2034	-0.3640	-0.4228	0.0058	0.0034	0.0032	0.0019	-0.0019	-0.0021
	(-0.3317)	(-0.5452)	(-0.6331)	(0.2635)	(0.1440)	(0.1336)	(0.0842)	(-0.0780)	(-0.0888)
Z	-0.0112	-0.0062	0.0051	-0.0019	-0.0011	-0.0010	-0.0019	-0.0012	-0.0011
	(-0.1774)	(-0.1237)	(0.1029)	(-0.8334)	(-0.6214)	(-0.5888)	(-0.8475)	(-0.6678)	(-0.6336)
ROA	-2.7048***	-2.5408***	-2.5462***	-0.0106	-0.0070	-0.0070	-0.0073	-0.0035	-0.0034
	(-4.7425)	(-4.3921)	(-4.3971)	(-0.4898)	(-0.3290)	(-0.3278)	(-0.3252)	(-0.1577)	(-0.1541)
IEF		-3.2877*			-0.0022			-0.0042	
		(-1.9128)			(-0.0357)			(-0.0676)	
GE			0.3841			0.0041			0.0041
			(1.2663)			(0.3924)			(0.3930)
Constant	-3.7545	9.0725	-6.2012**	0.2137**	0.2570	0.2426**	0.2083**	0.2585	0.2351**
	(-1.4121)	(1.1007)	(-2.2256)	(2.2796)	(0.8632)	(2.5196)	(2.2145)	(0.8626)	(2.4337)
Observations	1,269	1,207	1,207	1,245	1,180	1,180	1,233	1,168	1,168
Number of iden	192	190	190	192	191	191	190	189	189
Sigma u	1.111	1.163	1.123	0.0291	0.0282	0.0285	0.0293	0.0284	0.0287
Sigma e	0.970	0.964	0.965	0.0343	0.0333	0.0333	0.0343	0.0333	0.0333
Rho	0.567	0.592	0.575	0.420	0.418	0.422	0.423	0.422	0.426
F-test	4.342***	3.976***	3.951***	3.164***	3.054***	3.043***	3.206***	3.093***	3.082***
Hausman-test	19.52**	26.46***	31.60***	19.27***	40.12***	18.52**	32.02***	25.88***	33.29***
Mean VIF	1.60	1.24	1.87	1.19	1.95	1.60	1.21	1.33	1.41

This table shows the regression results with firm fixed-effect. Year and country controls were included in the models.
Robust standard errors in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels,
respectively.

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TABLE 6. Women on Board and Earnings Management (F-GLS Regressions)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		EM1			EM2			EM3
GD1	-0.2253**	-0.2576**	-0.2182*	-0.0241***	-0.0312***	-0.0199***	-0.0234***	-0.0099
	(-1.9972)	(-2.2065)	(-1.8738)	(-3.7116)	(-5.6836)	(-3.2330)	(-3.5794)	(-1.2565
Bsize	-0.0388	-0.0624	-0.0480	0.0019	-0.0002	-0.0022	0.0014	-0.0057
	(-0.6888)	(-1.0000)	(-0.7819)	(0.5747)	(-0.0679)	(-0.6703)	(0.4329)	(-1.3597
Bindep		-0.0296	-0.0250		-0.0045	-0.0048		-0.0065
		(-0.4187)	(-0.3504)		(-1.1721)	(-1.1512)		(-1.3538
Own	-0.0809	-0.0439	-0.0735	-0.0141***	-0.0121***	-0.0144***	-0.0152***	-0.0168*
	(-0.8911)	(-0.4572)	(-0.7687)	(-2.7391)	(-2.8620)	(-2.7791)	(-2.9351)	(-2.4064
Size	0.0287**	0.0329**	0.0297**	-0.0029***	-0.0031***	-0.0027***	-0.0029***	-0.0017
	(2.1070)	(2.3081)	(2.0976)	(-3.4994)	(-4.6163)	(-3.2424)	(-3.4282)	(-1.3882
TQ	-0.0414*			-0.0015			-0.0018	
	(-1.7337)			(-0.8743)			(-1.0645)	
MTB		-0.0052	-0.0070		0.0004	-0.0002		-0.0007
		(-1.0707)	(-1.3987)		(1.5663)	(-0.4991)		(-1.8647
Lev	0.1451	0.1440	0.1205	0.0207***	0.0050	0.0142**	0.0218***	0.0241*
	(1.1104)	(0.9916)	(0.8056)	(3.0201)	(0.8119)	(1.9826)	(3.1615)	(2.4654
Z	0.0187	0.0042	0.0059	0.0019**	0.0005	0.0012*	0.0020**	0.0018*
	(1.3328)	(0.4212)	(0.5741)	(2.1029)	(1.0312)	(1.8224)	(2.1764)	(2.1748
ROA	-2.4336***	-2.3560***	-2.3262***	-0.0030	0.0004	-0.0055	0.0046	0.0025
	(-10.9828)	(-10.5435)	(-10.3033)	(-0.2254)	(0.0239)	(-0.4071)	(0.3428)	(0.1995
IEF		-0.9463*			0.0721***			0.0188
		(-1.6647)			(2.8184)			(0.4601
GE			0.2528**			0.0010		
			(2.3881)			(0.1381)		
Constant	-0.0132	4.0705	-0.4812	0.0909***	-0.1986*	0.0997***	0.0904***	-0.0048
	(-0.0432)	(1.6285)	(-1.2717)	(4.7397)	(-1.8272)	(4.2904)	(4.6583)	(-0.0264
Observations	1,253	1,192	1,192	1,230	1,165	1,165	1,217	1,152
Number of iden	176	175	175	177	176	176	174	173
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Wald-test	278	277.2	253.7	121.5	273.5	142.5	121.3	54.58
Mean VIF	1.63	1.54	1.66	1.89	1.84	1.35	1.71	2.12

This table shows the regression results with firm fixed-effect. The variable definitions are in the Appendix A. Year and country controls were included in the model 1 to 9. Robust standard errors in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively.

TABLE 7. Women on Board and Earnings Management (PCSE Regressions)

VARIABLES	(1)	(2) EM1	(3)	(4)	(5) EM2	(6)	(7)	(8) EM
% women on board	-1.4273***	-1.3910***	-1.3221***	-0.0338***	-0.0368***	-0.0380***	-0.0341***	-0.03
	(-4.5378)	(-4.2389)	(-3.9853)	(-3.5772)	(-3.6243)	(-3.8799)	(-3.5231)	(-3.5
BoardSize	-0.0378	-0.0255	-0.0134	-0.0007	-0.0081	-0.0078	-0.0006	-0.0
	(-0.2012)	(-0.1217)	(-0.0647)	(-0.1421)	(-1.5004)	(-1.4432)	(-0.1190)	(-1.4
Bindep		0.2091	0.2155		-0.0029	-0.0033		-0.0
		(1.0808)	(1.1186)		(-0.4788)	(-0.5581)		(-0.5
Own	-0.0194	-0.1783	-0.1868	-0.0027	-0.0069	-0.0060	-0.0030	-0.0
	(-0.0722)	(-0.6081)	(-0.6690)	(-0.3690)	(-0.8542)	(-0.7559)	(-0.4199)	(-0.8
Size	-0.0182	-0.0322	-0.0267	-0.0061***	-0.0052***	-0.0052***	-0.0064***	-0.005
	(-0.4869)	(-0.7812)	(-0.6582)	(-4.8618)	(-4.1271)	(-4.1934)	(-5.1532)	(-4.4
TQ	-0.2256***			-0.0021			-0.0024	
	(-3.7563)			(-0.9435)			(-1.0846)	
MTB		-0.0447***	-0.0427***		0.0003	0.0003		0.0
		(-3.3197)	(-3.2653)		(0.5149)	(0.4951)		(0.49
Lev	1.7767***	1.9250***	1.8891***	0.0198*	0.0015	0.0015	0.0212**	0.0
	(4.5385)	(4.2782)	(4.2219)	(1.9352)	(0.1364)	(0.1343)	(1.9985)	(0.2
Z	0.0905***	0.0287	0.0315	0.0015	-0.0002	-0.0002	0.0016	-0.0
	(2.5903)	(1.1314)	(1.2365)	(1.0897)	(-0.1900)	(-0.1939)	(1.1528)	(-0.2
ROA	-3.4321***	-3.3225***	-3.2702***	-0.0211	-0.0245	-0.0238	-0.0149	-0.0
	(-6.3653)	(-5.9060)	(-5.8522)	(-1.1594)	(-1.2865)	(-1.2298)	(-0.7969)	(-0.9
IEF		-3.0647			0.0376			0.0
		(-1.5789)			(0.6275)			(0.5
GE			0.7777**			0.0091		
			(2.2954)			(0.9335)		
Constant	0.8906	14.2371*	-0.7746	0.1781***	0.0281	0.1739***	0.1841***	0.0
	(1.0378)	(1.6766)	(-0.6869)	(6.0332)	(0.1054)	(4.7811)	(6.1875)	(0.1
Observations	1,269	1,207	1,207	1,245	1,180	1,180	1,233	1,1
R-squared	0.244	0.249	0.2542	0.258	0.2766	0.2769	0.251	0.2
Number of iden	192	190	190	192	191	191	190	18
Year FE	YES	YES	YES	YES	YES	YES	YES	YE
Country FE	YES	YES	YES	YES	YES	YES	YES	YE
Wald-test	133.3	128.9	134.1	100.7	89.65	91.34	105	92
Mean VIF	1.63	1.54	1.66	1.89	1.84	2.35	1.71	1.

This table shows the regression results with firm fixed-effect. The variable definitions are in the Appendix A. Year
and country controls were included in the model 1 to 9. Robust standard errors in parentheses. *, **, and *** indicate
significance at the 10%, 5% and 1% levels, respectively

TABLE 8. Women on Board and Earnings Management (GMM Regressions)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		EM1			EM2			EM3
$EM1_{t-1}$	0.0886	0.0400	0.0424					
	(1.2302)	(0.5705)	(0.5967)					
$EM2_{t-1}$				0.0612	0.0023	0.0043		
				(0.5997)	(0.0227)	(0.0427)		
$EM3_{t-1}$							0.0651	0.0063
							(0.6244)	(0.0623)
GD1	-1.8491**	-1.4834**	-1.4418**	-0.0554*	-0.0596**	-0.0588**	-0.0532*	-0.0575*
	(-2.4014)	(-2.1620)	(-2.1523)	(-1.7646)	(-2.0083)	(-2.0131)	(-1.6693)	(-1.9145)
Bsize	-0.2451	-0.1338	-0.1283	-0.0315**	-0.0253*	-0.0253*	-0.0317**	-0.0251*
	(-0.7726)	(-0.4547)	(-0.4369)	(-2.1150)	(-1.6959)	(-1.6686)	(-2.1297)	(-1.6757)
Bindep		-0.2479	-0.2828		-0.0080	-0.0083		-0.0086
		(-0.7312)	(-0.8131)		(-0.4990)	(-0.5122)		(-0.5278)
Own	-1.6057	-2.2091*	-2.2040*	0.0025	-0.0145	-0.0138	0.0041	-0.0139
	(-1.3854)	(-1.8319)	(-1.8245)	(0.0758)	(-0.3926)	(-0.3706)	(0.1243)	(-0.3743)
ROA	-3.1977***	-3.3486***	-3.3285***	-0.0470	-0.0405	-0.0413	-0.0475	-0.0394
	(-2.9791)	(-3.1531)	(-3.0986)	(-1.5972)	(-1.3619)	(-1.3876)	(-1.5353)	(-1.2642)
Size	-0.2057	0.0560	0.1066	-0.0003	-0.0030	-0.0033	-0.0001	-0.0045
	(-0.5729)	(0.2027)	(0.3888)	(-0.0302)	(-0.2563)	(-0.2817)	(-0.0092)	(-0.3714)
TQ	0.1075			0.0034			0.0034	
	(0.7342)			(0.5171)			(0.5084)	
MTB		0.0290	0.0279		-0.0002	-0.0002		-0.0003
		(1.2170)	(1.2089)		(-0.2400)	(-0.2590)		(-0.2723)
Lev	-1.6010	-2.6377**	-2.6875**	-0.0874***	-0.0776**	-0.0758**	-0.0906***	-0.0795**
	(-1.6358)	(-2.3672)	(-2.4385)	(-2.5796)	(-2.0864)	(-2.0166)	(-2.6092)	(-2.0712)
Z	-0.1114	-0.1475*	-0.1415*	-0.0034	-0.0019	-0.0021	-0.0033	-0.0019
	(-1.1506)	(-1.8295)	(-1.8973)	(-1.2083)	(-0.8819)	(-0.9498)	(-1.1723)	(-0.8636)
IEF		-3.7519*			0.0125			-0.0037
		(-1.6459)			(0.1230)			(-0.0362)
GE			0.0061			-0.0077		
			(0.0110)			(-0.4480)		
Observations	862	824	824	751	714	714	747	710
Number of iden	167	166	166	165	164	164	163	162
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Wald-test	30.21	32.34	31.77	20.58	22.14	21.99	20.34	21.67
Mean VIF	1.33	1.36	1.40	1.28	1.77	1.38	1.31	1.20

This table shows the regression results with firm fixed-effect. The variable definitions are in the Appendix A. Year and country controls were included in the model 1 to 9. Robust standard errors in parentheses. *, **, and *** indicate significance at the 10%, 5% and 1% levels, respectively

TABLE 9. Gender Diversity and Earnings Management (GMM Regressions)

VARIABLES	(1) EM1	(2) EM1	(3) EM2	(4) EM2	(5) EM3	(6) EM3	(7) EM1	(8 EM
EM1$_{t-1}$	0.0287	0.0309					0.0255	0.02
	(0.4205)	(0.4478)					(0.3783)	(0.40
EM2$_{t-1}$			-0.0097	-0.0078				
			(-0.0990)	(-0.0794)				
EM3$_{t-1}$					-0.0057	-0.0047		
					(-0.0575)	(-0.0472)		
GD2	-1.4012**	-1.3714**	-0.0655**	-0.0645**	-0.0637**	-0.0627**		
	(-2.2231)	(-2.2306)	(-2.5365)	(-2.5543)	(-2.4348)	(-2.4502)		
GD3							-1.0673**	-1.048
							(-2.2418)	(-2.24
Bsize	-0.1336	-0.1268	-0.0253*	-0.0252*	-0.0250*	-0.0248	-0.1263	-0.11
	(-0.4493)	(-0.4286)	(-1.6920)	(-1.6593)	(-1.6669)	(-1.6290)	(-0.4227)	(-0.39
Bindep	-0.2454	-0.2856	-0.0083	-0.0087	-0.0089	-0.0093	-0.2520	-0.29
	(-0.7293)	(-0.8231)	(-0.5137)	(-0.5342)	(-0.5433)	(-0.5652)	(-0.7439)	(-0.84
Own	-2.1942*	-2.2003*	-0.0151	-0.0145	-0.0143	-0.0142	-2.1948*	-2.20
	(-1.8455)	(-1.8502)	(-0.4075)	(-0.3902)	(-0.3850)	(-0.3796)	(-1.8647)	(-1.86
ROA	-3.3243***	-3.3025***	-0.0392	-0.0401	-0.0380	-0.0390	-3.2992***	-3.277
	(-3.1552)	(-3.0971)	(-1.3324)	(-1.3604)	(-1.2337)	(-1.2632)	(-3.1410)	(-3.08
Size	0.0817	0.1366	-0.0005	-0.0007	-0.0020	-0.0019	0.0797	0.13
	(0.2927)	(0.4937)	(-0.0475)	(-0.0620)	(-0.1686)	(-0.1668)	(0.2832)	(0.48
Lev	-2.6592**	-2.7133**	-0.0824**	-0.0807**	-0.0841**	-0.0831**	-2.6438**	-2.698
	(-2.3800)	(-2.4592)	(-2.2191)	(-2.1590)	(-2.1946)	(-2.1520)	(-2.3596)	(-2.44
Z	-0.1426*	-0.1354*	-0.0020	-0.0021	-0.0020	-0.0020	-0.1402*	-0.13
	(-1.7922)	(-1.8530)	(-0.9157)	(-0.9643)	(-0.8910)	(-0.9298)	(-1.7704)	(-1.82
MTB	0.0295	0.0283	-0.0001	-0.0001	-0.0001	-0.0001	0.0297	0.02
	(1.2378)	(1.2261)	(-0.0724)	(-0.0974)	(-0.1014)	(-0.1242)	(1.2478)	(1.23
IEF	-3.9733*		0.0020		-0.0150		-3.9603*	
	(-1.7398)		(0.0196)		(-0.1446)		(-1.7581)	
GE		0.0463		-0.0059		-0.0048		0.06
		(0.0835)		(-0.3451)		(-0.2834)		(0.11
Observations	824	824	714	714	710	710	824	82
Number of iden	166	166	164	164	162	162	166	16
Year FE	YES	YES	YES	YES	YES	YES	YES	YE
Country FE	YES	YES	YES	YES	YES	YES	YES	YE
Wald-test	32.77	31.97	26.43	26.37	25.60	25.73	32.95	32.0
Mean VIF	1.75	1.97	1.78	2.28	1.92	1.19	1.79	1.7

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TABLE 10. Gender Diversity and Quotas and Earnings Management (GMM Regressions)

VARIABLES	(1) EM2	(2) EM2	(3) EM4	(4) EM4	(5) EM5	(6) EM5	(7) EM2	(8) EM
$EM1_{t-1}$	0.0240	0.0261					0.0213	0.023
	(0.3563)	(0.3828)					(0.3208)	(0.346
$EM2_{t-1}$			-0.0222	-0.0203				
			(-0.2290)	(-0.2089)				
$EM3_{t-1}$					-0.0182	-0.0172		
					(-0.1845)	(-0.1734)		
GD2	-1.6467**	-1.5594**	-0.0604**	-0.0604**	-0.0592**	-0.0590**		
	(-2.3466)	(-2.2401)	(-2.2166)	(-2.2809)	(-2.1460)	(-2.2008)		
GD2*Quota	0.4971	0.3825	-0.0126	-0.0107	-0.0109	-0.0095		
	(0.9477)	(0.7201)	(-0.6859)	(-0.6157)	(-0.5920)	(-0.5512)		
*GD2 + GD2*Quota*	-1.1496	-1.1769	-0.0731*	-0.0711**	-0.0701**	-0.0685*		
GD3							-1.2348**	-1.176
							(-2.3748)	(-2.28
GD3*Quota							0.3405	0.265
							(0.9557)	(0.739
*GD3 + GD3*Quota*							-0.8943	-0.91
Bsize	-0.0599	-0.0671	-0.0273*	-0.0271*	-0.0268*	-0.0265*	-0.0500	-0.05
	(-0.1987)	(-0.2217)	(-1.8156)	(-1.7818)	(-1.7764)	(-1.7422)	(-0.1646)	(-0.18
Bindep	-0.2690	-0.2832	-0.0080	-0.0079	-0.0085	-0.0085	-0.2712	-0.28
	(-0.8034)	(-0.8210)	(-0.4955)	(-0.4927)	(-0.5254)	(-0.5231)	(-0.8045)	(-0.82
Own	-2.1532*	-2.1695*	-0.0148	-0.0144	-0.0139	-0.0140	-2.1443*	-2.163
	(-1.8090)	(-1.8252)	(-0.4026)	(-0.3900)	(-0.3783)	(-0.3774)	(-1.8172)	(-1.83
ROA	-3.3038***	-3.2665***	-0.0380	-0.0385	-0.0367	-0.0372	-3.2768***	-3.2415
	(-3.1989)	(-3.1319)	(-1.2920)	(-1.3086)	(-1.1915)	(-1.2098)	(-3.1822)	(-3.11
Size	0.0669	0.1354	0.0002	-0.0002	-0.0013	-0.0015	0.0619	0.13
	(0.2348)	(0.4844)	(0.0208)	(-0.0155)	(-0.1113)	(-0.1273)	(0.2152)	(0.463
Lev	-2.6373**	-2.6961**	-0.0838**	-0.0823**	-0.0857**	-0.0849**	-2.6205**	-2.678
	(-2.3307)	(-2.4289)	(-2.2845)	(-2.2201)	(-2.2612)	(-2.2152)	(-2.3116)	(-2.41
Z	-0.1475*	-0.1386*	-0.0020	-0.0022	-0.0020	-0.0021	-0.1454*	-0.136
	(-1.8129)	(-1.8725)	(-0.9124)	(-0.9952)	(-0.8974)	(-0.9693)	(-1.7934)	(-1.84
MTB	0.0290	0.0281	0.0000	0.0000	-0.0000	-0.0000	0.0290	0.028
	(1.2204)	(1.2167)	(0.0277)	(0.0103)	(-0.0025)	(-0.0150)	(1.2229)	(1.219
IEF	-4.3286*		0.0186		0.0004		-4.3050*	
	(-1.8594)		(0.1722)		(0.0037)		(-1.8710)	
GE		-0.0209		-0.0086		-0.0076		-0.00
		(-0.0385)		(-0.5002)		(-0.4468)		(-0.01
Observations	824	824	714	714	710	710	824	824
Number of iden	166	166	164	164	162	162	166	166
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Country FE	YES	YES	YES	YES	YES	YES	YES	YES
Wald-test	32.54	31.78	28.46	28.57	27.12	27.40	32.94	31.9
Mean VIF	1.34	1.29	1.73	1.17	1.70	1.04	1.28	1.30