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The Role of Ownership and Gender on Firms' Performance: Evidence from Portugal**

Abstract

This work aims to examine the relationship between corporate governance (CG) and corporate performance, considering the effect of the COVID-19 pandemic. We consider a sample of Portuguese-listed firms for the period between 2010 and 2020 using a panel data methodology. The main results show that higher levels of managerial ownership and gender diversity may drive higher firm performance. However, no evidence was found that a representation of three or more female directors leads to an increase in performance. Moreover, the results suggest that there is a negative relationship between leverage and performance when we consider a market-based performance measure. Finally, the study found evidence that the COVID-19 pandemic had a negative impact on corporate performance. This study sheds light on the role of ownership and gender on firms' performance. The results of this research can have some implications for academia and policymakers' decisions.

Keywords: corporate governance, board of directors, gender, performance
(JEL: G32, G34, J16, L25)

Introduction

The CG is the mechanism to protect investors in markets around the world (Vieira & Neiva, 2019) and is usually described as "the system by which companies are directed and controlled" (Cadbury, 1992, p. 14). Following several financial scandals of American and European giants, it became obvious that there was a need to start assigning responsibilities and tightening control measures and financial reports since concerns regarding the apparent low level of confidence in the company's financial reporting and the inability of auditors to protect the stakeholders had been growing (Cadbury, 1992).

CG variables may play a role in the firm's performance. Indeed, there are several studies finding evidence that CG influences the business's performance (Morck et al., 1988; Lehmann & Weigand, 2000; Kapopoulos & Lazaretou, 2007; Fauzi & Locke, 2012; Hirvelä, 2019; Ramadan & Hassan, 2021). However, the results

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are mixed, with some studies finding no evidence of a significant relationship between various CG variables and firm performance (Demsetz & Villalonga, 2001; Minton et al., 2009; Borlea et al., 2017; Vieira, 2018; Ciftci et al., 2019; Puni & Anlesianya, 2020). Based on the mixed evidence about the relationship between CG characteristics and firms' performance, particularly concerning gender diversity (Adams & Ferreira, 2009; Wellalage & Stuart, 2013; Liu et al., 2014; Martín-Ugedo & Minguez-Vera, 2014; Brahma et al., 2021), we try to bring new evidence on the relevant question of whether female directors improve companies performance.

In addition, the Portugues Law n.º 62/2017 (August 1) determines that the proportion of people of each sex designated for the management and supervisory body cannot be less than 33.3 %, and there is evidence that the gender quota causes a higher proportion of inexperient women on boards, which results in damage in firms performance (Ahern & Dittmar, 2012; Matsa & Miller, 2013; Wang & Kelan, 2013). Regarding the impact of gender diversity on profitability, Proença and Neves (2022) also show that there is an inverted U-shaped relationship to the peak.

In this context, we want to explore how the ownership structure influences a firm's performance, as well as whether board characteristics and gender diversity influence the performance of Portuguese firms. Consequently, this work addresses this question by looking into the data of the Portuguese-listed companies. Consequently, we made the following research questions: How does the ownership structure influence a firm's performance? Do board characteristics and gender diversity influence the performance of a company? To answer these questions, we consider a sample of Portuguese-listed firms for the period between 2010 and 2020 and a panel data methodology.

Our study has some contributions. First, it explores the relationship between CG and firms' performance, which empirical evidence lacks consistency. Second, it analyses a small and illiquid market: Portugal. The Portuguese market is characterized by highly concentrated ownership, whose capital market is known for its small size, the low degree of liquidity, and the low protection of shareholders and creditors, contrary to what happens in the US and the UK (Sá et al., 2017). The majority of studies on this domain were made in the context of developed and big capital markets, such as the Anglo-Saxon markets or in developing markets. Third, to the best of our knowledge, this is the first study controlling the COVID-19 pandemic's effect on the relationship between CG and firm performance in Portugal. Finally, our study sheds light on the role of ownership and gender on firms' performance.

The remainder of the paper is organized as follows. In the second section, we present the literature review and the formulation of the hypotheses. This is followed by the methodology of the study. Section four discusses the main results. Lastly, the conclusion of the paper is given.

Literature Review

CG is seen as a fundamental tool to help firms generate wealth and value for all their stakeholders and ensure their sustainability. There are several theories associated with CG, but the most prominent ones are the Agency Theory, the Stewardship Theory, and the Stakeholder Theory. However, the discussion as to whether CG mechanisms have a significant impact on a firm's performance is inconclusive in theoretical terms.

The Agency Theory (Jensen & Meckling, 1976) argues that the principal (shareholders) engages the agent (managers) in the firm's decision-making process, contributing to the maximization of firm value. In a perfect scenario, the agent would make optimal decisions from the principal's viewpoint, contributing to the value of firm maximization and, consequently, to the maximization of shareholder wealth. However, the agent may fall into opportunistic behaviour, driven by their self-interest, breaking apart from the aspirations of the principal. According to the agency theory, diversity reinforces the monitoring role. In fact, there is evidence that women have a greater ability to monitor than men do and that they think more independently (Adams & Ferreira, 2009).

On the opposite spectrum, there is the Stewardship Theory (Donaldson & Davis, 1991), which stems from psychological and sociological theories and focuses on managerial behaviour, where the satisfaction of a job well done is the major motivational reason. The steward's individualistic behaviour will collapse under the notion that pro-organizational and collectivist behaviour will provide a superior utility in the pursuit of organizational goals. According to Donaldson and Davis (1994), this theory assumes that managers are good stewards of corporations and diligently work to attain high levels of corporate profit and shareholders' returns. The authors argue that managers are mainly interested in achievement and responsibility needs and that firms may be better assisted in freeing managers from the subservience of non-executive director-dominated boards. While the Agency Theory assumes that the agent's sole motivation stems from financial reasoning, mainly resulting from the necessity to line up agent behaviour with shareholder's interests, the Stewardship Theory is motivated by higher needs, such as achievements, responsibility, and progress. There is evidence showing that females may engage in stewardship behaviours (Kidder, 2002; Bormann et al., 2021), whereas men are mainly motivated by improving their own status (e.g., Gardner & Gabriel, 2004).

The Stakeholder Theory was born to build a framework capable of answering the concerns of managers during times of change and turmoil. Freeman (1984) states that the existing theories until the 1980s were not consistent with the quantity and kinds of change that were happening in the business environment, arguing for the need for a new conceptual framework. Blair (1995) argues that the strategy to maximize the wealth of a firm is to improve the incentives of the key participants and to align the interests of the different stakeholders. Some social identities, like

gender and age, may define stakeholder groups (Crane & Ruebottom, 2011). Consequently, from the stakeholder perspective, it is important to understand whether a female is a particular class of organizational stakeholders.

Ownership concentration

The competing arguments regarding concentrated ownership largely turn on improved monitoring and control versus expropriation risks (Wang & Shailer, 2015). Although Demsetz and Villalonga (2001) find no significant relationship between ownership structure and firm performance, there is several empirical evidence showing that ownership concentration positively influences the firm's performance, such as Lehmann and Weigand (2000) and Kapopoulos and Lazaretou (2007). Using a sample of listed firms in Ghana from 2006 to 2018, Puni and Anlesianya (2020) found that ownership concentration had a positive impact on return on assets but an insignificant impact on return on equity and Tobin's Q, suggesting that the results depend on the performance measure used. The benefits of concentrated ownership, associated with better monitoring and management control and avoiding agency problems, may be more evident when a country's legal systems are relatively weak (La Porta et al., 1999), as is the case in Portugal.

On the other hand, there may be a risk that controlling shareholders extract private benefits at the expense of minority shareholders, engaging in inefficient activities (Morck et al., 1988) that, in the short term, lead to lower levels of performance.

Based on these assumptions, we formulate the first hypothesis as follows:

H1: There is a positive relationship between ownership concentration and Portuguese firms' performance.

Managerial Ownership

According to the agency model, a seminal paper by Jensen and Meckling (1976) shows that there is a convergence of interests between shareholders and managers as the managers' ownership increases, and thus, higher managerial ownership should reduce agency costs and hence increase firm performance. Fauzi and Locke (2012) found that managerial ownership exhibits a positive and significant relationship with firm performance, suggesting that higher managerial ownership increases firm performance by aligning interests when managers are also shareholders. Likewise, Ramadan and Hassan (2021) examine the effect of CG mechanisms on performance for Egyptian listed firms, considering the period 2014–2016, finding a positive association between managerial ownership and firms' performance.

However, managers also tend to maximize their own benefits, regardless of the firm's benefits, the managerial entrenchment effect (Fama & Jensen, 1983), leading to a negative relationship between managerial ownership and firm performance. For

example, Shao (2019) found a negative relationship between insider ownership and firm performance.

Following the literature, we formulate the second hypothesis:

H2: There is a positive relationship between managerial ownership and Portuguese firms' performance.

Board Size

The board of directors is an essential control mechanism. Thus, it should align with the interests of the shareholders, influencing the success of a firm (Hsu & Wu, 2014; Allam, 2018). The board of directors represents the head of internal control, limiting or eliminating behaviours that deviate from the firm's self-interest of management (Donaldson & Davis, 1991). CG literature shows several characteristics that should be present in the board to perform their roles effectively. According to Allam (2018), these characteristics significantly affect the board performance, such as board size, board composition, the presence of supportive committees, and the need to separate the CEO and chair posts. Larger boards may suffer from problems of flexibility and are less likely to become involved in the strategic decision-making process (Eisenberg et al., 1998). Moreover, they may not be able to act successfully as a controlling body as they may have difficulties in coordinating their efforts (Fernandes et al., 2016). From this point of view, a small number of board members produces a more effective control mechanism. However, a smaller board may be more easily swayed by the CEO. Also, a larger board tends to offer a wider range of knowledge, skills, and different views and allows the inclusion of multiple viewpoints on corporate strategy.

Eisenberg et al. (1998) found evidence of a negative relation between board size and performance in small firms with small boards in Finland. In the same vein, Hirvelä (2019) found a negative relationship between board size and firm performance, measuring the firm's performance by Tobin's Q. More recently, Ramadan and Hassan (2021) also showed a positive association between these variables. However, Minton et al. (2009) found that board size is not significantly related to the firm's stock performance. On the other hand, some studies support a positive effect on performance (Khan et al., 2019; Puni & Anlesianya, 2020), justified by the fact that larger boards promote more effective controls and encompass a broad set of skills and abilities to meet the different needs of the company (Neves et al., 2022).

Based on previous scientific arguments, the following hypothesis is proposed:

H3: There is a negative relationship between board size and Portuguese firms' performance.

Board Independence

The board composition critically influences the success of a firm (Hsu & Wu, 2014) since they are crucial in developing a strategy, advising top management, evaluating their performance, and ensuring that key resources are available. Fama and Jensen (1983) argue that independent directors with no economic interest are better suited to monitor management decisions. CG reformers generally adopt an agency perspective and place substantial emphasis on the board's monitoring function. Thus, the most common response to recent corporate scandals appears to be board independence (Hsu & Wu, 2014). Liu et al. (2015) studied the effect of board independence on the performance of Chinese listed firms, finding that the degree of board independence is positively related to a firm's performance. Theory and conventional wisdom suggest that a board dominated by outsiders is optimal for monitoring managers (Upadhyay & Öztekin, 2021). This positive relationship is justified because more independent administrators increase supervision and control in companies, leading to better performance (Fernández-Temprano &Tejerina-Gaite, 2020).

However, several studies found no evidence of a significant positive effect of greater board independence on firm performance, such as Bhagat and Black (1998) and Vieira (2018). For example, Singh et al. (2018) show a negative relationship due to the possible association between internal and external managers of the company, which can lead to a deterioration in business performance levels

Based on previous arguments, the following hypothesis is proposed:

H4: There is a positive relationship between board independence and Portuguese firms' performance.

Gender Diversity

Gender equality and social inclusion represent one of the biggest challenges for the corporate world, and ethical issues regarding these subjects are often raised. The inclusion of women in top positions has been promoted by the actions of some countries, which have enacted different laws and good governance codes to increase the presence of women on the board of listed companies (Turrent, 2019), drawing the attention of the academic world. Although most of the legislation is being pushed to create a better environment for the presence of women on boards, their influence on firm performance is not consensual among the empirical studies since different authors have shown different positions on the effect of their presence in top positions on a firm's performance. Women are not part of the "old boys" network, which allows them to be more independent and have a better understanding of customer behaviour, their needs, and opportunities for companies to meet those needs (Fauzi & Locke, 2012). Moreover, other arguments for the appointment of female non-executive directors are that this will increase

the diversity of opinion, enhance decision-making and leadership styles and provide a competitive advantage by improving the company's image among stakeholder groups and through women's distinctive set of skills (Burgess & Tharenou, 2002; Carter et al., 2003).

Liu et al. (2014), examining the effect of gender diversity and firm performance on China's listed companies from 1999 to 2011, observed a positive and significant relationship between board gender diversity and firm performance. In the same vein, Brahma et al. (2021) examined the relationship between gender diversity and firm performance of FTSE 100 firms in the UK, showing a positive and significant relationship between gender diversity and financial performance. Ramadan and Hassan (2021) also find a positive impact of gender diversity on firms' performance.

However, other authors support a contrary view regarding the involvement of female directors. Adams and Funk (2012) show that female directors are more prone to take risks than male directors. In the same vein, Adams and Ferreira (2009) defend a negative effect of female board representation on profitability and value, suggesting it is due to their engagement in excessive monitoring, which decreases shareholder value. In fact, following Rodríguez-Ruiz et al. (2016), if there is greater competition and if the appointment of women to boards of directors is motivated by laws and social pressures, the impact of gender on performance can be negative.

Organizations may also be facing increasing stakeholder pressure to elevate more women into senior positions not due to their work performance but instead to comply with the stakeholder expectations concerning gender equality (Kaehler & Grundei, 2019).

Nevertheless, gender diversity on the board may present advantages not only on an economic dimension but also on an ethical dimension. The impact of female participation on non-economic performance measures such as corporate social responsibility and transparency links a more gender-diverse environment with a positive association with the extent of corporate social reporting information disclosed in annual reports (Rodrigues et al., 2017).

Given the literature, the fifth hypothesis is formulated as follows:

H5: The boards' gender diversity influences Portuguese firms' performance.

Representation of Female Directors

As referred to by Brahma et al. (2021), empirical evidence on gender diversity and firm performance obtained from both developed markets and emerging markets have remained inconclusive. Liu et al. (2014) and Brahma et al. (2021) observed a positive and significant impact on firms' performance on companies with greater gender diversity on their board composition. The results of the former authors suggest that three or more female directors have a stronger impact on a firm's

performance, supporting the critical mass theory (which refers loosely to a group big enough to accomplish change). Liu et al. (2014) use the expression "one is a token, two is a presence, and three is a voice". Although we do not see this variable explored in any study, we would like to analyze whether three or more female directors will influence a firm's performance. In this context, and based on these studies, we formulate the last hypothesis:

H6: There is a positive relationship between the presence of three or more female directors on the board and the Portuguese firm's performance.

Methodology

Variables

To analyze the influence of CG determinants in the firm's performance, the dependent variable adopted is firm performance (PERF), which will be measured by two accounting performance measures: Return on Assets (ROA) and Return on Equity (ROE) and a market performance measure: Tobin's Q.

As independent variables, it was used the following to measure the proposed corporate governance characteristics were ownership concentration (OWN), managerial ownership (MAN), board size (BSIZE), independent board members (BIM), and gender diversity (WOMEN). It also included a dummy variable when three or more female directors are present on the board (D_WOMEN).

Following previous empirical literature (Hsu & Wu, 2014; Liu et al., 2014; Rodrigues et al., 2017; Vieira, 2018; Brahma et al., 2021; Hermuningsih et al., 2020; Mohamad et al., 2020), as for control variables, it was included the firm's age (AGE), firm's size (SIZE), leverage (LEV), and a dummy variable for COVID-19 (COVID). We expect a positive relationship between both the firm's age and size and the firm's performance. Concerning the relationship between leverage and performance, it can be positive, according to the free cash flow theory (Jensen, 1986), or negative, following the pecking order theory (Myers & Majluf, 1984).

Table 1 shows the definition of the variables used in this study.

Table 1. Definition of Variables

Type of Variable	Variable	Abbreviation	Definition
Dependent	Return on Assets	ROA	EBIT divided by total assets
	Return on Equity	ROE	Net income divided by equity
	Tobin's Q	TOBINQ	The ratio between the market value and replacement value of the same physical asset, as a proxy to Q
Independent	Ownership concentration	OWN	Percentage of shares held by the largest shareholder

Type of Variable	Variable	Abbreviation	Definition
	Managerial ownership	MAN	Percentage of equity shares owned by directors and their immediate families at the accounting year-end
	Board size	BSIZE	Total number of members of the board
	Independent board members	BIM	Proportion of independent members of the board to the total number of members on the board
	Gender diversity	WOMEN	Proportion of women on the board divided by the total number of directors
	Number of women	D_WOMEN	Diversity is a dummy variable that takes a value of 1 if there are three or more female directors on the board and 0 otherwise.
Control	Firm Age	AGE	Natural logarithm of the difference between incorporation year and fiscal year
	Size	SIZE	Natural logarithm of total assets
	Leverage	LEV	Ratio of total debt to total assets
	COVID	COVID	Dummy variable takes the value 1 for 2020 and 0 otherwise

Note. Definition of the variables

Methodology

The relationship between a firm's performance and CG was assessed using the following regression model, which is based on Vieira's (2018) model:

$$PERF_{i,t} = \alpha + \beta_1 AGE_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 COVID_{i,t} + \beta_5 OWN_{i,t} + \beta_6 MAN_{i,t} + \beta_7 BSIZE_{i,t} + \beta_8 BIM_{i,t} + \beta_9 WOMEN_{i,t} + \beta_{10} D\_WOMEN_{i,t} + \varepsilon i, t$$

PERF consists of three different measures of performance mentioned above: α is the constant, and εi,t represents the stochastic error term for i firm observation on period t. The other variables are presented in Table 1. For each regression, we assess which model is most appropriate among the pooled ordinary least squares (OLS), the fixed effects model (FEM) and the random-effects model (REM) as the selection of the estimation method can deliver more efficient estimators, applying the F statistic, the Hausman and the Breusch-Pagan test.

Sample

The sample is composed of the non-financial Portuguese firms listed in Euronext Lisbon for the period between 2010 and 2020, resulting in unbalanced panel data, being the first year of the sample conditioned by the availability of data. The data was collected on a private database provided by Bureau van Dijk (SABI). For some CG variables information, such as the board size, the gender of the board members, and the independent members of the board, we needed to analyze the firms' annual management and governance reports. This data collection was conducted between April and May of 2021. The final sample consisted of 17 non-financial firms, corre-

sponding to 187 firm-year observations. The small size of the sample results from the fact that Euronext Lisbon is really a small stock market. Indeed, the Euronext Lisbon common stocks have 39 components, 5 of them being financials. Denmark and Finland, two small European markets, have more than 100 listed firms. In May 2010, the market capitalization of Euronext Lisbon reached 175,347.2 million euros. Looking at the Portuguese market benchmark, the weight of the Portuguese stock market capitalization in GDP rose from 34.29 % in 2010 to 40.13 % in 2022 despite having lost three banks, leaving only one listed bank (Jornal Económico, 2023).

Results

Table 2 presents the summary descriptive statistics for the variables mentioned before from 2010 to 2020.

Table 2. Descriptive Statistics

	2010–2020				
Variables	Mean	Median	Minimum	Maximum	SD
SIZE	21.67	22.00	18.79	24.51	1.55
LEV	0.64	0.67	0.04	0.97	0.16
OWN	0.41	0.39	0.05	0.86	0.22
MAN	0.06	0.00	0.00	0.69	0.15
BSIZE	11.96	11.00	3.00	24.00	5.29
BIM	0.25	0.26	0.00	0.78	0.23
WOMEN	0.16	0.17	0.00	0.50	0.12
ROA	0.04	0.03	-0.29	0.27	0.05
ROE	0.12	0.12	-0.35	0.54	0.11
TOBINQ	0.54	0.38	0.06	1.93	0.38

Note. Descriptive statistics

Regarding the performance variables, ROA varied between -0.29 and 0.27, with a mean of 0.03. For ROE, it varied between -0.35 and 0.54, with a mean of 0.11, suggesting that firms present a higher ROE than ROA. Tobin's Q shows a mean of 0.38, varied from 0.06 to 1.93.

Table 3 presents the summary descriptive statistics for the variables mentioned previously, divided into two timeframes: 2010–2017 and 2018–2020.

Table 3. Descriptive Statistics, Considering Two Sub-Periods: 2010–2017 and 2018–2020

	2010–2017					2018–2020				
Variables	Mean	Median	Minimum	Maximum	SD	Mean	Median	Minimum	Maximum	SD
SIZE	21.68	22.03	18.94	24.51	1.54	21.66	21.85	18.79	24.48	1.59
LEV	0.65	0.66	0.04	0.90	0.15	0.63	0.67	0.09	0.97	0.19
OWN	0.41	0.39	0.07	0.86	0.22	0.41	0.48	0.05	0.83	0.21
MAN	0.06	0.00	0.00	0.64	0.14	0.06	0.00	0.00	0.69	0.17
BSIZE	11.91	11.00	3.00	24.00	5.32	12.08	13.00	3.00	21.00	5.27
BIM	0.24	0.25	0.00	0.78	0.22	0.27	0.26	0.00	0.78	0.25
WOMEN	0.13	0.11	0.00	0.40	0.11	0.24	0.24	0.00	0.50	0.08
ROA	0.04	0.04	-0.29	0.18	0.05	0.04	0.03	-0.08	0.27	0.05
ROE	0.13	0.12	-0.30	0.53	0.10	0.11	0.11	-0.35	0.54	0.12
TOBINQ	0.52	0.35	0.06	1.93	0.42	0.58	0.54	0.07	1.53	0.36

Note. Descriptive Statistics for the sub-periods 2010–2017 and 2018–2020

The data set was divided into two periods – before and after 2018, corresponding to the release of the latest CG code and its recommendations on board characteristics, as well as the law decree 62/2017, article 5º. It states that the gender proportion present on the board of directors cannot be inferior to 20 % after the first general meeting in 2018 and 33,3 % after the first general meeting in 2020. Following the recommendations of the CG code (IPCG, 2018) regarding gender diversity, companies should establish standards and requirements for new members of their governing bodies, with particular attention to gender diversity, since it may improve the performance of the governing body and balance its composition. We can observe that the gender diversity mean (WOMEN) is below the 20 % threshold established in 2018. In the 2018–2020 period, there was an increase in women's representation on boards, from 13 % to 24 %, which shows the effects of the measures to assure a bigger female representation in governing bodies, although there is still a board of directors with 0,00 % representation, as we can see in the minimum of the variable WOMEN.

Concerning board independence, the current CG code states that companies should include several non-executive directors to no less than one-third, but always plural, who satisfy the legal requirements of independence. We can see that, similar to gender diversity, there is a slight increase in the mean referred to the variable BIM from 24 % to 27 %. However, this margin is still below the threshold of one-third that is stated in the current CG code, which indicates that there are a few companies that are still not following this recommendation. Maybe it can happen because, in some companies, the chairman is the controlling shareholder, or the CEO himself may appear as Chairman of the Board of Directors.

Table 4 shows the Pearson correlations among the variables employed in this study and their significance level.

Table 4. Correlation Matrix of the Independent Variables

		Correlation Matrix									
		AGE	SIZE	LEV	COVID	OWN	MAN	BSIZE	BIM	WOMEN	D_WOMEN
AGE	PC	1	-0.028	0.054	-0.709**	-0.006	0.003	-0.057	-0.101	-0.460**	-0.495**
	Sig		0.711	0.473	0.000	0.936	0.966	0.453	0.180	0.000	0.000
SIZE	PC	-0.028	1	0.376**	0.020	0.268**	-0.430**	0.638**	0.555**	-0.377**	0.224**
	Sig	0.711		0.000	0.791	0.000	0.000	0.000	0.000	0.000	0.003
LEV	PC	0.054	0.376**	1	0.030	-0.058	0.039	0.189*	0.028	-0.090	0.191*
	Sig	0.473	0.000		0.693	0.447	0.613	0.011	0.708	0.234	0.011
COVID	PC	-0.709**	0.020	0.030	1	-0.021	0.020	0.040	0.048	0.292**	0.326**
	Sig	0.000	0.791	0.693		0.789	0.790	0.596	0.527	0.000	0.000
OWN	PC	-0.006	0.268**	-0.058	-0.021	1	-0.393**	0.072	-0.074	-0.107	0.065
	Sig.	0.936	0.000	0.447	0.789		0.000	0.346	0.334	0.161	0.399
MAN	PC	0.003	-0.430**	0.039	0.020	-0.393**	1	-0.347**	-0.312**	0.141	-0.179*
	Sig	0.966	0.000	0.613	0.790	0.000		0.000	0.000	0.065	0.018
BSIZE	PC	-0.057	0.638**	0.189*	0.040	0.072	-0.347**	1	0.459**	-0.348**	0.399**
	Sig	0.453	0.000	0.011	0.596	0.346	0.000		0.000	0.000	0.000
BIM	PC	-0.101	0.555**	0.028	0.048	-0.074	-0.312**	0.459**	1	-0.144	0.158*
	Sig	0.180	0.000	0.708	0.527	0.334	0.000	0.000		0.056	0.035
WOMEN	PC	-0.460**	-0.377**	-0.090	0.292**	-0.107	0.141	-0.348**	-0.144	1	0.406**
	Sig	0.000	0.000	0.234	0.000	0.161	0.065	0.000	0.056		0.000
D_WOMEN	PC	-0.495**	0.224**	0.191*	0.326**	0.065	-0.179*	0.399**	0.158*	0.406**	1
	Sig	0.000	0.003	0.011	0.000	0.399	0.018	0.000	0.035	0.000	

Note. Pearson correlation; Sig – significance, two-tailed. * – α=0,01, ** – α=0,05, *** – α=0,10

The correlation results for the independent variable reveal low correlation coefficients, the highest between the variables SIZE and BSIZE, with a value of 0.638, suggesting that multicollinearity does not pose an issue in this study. None of the variance inflation factors (VIF) exceeds 4.45, well below the recommended threshold (Hsu & Wu, 2014), which reinforces the idea that the independent variables do not suffer from multicollinearity problems.

Table 5 reports the regression model results considering the dependent variables ROA, ROE, and TOBINQ. For all the regressions, we present the efficient model (pooled OLS, FEM, or REM) based on the F statistic, the Breusch-Pagan statistic, and the Hausman test.

Table 5. Regression Model of the Three Performance Measures (ROA, ROE, and Tobin's Q)

	Regression					
	ROA		ROE		TOBINQ	
	(pooled OLS)		(FEM)		(FEM)	
Variables	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value
Constant	-0.1960	-1.702***	-0.4077	-0.821	0.6421	0.480
AGE	-0.0240	-2.207**	-0.0151	-0.877	-0.1280	-2.740*
SIZE	0.0137	2.188**	0.0265	1.069	0.0480	0.714
LEV	0.0465	1.363	0.0305	0.266	-1.1344	-3.678*
COVID	-0.0649	-2.930*	-0.1229	-3.987*	-0.1796	-2.146**
OWN	0.0225	0.861	-0.0714	-0.785	-0.3548	-1.437
MAN	0.1065	2.843*	-0.2556	-1.844***	0.4995	1.357
BSIZE	-0.0034	-1.967***	0.0004	0.107	0.0000	0.006
BIM	-0.0751	-2.827*	-0.0286	-0.394	-0.5548	-2.902*
WOMEN	0.0039	0.064	0.1251	1.018	0.6578	1.982**
D_WOMEN	-0.0116	-0.695	-0.0084	-0.304	-0.2273	-3.064*
F-test	1.08537		3.39567*		16.8794*	
Breusch-Pagan test	0.542098		8.62028*		191.506*	
Hausman test	12.0087		13.8994		17.9404***	
AdjustedR^2	0.2332		0.1935		0.3364	
N	170		170		170	

Note. * – α=0,01, ** – α=0,05, *** – α=0,10

The results show some differences between accounting and market performance measures. This is in line with the notion that accounting and market measures have little empirical overlap since the value of a firm on the stock market is a reflection of its future value, while the accounting measures of a firm are a reflection of its past performance (Gentry & Shen, 2010). Looking at the adjusted R^2, it is suggested that the market-based measure (Tobin's Q) is more appropriate as a proxy for performance than the accounting measures (ROA and ROE). The effect of LEV is statistically significant for the market-based measure. Regarding the OWN variable, the coefficient is not statistically significant for any of the performance

measures used. The variable MAN shows a positive relationship between managerial ownership and the firms' performance, with a high confidence level, when looking at the accounting measure ROA.

Concerning BSIZE variable, we can see significant p-values for the ROA performance measure, indicating a negative relationship between board size and firms' performance.

Regarding BIM variables, the results show that this variable is statistically significant for both ROA and Tobin's Q performance metric with the same confidence level. However, we can observe the opposite effect of the one suggested in H4, meaning that an increment of BIM leads to a decrease in corporate performance.

The variable WOMEN presents a positive and significant coefficient for the market performance measure, showing a positive relationship between the presence of women on the board and the firms' performance (based on Tobin's Q).

The variable D_WOMEN is only statistically significant for the regression that considers Tobin's Q as a dependent variable. However, the signal is contrary to the expected one.

Finally, the COVID variable presents a statistically significant negative impact on performance for all the accounting and market-based measures, showing that COVID-19 causes a decrease in firms' performance.

Discussion

The results show that Tobin's Q is the most appropriate proxy for performance, suggesting that market measures of performance are superior to accounting measures. Indeed, Duffy (1995) argues that the ROE does not show whether firms create or ruin the shareholders' wealth, and Stickney (1996) highlights that the ROA ignores the financing costs.

The evidence that LEV negatively influences performance, measured by Tobin's Q, is consistent with the pecking order theory (Myers & Majluf, 1984). Since the OWN variable does not affect any of the performance measures used, we find no evidence to support H1.

The positive relationship between MAN and the firms' performance (measured by ROA) is in line with the studies of Fauzi and Locke (2012) and Ramadan and Hassan (2021) and supports H2. However, H2 is not supported by the ROE measure, with a confidence level of 90 %, since MAN negatively influences the firms' performance. The results also show that the MAN variable does not have a significant impact on firms' performance. Consequently, H2 is only supported when we consider the dependent variable ROA. This suggests that the results depend on the performance measure used.

The negative influence of BSIZE on the ROA performance measure indicates a negative relationship between board size and firms' performance, which is in agreement with the results of Eisenberg et al. (1998), Hirvelä (2019), and Ramadan and Hassan (2021), giving support to H3. However, the results do not support H3 when we consider the dependent variables ROE or Tobin's Q.

The BIM variable has an opposite effect than the expected by the H4, meaning that an increment of BIM leads to a decrease in corporate performance. This evidence suggests that the monitoring and advisory services provided by independent directors may not lead to efficiency improvements and may conspire to intensify agency problems (Vieira, 2018). In addition, the variable is not statistically significant for the case where the dependent variable is the ROE. Consequently, we find no support for H4. Bhagat and Black (1998) and Vieira (2018) do not find a significant relationship between board independence and performance.

The positive effect of WOMEN on the market performance measure shows a positive relationship between the presence of women on the board and the firms' performance (based on Tobin's Q), which is in line with the results of Burgess and Tharenou (2002), Carter et al. (2003), Liu et al. (2014), Vieira (2018), Brahma et al. (2021), and Ramadan and Hassan (2021), giving support to H5, but only for the market measure of performance.

The results concerning the variable D_WOMEN do not support H6. In addition, the opposite effect of WOMEN and D_WOMEN on Tobin's Q raises some questions regarding the mandatory quota for gender diversity in boards, requiring further analysis.

Finally, COVID-19 causes a decrease in firms' performance, which is in line with the results of Golubeva (2021) and Khatib and Nour (2021). This evidence suggests that this pandemic has brought disastrous problems for business performance from the perspective of different stakeholders. Regarding the CG variables, the positive sign of managerial ownership is highlighted with ROA but negative with ROE. This result may indicate that the manager, interested in the evolution of ROA, as his decisions will have an impact on this indicator, will feel motivated to be the holder of a fraction of the company to act in favour of more performance. However, the current shareholder, who primarily attends to ROE, has an antagonistic view, as he realizes that if the manager is simultaneously a shareholder, he can decide according to his own interests and not intend to increase the ROE.

As the number of board members increases, the manager assumes that this will destroy results by diluting opinions that can lead to bad performance decisions. At the same time, this manager assumes that the independence of this board will not increase performance as it cannot be guaranteed by outsiders who are unaware of the organization's internal reality. Potential investors, aware of the companies' long-term growth opportunities and therefore aware of Tobin's Q, share the same

opinion, which means that Portugal is still a country where the credibility of external board members may not be guaranteed, perhaps because they belong to several boards of directors.

Regarding the existence of women on the board of directors, these potential investors welcome this participation as a woman's vision can help in thoughtful investment and performance decisions. However, when the number of women increases, this view disappears, which means that there is still a reluctance in the market to have several women on the board.

In sum, we find evidence supporting hypotheses 2 and 3 for the dependent variable ROA and hypothesis 5 for the dependent variable Tobin's Q. Consequently, the results suggest that the sign and significance of the variables vary depending on the variable used to capture performance (Vieira et al., 2019).

Conclusion

The objective of this paper was to provide an overview of the CG topic, which reached the spotlight due to several global financial scandals and, since then, has been through a lot of integral changes and revisions in the past few years. This study examined the relationship between some CG determinants and their impact on firms' performance. In addition, it studies the influence of the COVID-19 pandemic on performance.

With this aim, we consider a sample of Portuguese-listed firms on Euronext Lisbon for the period between 2010 and 2020, using a panel regression analysis. Regarding ownership concentration, the results show no statistically significant relationship for all performance measures, which provided no support for the existence of a positive relationship between ownership concentration and the firm's performance. On the other hand, managerial ownership appeared to have a positive impact on performance measured by ROA. The managerial ownership may provide a better alignment between shareholders and managers by reducing agency costs. Thus, results support the hypothesis that there is a positive relationship between the firm's performance for managerial ownership and the dependent variable ROA.

Concerning board size and board independence, the results show that both present a negative, statistically significant relationship with the accounting performance measure ROA. In addition, regarding board independence, it also shows a negative relationship with the market-based performance measure, Tobin's Q. These results provide support to the hypothesis that there is a negative relationship between board size and a firm's performance for the ROA measure of performance. However, they do not give support to the assumption that there is a positive relationship between board independence and the firms' performance and raises the question of the true independence of this kind of board members, as they may be classified

as independent but may be selected through personal contacts or influenced by management.

Regarding gender diversity and its representation on the board, they have presented contrasting effects involving their relationship with the performance measure Tobin's Q. Gender diversity has a positive impact on firm performance through a market-based measure, supporting the hypothesis that the presence of women positively influences a firm's performance when we consider a market performance measure. However, we find no support for the hypothesis that three or more female directors will lead to an increase in a firm's performance, which may be explained by the fast and hasty promotions to meet quotas required by law, which could result in the promotion of less experienced board members.

These conclusions should not disregard the limitations of this research. Firstly, there are several measures connected to CG that could influence a firm's performance, making this a more complex interrelation system. Secondly, another limitation of this research is the small sample size due to the size of the Portuguese stock market and its data availability constraints.

For future research, we consider it important to extend this analysis to include other non-listed companies that present distinct structures and characteristics, which may lead to different findings. It would also be important to test novel performance variables, such as business measures. As we find evidence that there are a few companies that still are not following some code recommendations, it will be pertinent to understand the reasons why they are not following the orientations. In addition, we have assumed that all performance effects are due to the pandemic situation, but performance could also be influenced by organizational or market effects. Consequently, in future studies, we intend to consider different, longer periods to understand whether the results may be different considering periods of bear and bull markets.

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