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Department
of Business and Management

Course: Corporate Strategy

The impact of Corporate Governance Mechanisms on Firm Financial Performance: an empirical study on the *S&P 500*

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Academic Year 2021/2022

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ABSTRACT

Past research has extensively investigated how corporate governance mechanisms influence firm financial performance. Drawing mainly on Agency Theory, empirical research emphasized the importance of the monitoring role played by the board of directors in addressing agency problems and enhancing firm performance. However, the results have not reached a final consensus. The aim of this study is to provide further insights on the impact of corporate governance mechanisms on firm performance. Building on Agency Theory, this study examines how two corporate governance mechanisms, namely, the board of directors and large shareholders, address agency problems and impact firm performance. The findings show that certain features of the board of directors (*CEO duality, board size, board independence*), and the presence of *large shareholders*, have a significant impact on firm performance. Therefore, this study provides theoretical and practical contributions in the fields of corporate governance.

INTRODUCTION

A prominent debate in strategic management and corporate governance literatures addresses the conflict of interest arising from the separation of *ownership* and *control* in large publicly held companies. In large Anglo-Saxon listed companies, which are characterized by a dispersed ownership structure, there is an agency relationship between the *shareholders* and the *manager*: the shareholders delegate to managers the responsibility to run the business, acting in the best interest of the shareholders by maximizing the firm's equity value (Fama, 1980; Fama & Jensen, 1983). As a consequence, it is likely that the interests of the two actors do not align, and that the manager engages in opportunistic behavior to the detriment of firm performance. Moreover, the smaller the stake held by an individual shareholder, the less incentive he has to control the activities of manager, further increasing the risk that he will act according to his own private interests.

In light of this concern, one of the most debated issues in both the academia and the empirical research addresses how to properly design the corporation and implement governance mechanisms aimed at aligning the interests of shareholders and managers, enhancing firm performance. The urge to encourage companies to implement more effective governance practices has been expressed by institutional investors, by regulators, and by the whole business community. Moreover, plenty of empirical studies attempted to investigate how corporate governance mechanisms may enhance firm performance (e.g., Rediker, K.J. & Seth, A., 1995; Coles, McWilliams, & Sen, 2001; Dalton, Daily, Ellstrand and Johnson, 1998). Past research has mainly drawn on Agency Theory, emphasizing the board's role in controlling the manager and aligning interests (Fama, 1980, Fama & Jensen, 1983). However, it produced mixed results, without leading to a final consensus. Therefore, this study seeks to provide further insights and greater understanding of corporate governance mechanisms. Drawing on Agency Theory, the aim of this study is to investigate how two of the main internal corporate governance mechanisms, namely, the *board of directors* and *large shareholders*, impact firm financial performance.

Four hypotheses are tested using Multiple Linear Regression Models and relying on a sample of US listed companies composing the S&P 500 index. The results show that some characteristics of the board of directors, such as *CEO duality*, *board size*, and *board independence* are significantly related to firm performance. CEO duality is found to be detrimental for firm performance, while a large and independent board would enhance firm performance. Moreover, contrarily to the expectations, this study found that *ownership concentration* has a negative impact on firm performance.

Therefore, this work provides several contributions to corporate governance theory, fitting into the ongoing debate on the role of the board of directors in favor of the idea that it covers a key role in overseeing top management, lowering agency conflicts, and enhancing firm performance. In this regard, this work provides support to the Agency Theory, but it also challenges it, by finding that *ownership concentration* can negatively affect firm performance.

Some practical contributions are also provided. In light of the results of this study, when designing the board of directors, practitioners are encouraged to carefully consider the various features of the board of directors that might be helpful in solving agency conflicts and maximizing the value of the enterprise.

This paper is organized into the following four parts. Section 1 presents the theoretical framework of the study, and the hypotheses development. The methodology used to test the hypotheses, the sample employed, and the explanation of the variables adopted in the analysis are outlined in Section 2. Section 3 presents the results of the empirical analysis. Lastly, in Section 4 results are discussed, by mentioning the contributions and limitations of the research.

1. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

1.1 Agency Theory

In accordance with most of the empirical research on corporate governance, the Agency Theory (Jensen & Meckling, 1976; Fama & Jensen, 1983) is the central theoretical framework that guides this study. Agency Theory focuses on the existence and possible settlement of the various problems arising from the *agency relationships* established in modern corporations. An agency relationship occurs when an individual (the *agent*) acts as a representative of another individual (the *principal*). In this situation, the agents are likely to engage in opportunistic behavior, since they are assumed to be rational actors who maximize their own utility and have interests that differ from those of the principals. Furthermore, the situation is exacerbated by information asymmetries and uncertainty that are present in the company. Information asymmetries are determined by the fact that agents have more in-depth knowledge than the principal on the tasks they perform within the enterprise. Likewise, the firm is characterized by uncertainty because the task that has been delegated to the agent is not standardized, but it involves a lot of discretion and, most importantly, also depends on factors outside the agent's control (Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976). Information asymmetries and uncertainty not only further increase the risk of opportunism, but also entail some *agency costs* for the firm (Jensen, & Meckling, 2009). More specifically, Jensen & Meckling (1976) have identified three types of agency costs. The first one is the cost incurred by the principal to control the agent, the so-called "*monitoring cost*". The second one is the cost incurred by the agent to guarantee that he will act in the principal's best interest, the so-called *"bonding cost".* Finally, there is the cost related to the fact that in any agency relationship there will be an irreconcilable divergence of interests between the principal and the agent, known as the "*residual loss*" of welfare.

According to Agency Theory, the type of agency problem affecting the firm also depends on its *ownership structure*. Firms with a dispersed structure experience agency conflicts between *managers* and *shareholders* because of the separation between ownership and control, whereas when the sole owner of the company is the manager, agency problems do not exist to any extent (Fama & Jensen, 1983).

This study focuses on large U.S. publicly traded companies, which are an example of the former scenario, being characterized by a fragmented ownership structure. This structure results in the separation between *ownership* and *control*: the shareholders (*principals*) do not exercise their control and voting rights and delegate the power to the manager (*agent*), who

should act in the interest of the shareholders. Moreover, the more the ownership is fragmented, the more the principals will not use their voting rights – or will use their votes just to ratify the decision taken by the agents – without intervening in the management of the enterprise (Walsh & Seward, 1990). Similarly, when the ownership structure is fragmented, there is little incentive for shareholders to supervise managers' actions. The reason is that, although the benefit resulting from the monitoring activity would be enjoyed *pro-rata* by all shareholders, the cost would be borne only by the individual shareholder who had undertaken the monitoring action. As a consequence, shareholders do not exert any control over the behavior of the manager, hoping that others will do it on their behalf. This situation is also known as the shareholder's *free-riding* problem (Shleifer & Vishny, 1986). In a nutshell, when the ownership structure is fragmented the individual shareholder is not interested in carrying out, or even supervising, the daily activities of the business he owns (Walsh & Seward, 1990). In this situation, it is likely that managers act in their own self-interest at the expense of the shareholders. The Agency Theory defines this conflict between principal and agent as the *Type I agency problem*.

In order to attenuate agency conflicts, Fama & Jensen (1983) suggested the establishment of specific *corporate governance mechanisms* aimed at reducing agents' self-discretion to pursue their own interests at the expense of the principals. More specifically, they argued that the firm can rely on both *internal* organization-based mechanisms and *external* market-based mechanisms that could contribute to align the interests among the firm's stakeholders. The internal mechanisms address the agency conflicts by operating within the firm and constitute the most important governance mechanisms. When internal mechanisms fail, the firm can also rely on external mechanisms, such as the market for corporate control, laws, and regulations (Walsh & Seward, 1990; Fama, 1980). In this paper, I investigate how two of the main internal corporate governance mechanisms, namely, the *board of directors* and the presence of *large shareholders*, contribute to mitigate agency problems, enhancing firm performance.

1.2 Board of directors as corporate governance mechanism

The duty of providing appropriate incentives to align the interests of agents and principals is primarily assigned to the board of directors, which represents the main internal mechanism of control of the top management (Combs, Ketchen Jr., Perryman, & Donahue, 2007; Walsh & Seward, 1990; Daily & Cannella, 2003; Fama & Jensen, 1983). The board of directors is entrusted with the power of taking decisions in all major areas of the business. As such, they have the responsibility to enhance firm's value by acting diligently and loyally.

The literature on corporate governance has identified three main roles of the board of directors: the *strategic role*, which involves intervening in the most important strategic choices of the business; the *resource dependence role*, which consists of building stable and beneficial relationships with the external environment for the survival of the enterprise; and the *monitoring role,* focused on controlling top management activities to prevent opportunistic behavior that could damage the firm.

However, the complex debate on what is the main role of the board is still pervading the literature and has not reached a unanimous conclusion. In accordance with Agency Theory, this study argues that the board's involvement in attenuating agency problems and enhancing firm performance is primarily rooted in its *monitoring role* (Hillman & Dalziel, 2003; Fama & Jensen, 1983; Dalton D., Hitt, Certo, & Dalton C., 2007). As a matter of fact, the Agency Theory emphasizes the oversight role of the board among all others, arguing that the board of directors is fundamental in mitigating agency conflicts and enhancing firm performance. As claimed by Hambrick, Misangyi & Park (2015), the board's monitoring role is the "only available device for encouraging CEOs to adhere to shareholders' interests […] providing front-row oversight" (Hambrick, Misangyi & Park, 2015:326). In this study, I focus on two aspects of the board of directors: the *board leadership structure* and the *board composition* (*board size* and *board independence*).

1.2.1 Board leadership structure

The separation of the roles of *Chairperson* and *Chief Executive Officer* in the firm is an attribute of the board of directors that can cover an important role in attempting to mitigate agency conflicts in modern organizations (Fama,1980; Jensen & Meckling, 1976; Finkelstein & D'Aveni, 1994). For the sake of clarity, it is fair to provide some definitions that will be adopted throughout this study. The situation where the roles of Chairperson and CEO are held by two different people is referred to as *separate* board leadership structure. Conversely, when the same individual serves as both the Chairperson and CEO, it is referred to as *dual* board leadership structure, or CEO duality.

The leadership structure of the board of directors and its effect on firms' outcomes is one of the most studied topics in both corporate governance and top management team literature, as it involves one of the enterprise's most crucial power relations. The dual leadership structure has been questioned as an inappropriate way of organizing this important relationship, as it results in a substantial centralization of power in the hands of the CEO (Coles, McWilliams, &

Sen, 2001; Finkelstein & D'Aveni, 1994; Duru, Iyengar & Zampelli, 2016; Certo, Lester, Dalton & Dalton, 2006).

From an Agency Theory perspective, CEO Duality is detrimental for firm performance. The underlying assumption is that, because of the separation between ownership and control, the manager is likely to engage in opportunistic behavior at the expense of the shareholders (Fama,1980; Jensen & Meckling, 1976). A dual leadership structure of the board would result in a substantial CEO *entrenchment* at the top of the firm, increasing the risk that the CEO would act according to his own interest (Finkelstein & D'Aveni, 1994). Moreover, if the role of Chairperson is held by the CEO, the board's effectiveness in overseeing top management is inevitably compromised (Finkelstein & D'Aveni, 1994; Mallette & Fowler, 1992). The separation of the two roles is essential to ensure independent and objective scrutiny of the CEO's behavior, which in turn would enhance firm performance.

Despite its critical issues, the dual board leadership structure has long been part of the tradition of Anglo-American companies. The existence of this practice, and the survival of organizations that implemented it, has been explained by scholars by advocating that CEO duality imply a *unity of command* that would ultimately benefit performance (Finkelstein & D'Aveni, 1994; Pfeffer, 1992; Donaldson & Davis, 1991; Davis, Schoorman, & Donaldson, 1997). Notwithstanding, there is consensus about the fact that companies opting for CEO duality can survive, and even perform well, only to the extent that they are able to counterbalance the potential negative effects of the dual structure by relying on other governance mechanisms aimed at avoiding opportunistic behavior by managers (Finkelstein & D'Aveni, 1994). As a matter of fact, when examining the link between CEO power and firm performance, the literature frequently asserts that the latter may be influenced by other governance mechanisms that either support or undermine dominant CEOs (Boyd, 1995; Haynes, Zattoni, Boyd, & Minichilli, 2019; Coles, McWilliams, & Sen, 2001). Therefore, by merely considering this aspect in isolation, it is reasonable to claim that the roles of Chief Executive Officer and Chairperson should be separate. Supporting this idea, Good Governance Codes and regulations recommend the adoption of a separate board leadership structure to reduce conflicts of interest and ensure greater board efficiency in overseeing management.

Several empirical research have investigated the link between CEO duality and firm performance (i.e., Baliga, Moyer & Rao, 1996; Duru, &Iyengar, 2016; Rechner & Dalton, 1991; Boyd, 1995; Dalton, Daily, & Ellstrand, 1998). Although some studies did not encounter any significant relationship between board leadership structure and firm performance (i.e., Dalton, Daily & Ellstrand, 1998), most of the empirical results provide support to the idea that

CEO duality is detrimental for firm performance. For instance, Rechner & Dalton (1991) studied a sample of 141 firms and found that the firms opting for separated leadership consistently outperformed those relying on CEO duality. Similarly, other studies that used a wider concept of CEO power, including CEO duality as a relevant source of power, found a negative relationship between CEO power and firm performance (Gupta, Han, Nanda, & Silveri, 2018; Veprauskaitè & Adams, 2013; Haleblian & Finkelstein, 1993). Therefore, following Agency Theory and empirical evidence, I formulate the following hypothesis:

H1: There is a negative relationship between CEO duality and firm performance.

1.2.2 Board size

The board size is another crucial attribute of the board of directors that could address agency conflicts and impact firm performance (Finkelstein & Mooney, 2003; Yermack, 1996; Pearce & Zahra, 1991). Generally, large boards are known to facilitate the establishment and development of relationships with the external environment, and to offer a wider range of capabilities and different perspectives. In fact, it is recommended that board of directors of large, listed companies should be large enough to include a majority of independent directors and an appropriate diversity of skills and experiences to properly carry out its duties.

From an Agency Theory perspective, more directors within the board would empower the monitoring role of the board of directors, enhancing firm performance (Kiel & Nicholson, 2003; Coles, Daniel, & Naveen, 2008; Fama & Jensen, 1983).

Corporate governance scholars have argued that the increased monitoring effectiveness deriving from a larger board size is driven by several factors. Firstly, larger board are "less easily influenced by managerial interest" (Porac, Wade, & Pollock, 1999:133). For instance, larger boards can more easily prevent top management from influencing directors' selection based on personal interests (Shivdasani & Yermack, 1999). In a similar vein, larger boards are recognized to be more effective in counterbalancing and controlling powerful CEOs. Following a straightforward reasoning, bigger boards can effectively oppose powerful CEOs because it will be harder for the CEO to exert influence over a higher number of directors (Haynes, Zattoni, Boyd, & Minichilli, 2019). Secondly, larger boards tend to have more independent directors, who cover an important role to ensure the effectiveness of the board oversight activity (Reeb & Upadhyay, 2010; Coles, Daniel, & Naveen, 2008; Schellenger, Wood & Tashakori; 1989). As will be discussed later in this study, independent directors are more effective in

performing the supervision role than the other directors, because they have less ties with the manager or the company (Fama, 1980; Fama & Jensen, 1983). Moreover, Cahan & Wilkinson (1999) argued that it's likely that larger boards have more block holder equity representation, which in turn would enhance the oversight role of the board addressing agency problems. Lastly, the impact of board size on performance have been also analyzed by referring to the degree of *heterogeneity* of the board. Larger boards would imply more diversity of skills, opinions, and perspectives, which has been claimed to be beneficial for firm performance. Heterogeneity within the boardroom could be defined as the presence of individuals who are different from each other, and can be measured in terms of gender, education, age, or ethnicity. Regardless of the type of diversity, some scholars found that greater heterogeneity would increase the efficiency of the board in performing its *supervisory role* (Adams & Ferreir, 2009; Erhardt, Werbel, & Shrader, 2003). In this regard, Milliken & Martins (1996) argued that, when grouped with dissimilar people, individuals are able to develop more critical and in-depth thinking and are more inclined to listen to each other and collaborate to achieve a common goal. Therefore, a larger board would be beneficial for firm performance to the extent that it implies more heterogeneity of knowledge, competencies, and skills.

Providing support to the Agency Theory, most of the empirical research found a positive relationship between board size and firm performance (Coles, Daniel, & Naveen, 2008; Pucheta-Martinez & Gallego-Alvarez, 2020; Kalsie & Shrivastav, 2016; Kiel & Nicholson, 2003). As an example, Kiel and Nicholson (2003) found a positive relationship between board size and firm performance, using Tobin's Q as proxy for firm performance. Likewise, Coles, Daniel, and Naveen (2008) found that in large firms the board size is positively related to Tobin's Q, and that this relationship is mainly driven by the number of independent directors within the board. Therefore, following Agency Theory and in accordance with empirical results, I formulate the following hypothesis:

H2: There is a positive relationship between board size and firm performance.

1.2.3 Board independence

The *board independence* is the last aspect of the board composition analyzed in this study. In the literature, it has been considered an important aspect in determining the effective functioning of the board and in addressing agency conflicts (Uribe-Bohorquez, Martìnez-Ferrero, & García-Sánchez, 2018; Beasley, 1996; Kang, Cheng, & Gray, 2007). In accordance

with previous studies on the topic, this study refers to board independence as the extent to which the board is composed of *independent directors* (Pucheta-Martinez & Gallego-Alvarez, 2020; Combs, Ketchen Jr., Perryman & Donahue, 2007). Although Good Governance Codes offer various definitions of independent directors, this study considers independent directors those who do not currently hold, or held in the past, any other position within the company and "who do not have substantial business or family ties with management" (Combs, Ketchen Jr., Perryman & Donahue, 2007).

From an Agency Theory standpoint, a board of directors with a large number of independent members would be more effective in fulfilling its role of supervising top management and, therefore, would reduce agency problems between managers and shareholders, improving firm performance (Fama, 1980; Fama & Jensen, 1983). In this regard, Fama & Jensen (1983) described independent directors as professional *arbiters* in disagreements among executive managers and assigned them a monitoring role involving important agency issues.

According to this perspective, independent boards are widely acknowledged in the literature to be successful in overseeing top management, protecting shareholders' interests, and reducing agency conflicts (Dalton, Daily, Ellstrand, & Johnson, 1998; Coles, McWilliams, & Sen, 2001). Some scholars argued that independent directors occupy a stronger *structural position* within the firm to control the management and that, therefore, they are more capable to provide objective judgements about management's activities and firm financial results than non-independent directors (Neville, Byron, Post, & Ward, 2019). As a matter of fact, independent directors *by definition* have more power to monitor management. Having weak or no ties with the management and the firm, they can more easily confront the manager (Dalton D.R., Hitt, Certo, & Dalton, C.M., 2007). Moreover, independent directors are more incentivized to perform their monitoring role effectively because they are regulated by the market for their services, which evaluates them based on their performance and reputation as monitoring experts (Fama, 1980, Fama & Jensen, 1983). Finally, independent directors are found to be more prone to dismiss a powerful CEO in case of disappointing firm performance than other directors (Weisbach, 1988; Laux, 2008). CEO turnover of a poorly performing firm is considered an important factor of board oversight effectiveness (Duru, Iyengar, & Zampelli, 2016). In this sense, independent directors are more effective supervisors than other directors. All these arguments are also valid to explain why, after several cases of corporate fraud, regulations and Good Governance Codes include recommendations about the nomination of a majority of independent directors within the boards.

Several studies investigated the impact of the board independence on firm performance. Most of the empirical evidence provides support to the Agency Theory, demonstrating that there is a positive relationship between board independence and firm performance. For instance, Coles, McWilliams, & Sen (2001) found a positive relationship between the proportion of independent directors in the board and firm performance. Similarly, the two studies conducted by Tanna, Pasiouras, & Nnadi (2011) and Muravyev, Tavalera, & Weir (2002) investigating the impact of independence on firm performance on a sample of UK companies, found that companies with more independent boards exhibit better performance. Therefore, drawing on Agency Theory and in accordance with empirical evidence, I propose the following hypothesis:

H3: There is a positive relationship between board independence and firm performance.

1.3 Large shareholders as corporate governance mechanism

As already mentioned, the Agency Theory argues that there is a positive relationship between *ownership concentration* and *value creation*. When the ownership structure of the enterprise is *fragmented*, ownership and control are separated and there is a risk that the manager will act opportunistically to the detriment of enterprise value creation. Conversely, when the sole owner of the firm is the manager, the value of the firm is maximized because no conflict of interest occurs (Fama, 1980; Fama & Jensen, 1980). Furthermore, a third case may occur when the ownership structure is concentrated in the hands of few shareholders. Although ownership and control are separated, in this case the risk of opportunism is mitigated because *large shareholders* are incentivized to control that the manager maximizes enterprise value. In light of this, the Agency Theory perspective argues that the presence of *large shareholders* acts as a governance mechanism that can reduce top management's opportunism, enhancing firm performance. It is fair to mention that the Agency Theory is built on two underlying concepts, that are usually present in fragmented Anglo-American listed companies. It assumes that the shareholders share the same interests - and therefore can be identified as a single *principal* - and that they are secured by the optimization of the residual income (Zattoni, Airoldi, & Judge, 2020).

As previously mentioned, a fragmented ownership structure could result in *free riding problems* among shareholders. These problems occur when small shareholders do not actively monitor the management, hoping that the other shareholders will do it on their behalf. As a consequence of this problem, it is more likely that the managers act in an opportunistic way, at

the expense of firm performance. This is the so-called *principal-agent problem* – or *Type I agency problem* – existing in Anglo-American widely held companies. In this context, the presence of one or more shareholders who hold a quite large numbers of stocks *(large shareholders)* addresses this agency problem, acting as corporate governance mechanisms and enhancing firm performance (Fama, 1980; Fama & Jensen, 1983). In fact, large shareholders are more incentivized to supervise managers, because they hold a relevant percentage of firm's capital (Edmans, 2014; Shleifer & Vishny, 1986). Moreover, large shareholders have sufficient voting rights to prevent management from behaving opportunistically at the detriment of shareholders' interests (Edmans, 2014; Brickley, Lease, & Smith, 1988). In general, as explained by Edmans (2014), large shareholders who are dissatisfied with the performance of the top management can exert governance through two mechanisms: the *voice option* and the *exit option*. The term "voice" includes any action a shareholder can undertake to enhance firm value, such as advising on the manager's strategic business choices, or preventing value destroying actions, such as an expensive merger or acquisition. On the other hand, the "exit" option refers to the possibility that the shareholder sells his shares, pushing down their price and, thus, punishing the management for the poor performance (Edmans, 2014).

The debate on the relationship between ownership structure and firm performance can be traced back to the seminal paper by Berle and Means (1932), which proposed a negative relationship between dispersed ownership structure and firm performance. Successively, several empirical studies investigated this relationship and found similar results, giving support to the hypothesis advanced by the Agency Theory that large shareholders reduce management's opportunism and increase firm performance (i.e., Konijn, Kräussl & Lucas, 2011; Yeh, 2014; Coles, Mc. Williams, & Sen, 2001; Park, Kim, Chang, Lee, & Sung, 2018; Combs, Ketchen Jr., Perryman, & Donahue, 2007). Therefore, according to Agency Theory and in line with empirical evidence, I formulate the following hypothesis:

H4: There is a positive relationship between ownership concentration and firm performance

2. METHODOLOGY

2.1 Sample and data collection

The hypotheses are tested using secondary cross-sectional data in the year 2019 of a sample of firms composing the *Standard & Poor's 500 Index*. The index includes 500 large-cap US companies listed on the New York Stock Exchange or Nasdaq and covers about 80 percent of available market capitalization. It is the most important index related to US-listed stocks and it is the underlying for a wide range of derivative products. This study will focus on US based companies with the aim of controlling for any country-specific effects or institutional factors that may affect the relationships between corporate governance mechanisms and firm performance (La Porta, Shleifer, & Vishny, 1998; Aguilera, & Jackson, 2003). Moreover, the US market is the one that has been most extensively analyzed by researchers, providing numerous and reliable evidence for the development of this study. Finally, the rationale for using 2019 data is to avoid any possible bias due to global Covid-19 crisis.

In terms of data sources, the data concerning the board of directors (CEO duality, board size and board independence) have been collected using *BoardEx*, while the firm-specific data, as the firm financial performance and ownership concentration, have been gathered using *Orbis*. BoardEx and Orbis are high-quality databases that collect comparable and reliable data on companies around the world and are accessible through Luiss Guido Carli University. Therefore, after collecting all the data from the two databases, the two datasets have been merged using the ISIN code assigned to each of the 500 companies.

In this study, all banks, financial institutions, insurance companies and real estate companies have been excluded from the sample in order to implement a more reliable analysis. Prior research on the topic excluded these entities from the empirical analysis because they must comply with *ad hoc* accounting rules, and they are more strictly regulated than industrial corporations (Gupta, Han, Nanda, & Silveri, 2018; Bertrand & Schoar, 2003). Therefore, some characteristics of firms operating in these sectors, such as leverage, may be problematic to interpret and to compare with companies belonging to different industries (Gupta, Han, Nanda, & Silveri, 2018). For instance, banks' financial leverage is strongly biased by the fact that they must meet government-mandated *minimum capital requirements* to safeguard depositors and foster the stability of financial systems. Therefore, including these entities could undermine the reliability of the results of this analysis. The *four-digit Standard Industry Classification (SIC)*

retrieved from Orbis has been used to identify the firms operating in those sectors. This classification system has been developed by the Interdepartmental Committee on Industrial Statistics and provides a classification based on 10 Divisions (A-J), each of which is then divided into specific clusters identified by a four-digit number. The divisions are the following: *A) Agriculture, Forestry, and Fishing, B) Mining, C) Construction, D) Manufacturing, E) Transportation, Communications, Electric, Gas, and Sanitary Services, F) Wholesale Trade, G) Retail Trade, H) Finance, Insurance, and Real Estate, I) Services, J) Public Administration*. I removed in total 142 firms classified under the division *H) Finance, Insurance, and Real Estate*, of the *Standard Industry Classification.*

Thereafter, I excluded from the sample 14 companies for which complete data on the board size and board independence were not available, and 10 companies for which the data about ownership concentration were missing. Therefore, the final sample consists of 334 companies.

Table 1 shows the composition of the final sample by industry, according to the Standard Industry Classification. From the table it is possible to infer that the majority of the companies in the sample are manufacturing companies, representing the 47% of the total, followed by service companies, which represent the 22%. Fifty-four companies belong to the division E, a wide category including Transportation, Communication, Electric, Gas, And Sanitary Services. Wholesale and Retail Trade companies account for 10% of the sample, while mining and construction companies are a minority.

Table 1 – Industry Breakdown

Division		**Number**	**Percentage**
B	Mining	10	3%
C	Construction	5	1%
D	Manufacturing	157	47%
E	Transportation, Communication, Electric, Gas, Sanitary Services	54	16%
F	Wholesale Trade	14	4%
G	Retail Trade	20	6%
I	Services	74	22%
Total		334	100%

2.2 Variables

2.2.1 Dependent Variable

The dependent variable is the *Tobin's Q*, a *market-based* measure of performance. The Tobin's Q variable is calculated as the ratio between the firm's market capitalization and the book value of the firm's total assets. This variable has been log transformed to comply with the regression model assumption of a normal distribution of the dependent variable. Using Tobin's Q as proxy for firm financial performance is consistent with past research on corporate governance (Volontè, 2015; Singh, Tabassum, Darwish, & Batsakis, 2018; Setia-Atmaja, 2009; Coles, Daniel & Naveen, 2008; Kalsie & Shrivastav, 2016). In this regard, the use of *accounting-based* measures of firm performance as dependent variables has been criticized in past studies on corporate governance (Singh, Tabassum, Darwish, & Batsakis, 2018; Benston, 1985). Considering that these measures depend on Net Income, some scholars argued that they may be distorted by accounting conventions and rules, which may differ from a sector to another. Therefore, these measures of performance are likely to vary more across sectors rather than from a firm to another (Wernerfelt & Montgomery, 1988; Singh, Tabassum, Darwish, & Batsakis, 2018). Moreover, accounting-based measures do not consider *systematic risk*. Conversely, Tobin's Q accounts for systematic risk and depends on the market capitalization, rather than on Net Income, which minimizes accounting biases (Wernerfelt & Montgomery, 1988). Therefore, it has been considered a more reliable measure of performance.

2.2.2 Independent Variables

The independent variables are *CEO Duality*, *Board Size*, *Board Independence*, and *Percentage of Ownership Concentration*.

CEO Duality

The first independent variable is the board leadership structure. As already mentioned, firms in which the same individual serves as *Chairperson* and *CEO* have a dual board leadership structure. Therefore, *CEO Duality* is the variable representing the board leadership structure and is introduced as a *dummy variable*, coded as "1" if the CEO also serves as the board Chairperson, and "0" otherwise (De Villiers, 2011; Coles, McWilliams, & Sen, 2001; Rechner & Dalton, 1991).

Board Size

The *Board Size* is the second independent variable, representing one of the aspects of the board's composition. It is measured as the total number of directors within the board (Haynes, Zattoni, Boyd, & Minichilli, 2019; Coles, Daniel, & Naveen, 2008; Kalsie & Shrivastav, 2016).

Board Independence

The *Board Independence* is the second aspect of the board's composition, representing the extent to which the board is composed of independent directors. It is measured as the ratio between the number of independent directors and the total number of directors in the board (Bell, Moore, & Filatotchev, 2012; Coles, McWilliams, & Sen, 2001; Garcia-Osma & Guillamon-Saorin, 2011; Pucheta-Martinez & Gallego-Alvarez, 2020). As previously mentioned, the independent directors are those who don't have professional or personal ties to the company or the management (Bell, Moore, & Filatotchev, 2012; Combs, Ketchen Jr., Perryman & Donahue, 2007).

Percentage of Ownership Concentration

The *Percentage of Ownership Concentration* is the last independent variable, used to identify the presence of one or more shareholders who hold a large percentage of shares in the company *(large shareholders)*. It is calculated as the percentage of shares held by the top five shareholders of the firm in the given year (Park, Kim, Chang, Lee, & Sung, 2018).

2.2.3 Control Variables

Control variables are included in the model to have a more complete representation of the factors affecting the dependent variable considered in the study. Therefore, this study controls for those firm-specific variables that, according to previous studies on corporate governance, affect the dependent variable and/or the relationship between the independent and the dependent variables (i.e., Coles, McWilliams, & Sen, 2001; Haynes, Zattoni, Boyd, & Minichilli, 2019; Pucheta-Martinez & Gallego-Alvarez, 2020). The control variables are described as follows.

Firm Size

The *Firm Size* is included in the model as a control variable because it has been demonstrated to have an influence on corporate governance variables and firm performance (Coles,

McWilliams, & Sen, 2001; Haynes, Zattoni, Boyd, & Minichilli, 2019; Volontè, 2015). In this regard, empirical evidence suggested that larger firms tend to have also larger and more independent boards, while smaller firms have smaller and less independent boards (Volontè, 2015). In this study, the *Firm Size* is measured by the natural logarithm of the firm's total assets (Park, Kim, Chang, Lee, & Sung, 2018; Pucheta-Martinez & Gallego-Alvarez, 2020; Cannella Jr., Park, & Lee, 2008).

Firm Age

Past studies found that the *Firm Age* may have an impact on corporate governance and firm performance (see Coad, Holm, Krafft, & Quatraro, 2018; Volontè, 2015). Therefore, it is introduced as a control variable in the models. The *Firm Age* is measured as the natural logarithm of number of years the company is incorporated (Cannella Jr., Park, & Lee, 2008).

Leverage

The firm's *Leverage* is introduced in the model as control variable because it affects the firm's level of risk and financial performance (Tsuruta, 2017; Ahn, Denis, D.J., & Denis, D.K. 2006). The *Leverage* is calculated as the ratio between firm's total long-term debt and total assets (Pucheta-Martinez & Gallego-Alvarez, 2020).

High-Tech Industry

The industry in which the company operates may have an impact on firm performance, as well as on corporate governance. Therefore, this study controls for the industry effect in al the regression models, focusing on whether companies belong to *high-tech industries* (Bell, Moore, & Filatotchev, 2012; Bruton, Filatotchev, Chahine, & Wright, 2010). For the purpose of the analysis, this is a relevant factor to take into consideration, because the uncertain and competitive environment that characterizes the high-tech industries is likely to influence the firm's governance mechanisms and performance (Bell, Moore, & Filatotchev, 2012; Lin, Xie, Hao, & Wang, 2020). Therefore, a *dummy variable* is used to distinguish the high-tech companies. More specifically, I coded as "1" those firms that operate in the following high-tech industries: computer hardware, computer software, semiconductors and printed circuits, biotechnology, telecommunications, and pharmaceuticals (Bell, Moore, & Filatotchev, 2012). Conversely, all the other companies are coded as "0". As previously mentioned, in order to classify the companies according to their industry, the four-digit Standard Industry Classification (SIC) has been used.

2.3 Empirical Model

The model employed to estimate the relationships between the independent variables and firm financial performance is the *Multiple Linear Regression Model*. This is a statistical method that allows to predict the value of a *response* (or dependent) variable, from the values assumed by multiple *explanatory* (or independent) variables. The model computes the *Line Of Best Fit* that minimizes the variances of the independent variables with respect to the dependent variable.

The Multiple Linear regression formula is the following:

$$Tobin\ Q_i = \beta_0 + \beta_1\ Firm\ Size_{\ i} + \beta_2\ Firm\ Age_{\ i} + \beta_3\ Leverage_{\ i} + \beta_4\ High\text{-}Tech\ Industry_{\ i} + \beta_5\ CEO\ Duality_{\ i} + \beta_6\ Board\ Size_{\ i} + \beta_7\ Board\ Independence_{\ i} + \beta_8\ Percentage\ of\ Ownership\ Concentration_{\ i} + \varepsilon$$

Where for each firm *i*:

- *Tobin's Q* is the *response (*or *dependent) variable*,
- β_0 represents the estimated *intercept*, namely, the level of the dependent variable when independent variables are equal to 0,
- β_n, with n = (1,8), are the *beta coefficients*, namely, the slopes associated to each of the dependent variables,
- the *residual error*, ε, represents the margin of error of the model.

This study employs *p-values* to determine the significance of the regression coefficients. More specifically, a confidence interval of 95% (α=0,05) is established to accept or reject the *null hypothesis* H0: $\beta_1 = 0$ that assumes that there is no statistical evidence of the relationship between two variables. Therefore, if the *p-value* is less than 0.05, the linear relationship between the two analysed variables is *statistically significant*.

The regression models have been run on IBM-SPSS software. The first model is run with the control variables. The independent variables (*CEO Duality, Board Size, Board Independence,* and *Percentage of Ownership Concentration)* are added one by one gradually. Lastly, all the variables are introduced in one model, to see how they globally impact on firm financial performance. Henceforth, the model has been run six times.

3. RESULTS

3.1 Descriptive statistics and correlations

Table 2 provides an introductory overview of the data, showing descriptive statistics, such as *maximum* and *minimum values, means,* and *standard deviations.*

The *Tobin's Q* has been log transformed in the analysis and, therefore, the results shown in the table refer to the log transformed values. The log transformed values range from -2.30 to 2.60, and the mean value is 0.39. The original values of *Tobin's Q* are the following: the minimum is 0.1, the maximum is 13.46, and the mean value is 1.49.

Firm Age and *Firm Size* have been log transformed in the analysis. As for Tobin's Q, the results shown in the table refer to the log transformed values. The original average value of *Firm Age* is 30 years, and the original average value of *Firm Size* is close to $18 billion. Not surprisingly, these figures show that, on average, the companies included in the sample are quite stabilized and large. The *Leverage* value ranges from 0, when the company is fully equity financed, to 77%. The latter indicates that long-term debts accounts for 77% of the firm's total assets. The average leverage is 27%, which indicates a relatively low level of debt in the companies belonging to the sample. Lastly, as already mentioned, the *High-Tech Industry* variable is a *dichotomous* variable, which takes the value of 0 or 1. From the table it is possible to notice that 18% of the companies in the sample belongs to the high-tech industry.

Regarding the independent variables, it is interesting to look at the values of the *CEO Duality*. This is a *dichotomous* variable, which takes the value of 0 or 1. The proportion of firms in which the CEO and the Chairperson are covered by the same person is about 51%. This figure supports the evidence that a dual leadership structure has been historically embedded in the US tradition and remains a widespread practice.

Looking at the data about *Board Size* and *Board Independence*, it is possible to see that the boards have on average 11 members, and that they are composed of an average of 83% independent directors. These findings are in line with the Good Governance Codes, which recommend for large companies a board of directors consisting of 9 to 15 members and a majority of independent directors on the board.

Finally, the *Percentage of Ownership Concentration* variable ranges from 0,01% and 89%. It exhibits an average value of about 22%, which reflects the prevalence of a fragmented ownership structure among U.S. companies.

Table 2 – Descriptive Statistics

Variable	Minimum	Maximum	Mean	St. Deviation
Tobin's Q *	-2.30	2.60	0.39	0.85
Firm Age *	0	4.94	3.40	0.82
Firm Size *	13.47	19.70	16.72	1.19
Leverage	0	0.77	0.27	0.15
High-Tech Industry	0	1	0.18	0.38
CEO Duality	0	1	0.51	0.50
Board Size	5	16	10.69	1.82
Board Independence	0.33	1	0.83	0.09
% Ownership Concentration	0.01	89.49	21.91	18.82

Note: Data about Firm Size in thousands of dollars

* Variables are log transformed

Table 3 reports the Pearson Correlations between the variables included in the regression models. The Pearson Correlation is a measure of *linear correlation* between two variables. It is calculated as the ratio between the *covariance* of two variables and the product of their *standard deviations* and assumes values between −1 and 1. The table exhibits acceptable levels of correlation among all the predictors.

However, in order to avoid potential *bias* in the analysis, I also performed a *Multicollinearity Diagnostic*. This test is widely used in empirical studies to check the occurrence of elevated *intercorrelations* between two or more predictors in the regression model. In the event of strong intercorrelation between two predictors, the interpretation of the estimated *beta coefficients* of the regression model becomes problematic. As a matter of fact, it is difficult to isolate the single effect of two or more highly correlated independent variables on the dependent variable. In order to test the presence of strong intercorrelation between the predictors, I used the *Variance Inflation Factor (VIF).* This factor is calculated as $1 / (1 - R^2)$, where the R^2 is the *coefficient of determination*, and it takes value ≥ 1.

There are no definite norms to establish an unequivocal threshold for identifying multicollinearity, because it often varies depending on the data and the objectives of the analysis to be conducted. However, a general guideline has been established among

researchers, which states that a *VIF* that do not exceed the value of 10 indicates that the multicollinearity hypothesis can be disregarded. Conversely, if it is equal or higher than 10 (VIF $\geq$ 10) the independent variable may encounter multicollinearity issues (see Mela & Kopalle, 2002). The results of the Multicollinearity Diagnostics exhibited in *Table 4* show that the *VIF* is around 1 for all the predictors. Therefore, it is reasonable to conclude that none of the independent variables exhibits multicollinearity problems.

Table 3 – Pearson Correlations

	Tobin's Q*	Firm Age*	Firm Size*	Leverage	High-Tech Industry	CEO Duality	Board Size	Board Independence	% Ownership Concentration
Tobin's Q*	1	-	-	-	-	-	-	-	-
Firm Age*	0.069	1	-	-	-	-	-	-	-
Firm Size*	-0.542	0.066	1	-	-	-	-	-	-
Leverage	-0.284	-0.008	0.178	1	-	-	-	-	-
High-Tech Industry	-0.231	-0.014	-0.030	-0.121	1	-	-	-	-
CEO Duality	-0.293	0.172	0.305	0.010	-0.061	1	-	-	-
Board Size	0.214	0.219	0.120	0.048	0.017	-0.028	1	-	-
Board Independence	0.290	0.109	-0.086	-0.048	0.183	-0.068	0.155	1	-
% Ownership Concentration	-0.156	-0.067	0.029	0.044	-0.043	0.005	-0.029	-0.342	1

* Variables are log transformed

Table 4 – Multicollinearity Diagnostics

	VIF					
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Firm Age *	1.005	1.031	1.053	1.020	1.010	1.098
Firm Size *	1.038	1.142	1.049	1.046	1.039	1.169
Leverage	1.048	1.050	1.049	1.048	1.049	1.053
High-Tech Industry	1.015	1.019	1.016	1.050	1.017	1.053
CEO Duality	-	1.138	-	-	-	1.152
Board Size	-	-	1.065	-	-	1.099
Board Independence	-	-	-	1.057	-	1.219
% Ownership Concentration	-	-	-	-	1.009	1.137

* Variables are log transformed

3.2 Regression results

As previously mentioned, Multiple Linear Regression Models are employed to test the hypotheses. The results of the regression analysis are presented in *Table 5.*

First of all, results show that all the models employed in this empirical analysis are statistically significant (*p-value* <0.001). Moreover, the regression models exhibit *R-square* values ranging from 38% to 49%. The *R-square* indicates the percentage of variation in the dependent variable that can be explained by the independent variables included in the regression model. Therefore, it is possible to conclude that all the models have significant predictive power.

Model 1 includes only the control variables: *Firm Size, Firm Age, Leverage*, and *High-Tech Industry*. This model provides evidence of a positive and significant relationship between *Firm Age* and *Tobin's Q* (β= 0.108, *p-value* < 0.05), a negative relationship between *Firm Size* and *Tobin's Q* (β= -0.367, *p-value* < 0.001) and a negative relationship between *Leverage* and *Tobin's Q* (β= -0.942, *p-value* < 0.001). Finally, it shows a positive relationship between *High-Tech Industry* and *Tobin's Q* (β=0.441, *p-value* < 0.001), meaning that the industries operating in the high-tech industry show higher performance than the one operating in non-high-tech industries. Model 1 is statistically significant (*p-value* < 0.001) and has a *R-square* of 38%.

Model 2 is developed to test the first hypothesis, concerning the relationship between CEO duality and firm performance. Therefore, the *CEO Duality* variable has been added as independent variable to Model 1. The results show that *CEO Duality* has a negative and significant relationship with *Tobin's Q* (β= -0.272, *p-value* < 0.001). Considering that CEO duality is a dichotomous variable, the interpretation of this finding is that firms that do not have a dual board leadership structure recorded higher Tobin's Q, while the firms with CEO duality

performed worse. This result confirms the hypothesis of a negative relationship between CEO duality and firm performance. Model 2 is statistically significant (*p-value* < 0 .001) and has a *R-square* of 40%.

Model 3 introduces the *Board Size* variable to test its direct relationship with firm performance assumed in the second hypothesis. The model detects a positive and significant relationship between *Board Size* and *Tobin's Q* (β=0.129, *p-value* <0.001). Therefore, we can confirm the second hypothesis, according to which larger boards are beneficial for firm performance. Model 3 is statistically significant (*p-value* < 0.001) and has a *R-square* of 45%.

Model 4 exhibits a positive and significant relationship between *Board Independence* and *Tobin's Q* (β=1.811, *p-value* < 0.001). Hence, it is possible to conclude that the firms with more independent boards experienced higher Tobin's Q than firms with less independent boards, confirming the third hypothesis. The results show that also Model 4 is statistically significant (*p-value* < 0 .001) and has a *R-square* of 41%.

Model 5 introduces the *Ownership Concentration* in the model. The results exhibit an almost null but statistically significant relationship between the *Percentage of Ownership Concentration* and *Tobin's Q (*β= -0.005, *p-value* < 0.01). It means that the ownership concentration of the firm has a slightly negative impact on firm performance. Therefore, the hypothesized positive relationship between *Ownership Concentration* and *Tobin's Q* is not confirmed by the empirical results and the fourth hypothesis is rejected. Model 5 is statistically significant (*p-value* < 0 .001) and has a *R-square* of 38%.

Finally, Model 6 includes all the variables, showing consistent results with the previous models. All hypotheses except the fourth are supported by Model 6. The relationship between *CEO Duality* and *Tobin's Q* is negative and statistically significant, the relationship between *Board Size* and *Tobin's Q* is positive and statistically significant, the relationship between *Board Independence* and *Tobin's Q* is positive and statistically significant, and the one between *Percentage of Ownership Concentration* and *Tobin's Q* is slightly negative and statistically significant.

Table 5 – Regression results for Tobin's Q

Dependent Variable: Tobin'sQ*	**Model 1**	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**
Firm Age *	0.108 *	0.133**	0.048	0.084	0.100*	0.053
	(0.045)	(0.045)	(0.044)	(0.044)	(0.045)	(0.043)
Firm Size *	-0.367***	-0.332***	-0.386***	-0.354***	-0.364***	-0.347***
	(0.032)	(.033)	(0.030)	(0.031)	(0.031)	(0.031)
Leverage	-0.942***	-0.986***	-0.996***	-0.931***	-0.919***	-1.003***
	(0.250)	(0.246)	(0.235)	(0.242)	(0.247)	(0.227)
High-Tech Industry	0.441***	0.421***	0.424***	0.360***	0.430***	0.350***
	(.098)	(0.096)	(0.092)	(0.097)	(0.097)	(0.091)
CEO Duality		-0.272***	-	-	-	-0.214**
		(0.078)	-	-	-	(0.072)
Board Size			0.129***	-	-	0.113***
			(0.020)	-	-	(0.019)
Board Independence				1.811***	-	1.220**
				(0.390)	-	0.393)
% Ownership Concentration					-0.005**	-0.003*
					(0.002)	(0.002)
Constant	6.339***	5.831***	5.516***	4.714***	6.339***	4.184***
	(0.535)	(0.546)	(0.520)	(0.626)	(0.535)	(0.620)
Number of companies	334	334	334	334	334	334
R square	0.379	0.401	0.450	0.417	0.379	0.493
R square adjusted	0.371	0.392	0.441	0.408	0.393	0.480
F	50.20	43.99	53.59	46.97	42.48	39.43
Significance	***	***	***	***	***	***

Note: Standard errors in parentheses

* Variables are log tranformed

*** $p < .001$

** $p < .01$

* $p < .05$

An assessment of the potential impact of each data point on the regression analysis has been implemented for each model, in order to test the presence of possible *influential data points* that could alter the analysis. *Influential data points* are observations that exert an unusually strong effect on the results of the regression analysis. As such, they can shift the *Line of Best Fit* of a regression, reducing the validity of the model. The *Cook's distance* has been used to quantify the influence of an observation on the regression results. This measure is commonly used to identify influential data points when performing a Multiple Regression Analysis. The results are shown in *Figure 1-6* in the *Appendix.* Although there are no fixed rules for the identification of an influential point, some guidelines have been suggested for establishing when it is likely that a data point is *influential*. If *Cook's distance* is greater than 0.5, the data point is could be influential, and therefore further investigation would be appropriate. If *Cook's distance* is greater than 1, the data point is probably influential. Generally, a *Cook's distance* < 1 can be considered not problematic for the regression analysis (Cook & Weisberg, 1982).

Looking at the scatterplots exhibited in the *Appendix- Figure 1*, it's possible to notice that the values of the *Cook's distance* are always below 0.06, indicating that there are no influential observations in the models that could alter the analysis.

4. DISCUSSION

This research aimed at studying how internal corporate governance mechanisms influence firm financial performance. According to most of the literature on corporate governance and to the Agency Theory, the positive impact of these mechanisms on firm financial performance lies in the role that they cover in addressing the agency problems that affect modern corporations. Therefore, this study analyzes the impact of some characteristics of the *board of directors* and of the *ownership concentration* on firm financial performance using Multiple Linear Regression Models on a sample of 500 US-listed firms. The results of the empirical analysis demonstrated that specific characteristics of the *board of directors* and the presence of *large shareholders* act as important corporate governance mechanisms, significantly impacting firm performance.

First of all, the board leadership structure in which the *CEO* also covers the role of the *Chairperson* is found to be detrimental for firm performance, because the increased power resulting from the duality could lead him to behave opportunistically, at the detriment of the shareholders and the firm. Moreover, the *entrenchment* of the CEO at the top of the firm may undermine the effectiveness of the board's supervision role, exacerbating agency conflicts and damaging firm performance (Finkelstein & D'Aveni, 1994). This finding is in line with previous empirical studies (Rechner & Dalton, 1991; Gupta, Han, Nanda, & Silveri, 2018; Veprauskaitè & Adams, 2013; Haynes, Zattoni, Boyd, & Minichilli, 2019).

This study also demonstrates that the *Board Size* is positively related to firm performance. These results support the idea that larger boards are beneficial for the enterprise because it is likely that they have enough independent directors and an appropriate diversity of skills and experiences to properly carry out their role (Kiel & Nicholson, 2003; Coles, Daniel, & Naveen, 2008; Fama & Jensen, 1983). As argued by Agency Theory, more directors within the board would empower the *monitoring role* of the board of directors, enhancing firm performance (Fama, 1980). Therefore, these findings complement the strand of literature that investigated the effect of board size on firm performance and found a positive relationship between the two (Coles, Daniel, & Naveen, 2008; Pucheta-Martinez & Gallego-Alvarez, 2020; Kalsie & Shrivastav, 2016; Kiel & Nicholson, 2003). At the same token, this study represents a step forward in rejecting the largely accepted view that considered larger boards as problematic, claiming that they may encounter communication and coordination issues and difficulties in reaching agreements (Boivie, Bednar, Aguilera, & Andrus, 2016; Yermack, 1996; Lipton & Lorsch, 1992).

Furthermore, this research shed light on how another characteristic of the board of directors, namely, its degree of *independence*, impacts on firm performance, demonstrating that more independent boards are beneficial for firm performance. These findings fit into the debate about independent directors. On the one hand, they are recognized by several scholars to cover an important role in ensuring an effective board oversight, protecting shareholders' interests, and mitigating agency conflicts (Dalton, Daily, Ellstrand, & Johnson, 1998; Coles, McWilliams, & Sen, 2001). In fact, since they have no ties with management and the company, independent directors are better able to question executives and offer timely, unbiased oversight (Dalton D.R., Hitt, Certo, & Dalton, C.M., 2007). On the other hand, it has been argued that independent directors may fail to perform their role because they do not have an extensive knowledge of the company and the business compared to *executive* directors. Moreover, as they are usually engaged in multiple boards, it has been claimed that they may not devote sufficient time and effort to analyze the manager's activity (Volontè, 2015). Therefore, finding a positive relationship between board independence and firm performance, this study provides further support to the idea that they cover a crucial role in overseeing the management and enhancing firm performance. These findings are in line with other studies that investigated this relationship (Coles, McWilliams, & Sen, 2001; Tanna, Pasiouras, & Nnadi, 2011; Muravyev, Tavalera, & Weir, 2002).

Lastly, contrary to expectations, empirical results demonstrated a negative relationship between the *Percentage of Ownership Concentration* and firm performance. Therefore, although the regression coefficient of the model is rather low, the hypothesis of a positive relationship between ownership concentration and firm performance is rejected. This result might be related to the fact that this study focused on the agency conflicts occurring between *managers* and *shareholders*, the so-called *Type I agency problem,* disregarding the existence of possible conflicts of interest between majority and minority shareholders - *Type II agency problem* (Fama, 1980, Fama & Jensen, 1983). Therefore, following the constructs of Agency Theory, it has been hypothesized that the presence of *large shareholders* may mitigate agency conflicts between managers and shareholders because they have more incentive and power to exercise control over the manager's activities. Nevertheless, considering the actual possibility that majority shareholders may have conflicting interests with those of minority shareholders, it is not unreasonable to expect that the presence of large shareholders may aggravate rather than mitigate agency conflicts, worsening firm performance. The blockholder might be incentivized to pursues his own *private benefits* to the detriment of minority shareholders and firm value, for example, diverting the company's resources to his advantage (Edmans, 2014;

Shleifer & Vishny, 1997). Moreover, large shareholders might discourage the company from undertaking risky but value-adding projects, because they are more concerned about idiosyncratic risk than minority shareholders (Edmans, 2014).

However, conflicts of interests between majority and minority shareholders are not the only reason that could explain this unexpected negative relationship between ownership concentration and firm performance. In this regard, Burkant, Gromb & Panunzi (1997) provided a valuable argument, claiming that ownership concentration may be detrimental for firm's value because of its impact on *managerial discretion*. On the one hand, large shareholders are important to monitor the management and ensure the maximization of the firm's value. However, a strict supervision of management by large shareholders "constitutes *ex ante* an expropriation threat that reduces managerial initiative" in undertaking value-creating investments (Burkant, Gromb & Panunzi, 1997: 1). In other words, the manager might have less incentive to commit himself to seek new investments and undertake projects if he knows that shareholders may oppose and interfere with his decisions. Therefore, a dispersed ownership structure may be more beneficial for firm's value since it ensures higher managerial initiative in searching for and undertaking valuable investments.

4.1 Contributions to theory and practice

This work provides some contributions to the literature on Corporate Governance, fitting into the ongoing debate on the role of the board of directors in favor of the idea that it covers a key role in overseeing top management, mitigating agency conflicts, and enhancing firm performance (Fama, 1980; Fama, & Jensen, 1983). Accordingly, this study provides an additional reason for rejecting the opposite perspective that sees it as a passive body that merely ratifies the CEO's decisions (Westphal & Fredrickson, 2001). More specifically, this research has important implications for the literature because it provides valuable empirical support for Agency Theory but also challenges it to some extent. It supported the Agency Theory founding that non-CEO duality, larger boards and highly independent boards are beneficial for firm performance, but it has also questioned it by finding that *large shareholders* may damage firm performance rather than enhance it.

This study also has some practical implications. As previously mentioned, it demonstrated that having a clear division between the role of CEO and Chairperson, a large enough number of directors and a substantial prevalence of independent directors in the boardroom are powerful actions to improve firm financial performance. Therefore, when designing the board

of directors, practitioners are encouraged to thoughtfully consider those features of the board of directors, because they may act as relevant corporate governance mechanisms for ensuring effective board oversight, mitigating agency conflicts, and enhancing firm performance. At the same token, practitioners should carefully examine the ownership structure of the firm, in order to identify possible agency conflicts occurring between shareholders and managers, as well as between majority and minority shareholders. Moreover, these findings may also have implications for policy makers, as it seems reasonable to conclude that regulation promoting good governance practices, including having non-CEO duality and large and mostly independent boards, can contribute to mitigate agency conflicts, ultimately improving firm performance.

4.2 Limitations and future research

This empirical study has some limitations that impose caution in the interpretation of the results. First of all, the analysis was conducted on a sample of large US-listed firms, implying that the reliability of the results is constrained to this kind of companies. The corresponding results cannot be generalized either to smaller firms or to other countries. In fact, the country's institutional and cultural environment may strongly influence the relationship between internal governance mechanisms and performance, leading to different results (La Porta, Shleifer, & Vishny, 1998; Aguilera, & Jackson, 2003). Similarly, the size of the firm is another element that is likely to influence those relationships within the firm (Coles, McWilliams, & Sen, 2001; Haynes, Zattoni, Boyd, & Minichilli, 2019; Volontè, 2015). Therefore, future studies might consider either an international sample, or a sample of smaller companies. In addition, it is fair to mention that, due to data unavailability, the sample size is not as large as other studies that analyzed the relationships between corporate governance mechanisms and firm performance in previous literature. Hence, a possible improvement may be represented by studying the same relationship on larger sample of firms.

This study focused on investigating the impact of only two internal corporate governance characteristics on firm performance. However, there are other mechanisms that may influence firm performance addressing agency problems, such as *internal control and risk management systems* (see Root, 2000) and *incentive plans* (see Filatotchev & Allcock, 2010; Hall, 2000).

Furthermore, this study focused on the *direct relationship* between each mechanism and firm performance. Future research could study how those mechanisms *interact*, or how they are able to act as *substitutes* for each other in addressing agency problems within the firm and increasing

firm performance (Misangyi & Acharya, 2014; Rediker & Seth, 1995; Ward, Brown, & Rodriguez, 2009).

Finally, this study relies on *cross-sectional* data for the year 2019 and, therefore, allows to observe the relationship between variables at a certain point in time. However, it is fair to mention that panel data might be more informative and provide greater efficacy of estimates. Therefore, conducting a *longitudinal* analysis of the same relationships could be helpful to identify and measure effects that cannot be observed by *cross-sectional* analyses.

CONCLUSIONS

This paper studied the relationships between internal corporate governance mechanisms and firm financial performance. The empirical results supported Agency Theory, exhibiting that non-CEO duality, a sufficiently large board, and a high degree of independence in the boardroom are beneficial for firm performance. On the other hand, this study challenged the initial expectations, revealing that ownership concentration is slightly negatively related to firm performance. These empirical results advance our knowledge on corporate governance mechanisms in a context of large and listed US companies, further endorsing the view according to which the board of directors has a fundamental role in supervising top management, enhancing firm performance. As such, this study contributes to both corporate governance theory and practice. To build a broader outlook on the way these governance mechanisms affect firm's results, we foster further corporate governance scholars to expand the literature providing new empirical evidence.

APPENDIX

Figure 1 – Cook's Distance Model 1

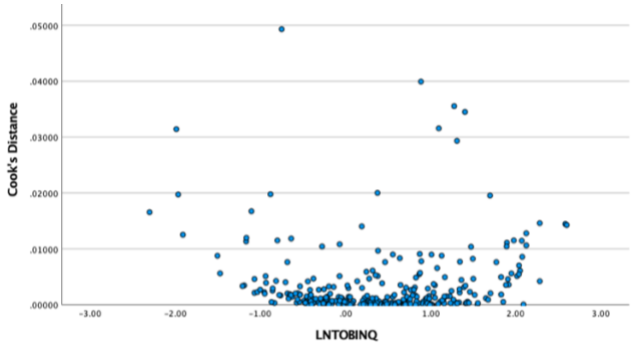


Figure 2 – Cook's Distance Model 2

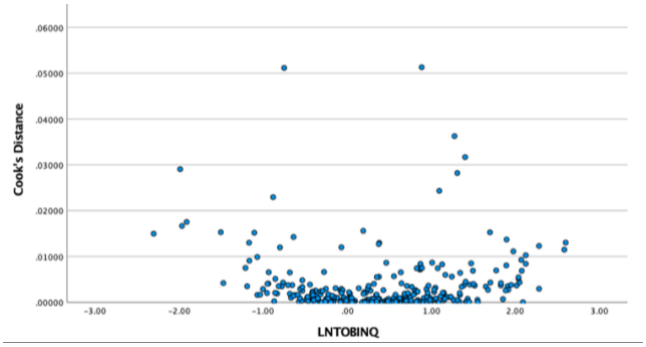


Figure 3 – Cook's Distance Model 3

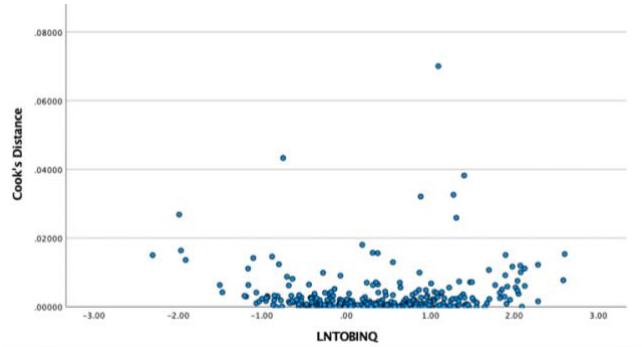


Figure 4 – Cook's Distance Model 4

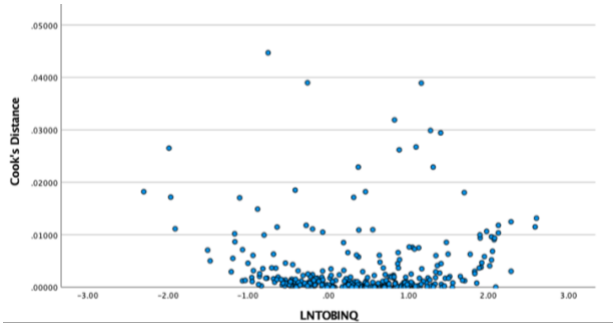


Figure 5 – Cook's Distance Model 5

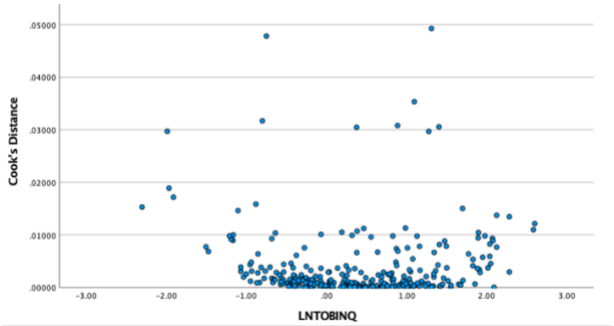
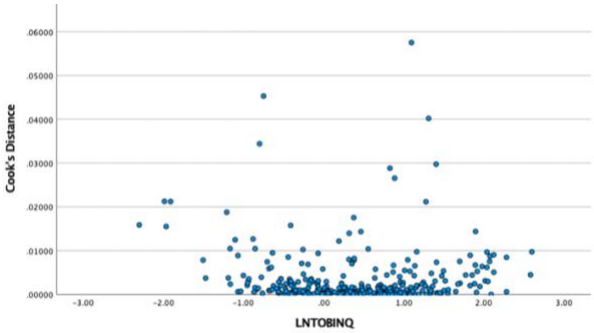


Figure 6 – Cook's Distance Model 6



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EXECUTIVE SUMMARY

INTRODUCTION

A prominent debate in strategic management and corporate governance literatures addresses the conflict of interest arising from the separation of ownership and control in large publicly held companies. In those companies an agency relationship occurs between the *shareholders* and the *manager*: the shareholders delegate to managers the responsibility to run the business, acting in the best interest of the shareholders (Fama, 1980; Fama & Jensen, 1983). However, it is likely that the interests of the two actors do not align, and that the manager engages in opportunistic behavior to the detriment of firm performance. In light of this concern, one of the most debated issues among scholars and practitioners addresses how to properly design the corporation and implement governance mechanisms aimed at aligning the interests of shareholders and managers, enhancing firm performance. Drawing mainly on Agency Theory, past research has extensively investigated how corporate governance mechanisms influence firm performance, but it reported mixed results (Dalton, Daily & Ellstrand, 1998).

Therefore, this study seeks to provide further insights on corporate governance mechanisms, investigating how two of the main internal corporate governance mechanisms, namely, the *board of directors* and *large shareholders*, contribute to mitigate agency problems, enhancing firm performance. Four hypotheses are tested using Multiple Linear Regression Models and relying on a sample of US listed companies composing the S&P 500 index. The results show that some characteristics of the board, such as *CEO duality, board size,* and *board independence,* and the *ownership structure* of the firm significantly impact firm performance.

Therefore, our study provides several contributions to corporate governance theory, fitting into the ongoing debate on the role of the board of director, in favor of the idea that board of director covers a key role in overseeing top management. This study also provides some practical contributions. When designing the board of directors, practitioners are encouraged to consider the various features of the board of directors that might be helpful in solving agency conflicts and maximizing the value of the enterprise.

1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

1.1 Agency Theory

In accordance with most of the empirical research on corporate governance, the Agency Theory (Jensen & Meckling, 1976; Fama & Jensen, 1983) is the central theoretical framework

that guides this study. Agency Theory focuses on the existence and possible settlement of the various problems arising from the *agency relationships* existing in modern corporations. An agency relationship occurs when an individual (the *agent*) acts as a representative of another individual (the *principal*). In this situation, the agents are likely to engage in opportunistic behavior, since they are assumed to be rational actors who maximize their own utility and have interests that differ from those of the principals. This relationship is likely to cause some *agency costs* for the firm and be detrimental for firm performance (Jensen, & Meckling, 2009).

According to Agency Theory, the type of agency problem affecting the firm depends also on its *ownership structure*. Firms with a dispersed structure experience agency conflicts between *managers* and *shareholders* because of the separation between ownership and control, whereas when the sole owner of the company is the manager, agency problems do not exist to any extent (Fama & Jensen, 1983). This study focuses on large U.S. publicly traded companies, which are characterized by a fragmented ownership structure. This structure results in the separation between *ownership* and *control*: the shareholders (*principals*) do not exercise their control and voting rights and delegate the power to the manager (*agent*), who should act in the interest of the shareholders. Moreover, because of the small share held, the individual shareholder is not interested in carrying out, or even supervising, the daily activities of the business he owns (Walsh & Seward, 1990). Therefore, it is likely that managers act in their own self-interest at the expense of the shareholders.

In order to attenuate these agency conflicts, Fama & Jensen (1983) suggested the establishment of specific *corporate governance mechanisms* intended to reduce agents' self-discretion to pursue their own interests at the expense of the principals. More specifically, they argued that the firm can rely on both *internal* and *external* mechanisms. In this paper, I investigate how two of the main *internal* corporate governance mechanisms, namely, the *board of directors* and the presence of *large shareholders,* contribute to mitigate agency problems, enhancing firm performance.

1.2 Board of directors as corporate governance mechanism

The duty of providing appropriate incentives for aligning the interests of agents and principals is primarily assigned to the board of directors, which represents the main internal mechanism of control of the top management (Combs, Ketchen Jr., Perryman, & Donahue, 2007; Walsh & Seward, 1990; Daily & Cannella, 2003; Fama & Jensen, 1983). The literature on corporate governance has identified three main roles of the board of directors: the *strategic role*, the *resource dependence role,* and the *monitoring role.* In accordance with Agency Theory, this

study argues that the board's involvement in attenuating agency problems and enhancing firm performance is primarily rooted in its *monitoring role* (Hillman & Dalziel, 2003; Fama & Jensen, 1983; Dalton D., Hitt, Certo, & Dalton C., 2007). As a matter of fact, the Agency Theory emphasizes the oversight role of the board among all others, arguing that the board of directors is fundamental in mitigating agency conflicts and enhancing firm performance. In this study, I focus on two aspects of the board of directors: the *board leadership structure* and the *board composition* (*board size* and *board independence*).

1.2.1 Board leadership structure

The separation of the roles of *Chairperson* and *Chief Executive Officer* in the firm is an attribute of the board of directors that can cover an important role in attempting to mitigate agency conflicts in modern organizations (Fama,1980; Jensen & Meckling, 1976; Finkelstein & D'Aveni, 1994). When the same individual serves as both the Chairperson and CEO in the firm, we refer to a *dual* board leadership structure, or *CEO duality*.

The leadership structure of the board of directors involves one of the enterprise's most crucial power relations. Therefore, the dual leadership structure has been questioned as an inappropriate way of organizing this important relationship, as it results in a substantial centralization of power in the hands of the CEO (Coles, McWilliams, & Sen, 2001; Finkelstein & D'Aveni, 1994; Duru, Iyengar & Zampelli, 2016; Certo, Lester, Dalton & Dalton, 2006). From an Agency Theory perspective, CEO Duality is detrimental for firm performance, because the concentration of power in the hands of the CEO may increase the risk of opportunism (Fama,1980; Jensen & Meckling, 1976; Finkelstein & D'Aveni, 1994). Moreover, if the role of Chairperson is held by the CEO, the board's effectiveness in overseeing top management is inevitably compromised (Finkelstein & D'Aveni, 1994; Mallette & Fowler, 1992).

Several empirical research have investigated the link between CEO duality and firm performance (i.e., Baliga, Moyer & Rao, 1996; Duru, &Iyengar, 2016; Rechner & Dalton, 1991; Boyd, 1995; Dalton, Daily, & Ellstrand, 1998). Most of the empirical results provide support to the idea that CEO duality is detrimental for firm performance (Rechner & Dalton, 1991; Gupta, Han, Nanda, & Silveri, 2018; Veprauskaitè & Adams, 2013; Haleblian & Finkelstein, 1993). Therefore, according to Agency Theory and past empirical research, I formulate the following hypothesis:

H1: There is a negative relationship between CEO duality and firm performance

1.2.2 Board size

The *board size* is another crucial attribute of board composition that could address agency conflicts and impact firm performance (Finkelstein & Mooney, 2003; Yermack, 1996; Pearce & Zahra, 1991). Generally, large boards are known to facilitate the establishment and development of relationships with the external environment, and to offer a wider range of capabilities and different perspectives.

From an Agency Theory perspective, more directors within the board would empower the *monitoring role* of the board of directors, enhancing firm performance (Kiel & Nicholson, 2003; Coles, Daniel, & Naveen, 2008; Fama & Jensen, 1983). As a matter of fact, larger boards are more effective in counterbalancing and controlling a powerful CEO, because it will be harder for the CEO to exert influence over a higher number of directors (Shivdasani & Yermack, 1999; Haynes, Zattoni, Boyd, & Minichilli, 2019). Moreover, they tend to have more independent directors, who cover an important role to ensure the effectiveness of the board oversight activity (Reeb & Upadhyay, 2010; Coles, Daniel, & Naveen, 2008; Schellenger, Wood & Tashakori; 1989). The impact of board size on performance have been analyzed also by referring to the degree of *heterogeneity* within the board. Some scholars argued that greater heterogeneity would increase the efficiency of the board in performing its supervisory role (Fama, 1980; Adams & Ferreir, 2009; Erhardt, Werbel, & Shrader, 2003). Therefore, a larger board would be beneficial for firm performance to the extent that it implies more heterogeneity of knowledge, competencies, and skills.

Providing support to the Agency Theory, most of the empirical research found a positive relationship between board size and firm performance (Coles, Daniel, & Naveen, 2008; Pucheta-Martinez & Gallego-Alvarez, 2020; Kalsie & Shrivastav, 2016; Kiel & Nicholson, 2003). Therefore, following Agency Theory and in accordance with empirical results, I formulate the following hypothesis:

H2: There is a positive relationship between board size and firm performance

1.2.3 Board independence

The *board independence* is the last aspect of the board composition analyzed in this study. In accordance with previous studies on the topic, this study refers to board independence as the extent to which the board is composed of *independent directors* (Pucheta-Martinez & Gallego-Alvarez, 2020; Combs, Ketchen Jr., Perryman & Donahue, 2007). Independent directors are those who do not currently hold, or held in the past, any other position within the company and

"who do not have substantial business or family ties with management" (Combs, Ketchen Jr., Perryman & Donahue, 2007).

From an Agency Theory standpoint, a board with a high number of independent members would be more effective in supervising top management, minimizing agency problems between managers and shareholders and enhancing firm performance (Fama, 1980; Fama & Jensen, 1983). In accordance with this view, some scholars argued that independent directors occupy a stronger *structural position* within the firm to control the management and that, therefore, they are more capable to provide objective judgements than non-independent directors (Neville, Byron, Post, & Ward, 2019). Moreover, independent directors are more incentivized to perform their monitoring role effectively because they are regulated by the market for their services, which evaluates them based on their performance as monitoring experts (Fama, 1980; Fama & Jensen, 1983). Finally, independent directors are found to be more prone to dismiss a powerful CEO in case of disappointing performance than other directors (Weisbach, 1988; Laux, 2008), which is an important factor of board oversight effectiveness (Duru, Iyengar, & Zampelli, 2016).

Most of the empirical evidence provide support to the Agency Theory, demonstrating that there is a positive relationship between board independence and firm performance (Coles, McWilliams, & Sen, 2001; Pasiouras, & Nnadi, 2011; Muravyev, Tavalera, & Weir, 2002). Therefore, according to Agency Theory and past empirical research, I formulate the following hypothesis:

H3: There is a positive relationship between board independence and firm performance

1.2 Large shareholders as corporate governance mechanism

According to Agency Theory, there is a positive relationship between *ownership concentration* and *value creation*. When the ownership structure is *fragmented*, the separation between ownership and control occurs, implying the risk that the manager acts opportunistically to the detriment of the enterprise value creation. Conversely, when the sole owner of the firm is the manager, the value of the firm is maximized because no conflict of interest occurs. Furthermore, a third case may occur when the ownership structure is *concentrated* in the hands of few shareholders. Although ownership and control are separated, in this case the risk of opportunism is mitigated because *large shareholders* are incentivized to control that the manager maximizes enterprise value. In light of this, the Agency Theory perspective argues that the presence of *large shareholders* acts as a governance mechanism that can reduce top management's opportunism, enhancing firm performance.

As previously mentioned, a fragmented ownership structure could result in *free riding problems* among shareholders. These problems occur when small shareholders do not actively monitor the management, hoping that the other shareholders will do it on their behalf. As a consequence, the risk of opportunism is elevated. This is the so-called *principal-agent problem* – or *Type I agency problem* – existing in Anglo-American widely held companies. In this context, the presence of one or more shareholders who hold a quite large numbers of stocks *(large shareholders)* addresses this agency problem, acting as corporate governance mechanisms and enhancing firm performance (Fama, 1980; Fama & Jensen, 1983). In fact, large shareholders are more incentivized to supervise the managers, because they hold a relevant percentage of firm's capital (Edmans, 2014; Shleifer & Vishny, 1986). Moreover, large shareholders have sufficient voting rights to prevent management from behaving opportunistically at the detriment of shareholders' interests (Edmans, 2014; Brickley, Lease, & Smith, 1988).

Several empirical studies investigated the relationship between ownership concentration and firm performance and found that a more concentrated structure is positively related with firm performance (i.e., Konijn, Kräussl & Lucas, 2011; Yeh, 2014; Coles, Mc. Williams, & Sen, 2001; Park, Kim, Chang, Lee, & Sung, 2018). Therefore, according to Agency Theory and past empirical research, I formulate the following hypothesis:

H4: There is a positive relationship between ownership concentration and firm performance

2. METHODOLOGY

2.1 Sample and data collection

The hypotheses are tested using secondary *cross-sectional* data in the year 2019 of a sample of firms composing the *Standard & Poor's 500 Index.* The data have been collected using *BoardEx* and *Orbis*, high-quality databases that gather comparable and reliable data on firms around the world. Following prior research on the topic, all the banks, financial institutions, insurance companies and real estate companies have been excluded from the analysis (e.g., Gupta, Han, Nanda, & Silveri, 2018; Bertrand & Schoar, 2003). These entities must comply with *ad hoc* accounting rules, and they are more strictly regulated than industrial corporations. Therefore, they may cause difficulties in the interpretation of the results of the analysis. The *four-digit Standard Industry Classification (SIC)* retrieved from *Orbis* database has been used to identify the firms operating in those sectors. I removed in total 142 firms classified under the division *H) Finance, Insurance, and Real Estate*. Thereafter, I excluded from the sample

14 companies for which complete data on the board size and board independence were not available, and 10 companies for which the data about ownership concentration were missing. Therefore, the final sample consists of 334 companies.

2.2 Variables

2.2.1 Dependent Variable

The dependent variable is the *Tobin's Q*, a market-based measure of performance calculated as the ratio between the firm's market capitalization and the book value of the firm's total assets (Volontè, 2015; Singh, Tabassum, Darwish, & Batsakis, 2018; Setia-Atmaja, 2009; Coles, Daniel & Naveen, 2008; Kalsie & Shrivastav, 2016).

2.2.2 Independent Variables

The independent variables are the *CEO Duality*, the *Board Size*, the *Board Independence*, and the *Percentage of Ownership Concentration*.

CEO Duality is the variable representing the board leadership structure and is introduced as a *dummy variable*, coded as "1" if the CEO also serves as the board Chairperson, and "0" otherwise (De Villiers, 2011; Coles, McWilliams, & Sen, 2001; Rechner & Dalton, 1991).

The *Board Size* is measured as the total number of directors within the board (Haynes, Zattoni, Boyd, & Minichilli, 2019; Coles, Daniel, & Naveen, 2008; Kalsie & Shrivastav, 2016).

The *Board Independence* represents the extent to which the board is composed of independent directors. It is measured as the ratio between the number of independent directors and the total number of directors in the board (Bell, Moore, & Filatotchev, 2012; Coles, McWilliams, & Sen, 2001; Garcia-Osma & Guillamon-Saorin, 2011).

The *Percentage of Ownership Concentration* is used to identify the presence of one or more shareholders who hold a large percentage of shares in the company *(large shareholders)*. It is the percentage of shares held by the top five shareholders of the firm in the given year (Park, Kim, Chang, Lee, & Sung, 2018).

2.2.3 Control variables

This study controls for firm-specific variables that, according to previous studies on corporate governance, affect the dependent variable and/or the relationship between the independent and dependent variables (i.e., Coles, McWilliams, & Sen, 2001; Haynes, Zattoni, Boyd, & Minichilli, 2019; Pucheta-Martinez & Gallego-Alvarez, 2020). The control variables are the following:

- *Firm Size*: it is measured by the natural logarithm of the firm's total assets (Volontè, 2015; Park, Kim, Chang, Lee, & Sung, 2018; Pucheta-Martinez & Gallego-Alvarez, 2020; Cannella Jr., Park, & Lee, 2008).
- *Firm Age*: it is measured as the natural logarithm of number of years the company is incorporated (Coad, Holm, Krafft, & Quatraro, 2018; Volontè, 2015; Cannella Jr., Park, & Lee, 2008).
- *Leverage*: it is calculated as the ratio between firm's total long-term debt and total assets (Pucheta-Martinez & Gallego-Alvarez, 2020).
- *High-Tech Industry:* it is a *dummy variable*, that assume the value of "1" for those firms that operate in the high-tech industries, and "0" for all the others.

2.3 Empirical Model

The model employed to test the relationships between the independent variables and firm performance is the *Multiple Linear Regression Model*, a statistical method that allows to predict the value of a *response* variable, from the values assumed by multiple *explanatory* variables. This study employs *p-values* to determine the significance of the regression coefficients. More specifically, a confidence interval of 95% (α=0,05) is established to accept or reject the *null hypothesis* H0: $\beta_1 = 0$.

The regression models have been run on IBM-SPSS software. The first model is run with the control variables. The independent variables (*CEO Duality*, *Board Size*, *Board Independence,* and *Percentage of Ownership Concentration)* are added one by one gradually. Lastly, all the variables are introduced in one model, to see how they globally impact on firm financial performance. Henceforth, the model has been run six times.

3. RESULTS

3.1 Descriptive statistics and correlations

Table 2 provides an introductory overview of the data, showing descriptive statistics, such as *maximum* and *minimum values, means,* and *standard deviations.*

Table 2 – Descriptive Statistics

Variable	Minimum	Maximum	Mean	St. Deviation
Tobin's Q *	-2.30	2.60	0.39	0.85
Firm Age *	0	4.94	3.40	0.82
Firm Size *	13.47	19.70	16.72	1.19
Leverage	0	0.77	0.27	0.15
High-Tech Industry	0	1	0.18	0.38
CEO Duality	0	1	0.51	0.50
Board Size	5	16	10.69	1.82
Board Independence	0.33	1	0.83	0.09
% Ownership Concentration	0.01	89.49	21.91	18.82

Note: Data about Firm Size in thousands of dollars
* Variables are log transformed

In order to avoid potential *bias* in the regression analysis, a study of the *linear correlation* among the variables has been implemented. First, *Pearson Correlations* have been calculated. The values obtained constitute acceptable levels of correlations. In addition, a *Multicollinearity Analysis* has been implemented using the Variance Inflation Factor (VIF). Exhibiting values of the VIF significantly less than 10, these results confirmed that the variables of the models do not have multicollinearity issues.

3.2 Regression results

All the models employed in this empirical analysis are statistically significant (*p-value* <0.001). Moreover, they exhibit *R-square* values ranging from 38% to 49%. Therefore, it is possible to conclude that all the models have significant predictive power.

Model 1 includes only the control variables: *Firm Size, Firm Age, Leverage,* and *High-Tech Industry*. This model demonstrates a positive and significant relationship between *Firm Age* and *Tobin's Q* (β= 0.108, *p-value* < 0.05), a negative and significant relationship between *Firm Size* and *Tobin's Q* (β= -0.367, *p-value* < 0.001), a negative and significant relationship between *Leverage* and *Tobin's Q* (β= -0.942, *p-value* < 0.001), and a positive relationship between *High-Tech Industry* and *Tobin's Q* (β=0.441, *p-value* < 0.001). Model 2 show that *CEO Duality* is negatively related to *Tobin's Q* (β= -0.272, *p-value* < 0.001), supporting *Hypothesis 1.* Model 3 introduces the *Board Size* variable and detects a positive and significant

relationship between *Board Size* and *Tobin's Q* (β=0.129, *p-value* <0.001), supporting *Hypothesis 2.* Model 4 exhibits a positive and significant relationship between *Board Independence* and *Tobin's* (β=1.811, *p-value* < 0.001), supporting *Hypothesis 3.* Model 5 introduces the *Ownership Concentration* in the model. The results exhibit an almost null but statistically significant relationship between the *Percentage of Ownership Concentration* and *Tobin's Q (*β= -0.005, *p-value* < 0.01). Therefore, *Hypothesis 4* is rejected. Finally, Model 6 includes all the variables, showing consistent results with the previous models.

To avoid *bias* in the regression analysis, the presence of possible *influential data points* has been tested for each model. Influential data points are observations that can shift the *Line of Best Fit* of a regression, reducing the validity of the model. They have been examined using the *Cook's distance*, a statistical tool used to quantify the influence of an observation on the regression results. Generally, a *Cook's distance* < 1 can be considered not problematic for the regression analysis (Cook & Weisberg, 1982). Since the values of the *Cook's distance* computed for each model are always below 0.06, it is possible to conclude that there are no influential observations that could alter the analysis.

4. DISCUSSION

This research aimed at studying how internal corporate governance mechanisms influence firm financial performance. According to the Agency Theory, the positive impact of these mechanisms on firm financial performance lies in the role that they cover in addressing the agency problems that affect modern corporations. Therefore, this study analyzes the impact of some characteristics of the *board of directors* and of the *ownership concentration* on firm financial performance using Multiple Linear Regression Models on a sample of 500 US-listed firms. The results of the empirical analysis demonstrated that specific characteristics of the *board of directors* and the presence of *large shareholders* act as important corporate governance mechanisms, significantly impacting firm performance.

Supporting Agency Theory, the results suggest a negative relationship between *CEO Duality* and firm performance, supporting the idea that the *entrenchment* of the CEO at the top of the firm may undermine the effectiveness of the board's supervision role, exacerbating agency conflicts and damaging firm performance (Finkelstein & D'Aveni, 1994). Moreover, this study found a positive relationship between *Board Size* and firm performance, providing support to the Agency Theory, which argued that more directors within the board would empower the *monitoring role* of the board of directors, enhancing firm performance (Fama, 1980). In addition, a positive relationship between *Board Independence* and firm performance has been

detected. These findings fit into the debate about independent directors, further endorsing the idea that independent directors cover a crucial role in overseeing the management (Dalton, Daily, Ellstrand, & Johnson, 1998; Coles, McWilliams, & Sen, 2001; Dalton D.R., Hitt, Certo, & Dalton, C.M., 2007). In fact, having no ties to management or the company, independent directors can more easily confront managers, providing objective and timely oversight (Dalton D.R., Hitt, Certo, & Dalton, C.M., 2007). Lastly, contrary to expectations, empirical results demonstrated a negative relationship between the *Percentage of Ownership Concentration* and firm performance. This result might be related to the fact that this study focused on the agency conflict occurring between *managers* and *shareholders*, the so-called *Type I agency problem,* disregarding the existence of possible conflicts of interest between majority and minority shareholders - *Type II agency problem* (Fama, 1980, Fama & Jensen, 1983). Following the constructs of Agency Theory, it has been hypothesized that the presence of *large shareholders* may mitigate agency conflicts because they have more incentive and power to control the manager. Nevertheless, considering the actual possibility that majority shareholders may have conflicting interests with those of minority shareholders, it is not unreasonable to expect that the presence of *large shareholders* may aggravate agency problems, worsening firm performance. Alternatively, Burkant, Gromb & Panunzi argued that ownership concentration might be detrimental for firm's value because of its impact on *managerial discretion*. A strict supervision of management by large shareholders "constitutes *ex ante* an expropriation threat that reduces managerial initiative" in undertaking value-creating investments (Burkant, Gromb & Panunzi, 1997: 1). In this sense, the presence of large shareholders could be detrimental for firm performance.

4.1 Contributions to theory and practice

This work provides some contributions to both theory and practice. Firstly, it contributes to the literature on corporate governance, fitting into the ongoing debate on the role of the board of director in favor of the idea that it covers a key role in overseeing top management, mitigating agency conflicts, and enhancing firm performance (Fama, 1980; Fama, & Jensen, 1983). More specifically, this research has important implications for the literature because it provides valuable empirical support for Agency Theory but also challenges it to some extent. It supported the Agency Theory founding that non-CEO duality, larger boards and highly independent boards are beneficial for firm performance, but it has also questioned it by finding that *large shareholders* may damage firm performance rather than enhance it.

This study also has some practical implications. As previously mentioned, it demonstrated that having a clear division between the role of CEO and Chairperson, a large enough number of directors and a substantial prevalence of independent directors in the boardroom are powerful actions to improve firm financial performance. Therefore, when designing the board of directors, practitioners are encouraged to thoughtfully consider those features to mitigate agency conflicts and ensure the maximization of firm performance. At the same token, practitioners should carefully examine the ownership structure of the firm, in order to identify possible agency conflicts occurring between shareholders and managers, or between majority and minority shareholders.

4.2 Limitations and future research

This empirical study has some limitations. First, the analysis was conducted on a sample of large US-listed firms, implying that reliability of the results is constrained to this kind of companies. Therefore, future research might consider either an international sample, or a sample of smaller companies. Second, the sample size is not as large as other studies in the literature. Hence, a possible improvement may be represented by studying the same relationship on larger sample of firms. Third, this analysis investigates the direct impact of just two internal corporate governance mechanisms on firm performance. However, there are other internal mechanisms able to influence firm performance that could be further investigated. Moreover, future research could study how those mechanisms interact, or how they are able to act as *substitutes* for each other in addressing agency problems within the firm and increasing firm performance (Misangyi & Acharya, 2014; Rediker & Seth, 1995; Ward, Brown, & Rodriguez, 2009). Finally, this study relies on *cross-sectional* data for the year 2019. Conducting a *longitudinal* analysis of the same relationships would be helpful to identify and measure effects that cannot be observed by *cross-sectional* analyses.

CONCLUSIONS

This paper studied the relationships between internal corporate governance mechanisms and firm performance. The empirical results supported Agency Theory, exhibiting that non-CEO duality, a sufficiently large board, and a high degree of independence of the board's members are beneficial for firm performance. On the other hand, this study challenged the initial expectations, revealing that ownership concentration is slightly negatively related to firm performance. Therefore, these empirical results advance our knowledge on corporate

governance mechanisms in a context of large and listed US companies. As such, this study contributes to both corporate governance theory and practice.