Do independent director's characteristics influence financial reporting quality?

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Abstract

This paper analyzes whether the role played by independent directors in monitoring the financial reporting process is affected by certain personal characteristics. Specifically, we focus on the tenure and the number of directorships that independent directors hold. Our sample is composed of US listed firms for the period 2008-2012. After performing several robustness checks and sensitivity analyses, we have documented a positive association between board independence and financial reporting quality. However, this association is presented only for certain values of directors' tenure and external directorships. This evidence suggests that the effectiveness of independent directors in their monitoring tasks is affected by these personal characteristics. In particular, our results indicate that long tenures and a high number of directorships compromise the ability to monitor. Therefore, this paper highlights the need for a more specific approach, based on the personal characteristics of independent directors, in order to study their influence on corporate decisions. Furthermore, our evidence has direct implications for companies in the selection of board members.

Keyword: Board independence, board monitoring, earnings management, director's tenure, multiple directorships.

Resumen

Este trabajo analiza si el papel de los consejeros independientes en el proceso de supervisión de la información financiera está influenciado por ciertas características personales. Específicamente, nos centramos en el número de años en el consejo y la pertenencia a múltiples consejos. Para ello se utiliza una muestra de empresas cotizadas en Estados Unidos durante 2008-2012. Tras realizar diferentes análisis de robustez y sensibilidad encontramos una asociación positiva entre la independencia del consejo y la calidad de la información financiera. Sin embargo, esta asociación sólo se observa para determinados niveles de antigüedad en el consejo y número de consejos adicionales. Esta evidencia sugiere que la efectividad de los directores independientes en sus tareas de supervisión se ve afectada por estas características personales. En particular, los resultados obtenidos indican que cuando los consejeros independientes permanecen un elevado número de años en un consejo o pertenecen a muchos consejos externos su capacidad de supervisión se ve comprometida. Este trabajo destaca la necesidad de utilizar un enfoque más específico, basado en las características personales de los consejeros independientes, para analizar la influencia de éstos en las decisiones empresariales y su efecto en el rendimiento empresarial. Asimismo, los resultados tienen relevantes implicaciones para las empresas respecto a la selección de los miembros del consejo de administración.

Palabras claves: Consejeros independientes, gestión del resultado, número de años en el consejo, pertenencia a múltiples consejos.

1. INTRODUCTION

Corporate governance codes across the world have increasingly issued recommendations on the structure of boards of directors and, more specifically, regarding its desirable proportion of independent directors (Aguilera and Cuervo-Cazurra, 2009; Crespí and Pascual, 2014). In the United States, boards of directors are required to be composed of a majority of independent directors.

Traditionally, the literature assigns three main functions to the board of directors: the creation of valuable connections for the firm, advice in strategic decisions and the monitoring of top management (Hillman and Dalziel, 2003; Pugliese et al., 2009). The monitoring activity is one of the main tasks of independent directors, who are crucial in overseeing the financial reporting process (Anderson et al., 2004). In theory, independent directors are less aligned with management and can better protect the interests of shareholders, and thus board independence may be considered as a key factor in ensuring the ability of the board to monitor management's behavior effectively (Fama, 1980; Fama and Jensen, 1983). It is therefore assumed that independence enhances the quality of boards by increasing their monitoring ability.

Despite being an important issue, the concept of independent director is nonetheless difficult to define. In line with most international organisms, the New York Stock Exchange (NYSE) Listed Company Manual indicates that an independent director should have "no material relationship" with the listed company, either directly or as a partner, shareholder or officer of an organization that has a relationship with the company. Consistent with this definition, most previous studies have used an agency perspective under the assumption that independent directors are expected to be a crucial governance mechanism in order to monitor management behavior and reduce agency costs (Fama and Jensen, 1983). In a dispersed ownership scenario, such as the US context, these directors become more important to protect the interests of shareholders (Yoshikawa et al., 2014). Nevertheless, independent directors might not all develop their monitoring activity in the same way. In particular, certain characteristics of independent directors can improve/compromise their ability to monitor. In this study, we focus on the experience

acquired by a director within a board by means of a long tenure, and the expertise gained through connections when board members have external directorships.

The objective of this paper is to examine how tenure and the number of outside directorships of independent directors can influence the monitoring role played by the board. This is under the premise that both tenure and outside directorships can determine the manner in which independent directors develop their monitoring tasks. This paper focuses, specifically, on the monitoring of the financial reporting process, by analyzing the effect of board independence on earnings quality. Boards of directors are an important part of the financial reporting process and the literature predicts that independent directors should constrain accounting manipulations (Peasnell et al., 2005). We examine a sample composed of US listed firms for the period 2008-2012. This provides an interesting setting, because in recent years US regulators have imposed stronger responsibilities related to independent directors. This could lead independent directors to place a greater emphasis on their monitoring tasks. As the selection of directors can suffer a potential endogeneity problem, to develop the empirical analysis we employ a two-stage least squares (2SLS) instrumental variable approach.

After performing several robustness checks and sensitivity analyses, we have documented that independent directors improve board monitoring and enhance the quality of the financial reporting process thereby leading to a reduction in earnings management. However, this association is presented only for certain values of directors' tenure and external directorships. Specifically, our findings show that long tenures and a high number of directorships reduce the ability to monitor. We extend previous research by highlighting that the effectiveness of independent directors depends on their personal characteristics. Accordingly, we suggest that theoretical frameworks should be expanded, to take into account certain personal characteristics of independent directors that are likely to affect the way in which they develop their activities. Although we agree that the presence of independent directors has some clear benefits for the board of directors, we claim that companies and regulators must be aware that the emphasis should also be put on the personal characteristics of these independent directors.

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

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Regulatory bodies across the world have increasingly focused on director independence as a mechanism to increase the transparency, accountability and efficiency of corporate governance (Aguilera, 2005). In order to improve corporate governance mechanisms, reformers have commonly suggested the adoption of initiatives designed to strengthen the independence of boards (Bebchuk and Weisbach, 2010). Section 303A of the NYSE's Listed Company Manual, approved by the SEC in 2003 (amended in 2009), requires listed companies to have a majority of independent directors. According to this rule, in order to determine that a director is independent, the board of directors must affirmatively indicate that the director has "no material relationship" with the listed company, either directly or as a partner, shareholder or officer of an organization that has a relationship with the company. In line with this rule, international codes of governance have also promoted a majority of independent directors on boards.

Consistent with agency theory (Jensen and Meckling, 1976; Fama and Jensen, 1983), independent directors develop a monitoring function that is crucial to mitigate potential conflicts between managers and shareholders. Independent directors, by being outsiders, can be willing to perform a closer monitoring of managers than executive directors (Pucheta-Martínez, 2015). The monitoring activities, which can include the evaluation of tasks carried out by the top management and the CEO, and the evaluation of firm strategy, will minimize the costs incurred when management pursues its own benefit at the expense of the shareholders' interests (Hillman and Dalziel, 2003). In particular, these activities also refer to the monitoring of the financial reporting process. Indeed, empirical evidence generally shows a positive association between board independence and the quality of the

financial reporting process. A meta-analysis conducted for several countries suggests that greater board independence may constrain earnings management (García-Meca and Sánchez-Ballesta, 2009). Specifically, these authors find that in Anglo-American countries independent directors are more effective in curbing earnings management. A number of studies have supported these findings. Klein (2002) highlights that large US firms listed on the S&P 500 appear to provide more unbiased financial statements if their relevant corporate governance structures are set up to be independent of management. Peasnell et al. (2005), for a sample of UK listed firms, also claim that greater board independence appears to reduce the incidence of earnings management. Furthermore, previous research also documents that bigger and more visible firms have a richer information environment, which can facilitate independent directors' monitoring, resulting in a decrease in earnings management (Chen et al., 2015).

Prior literature examining the role played by independent directors tends to focus on the proportion of directors declared to be independent (Crespí and Pascual, 2014). However, directors' effectiveness in the development of their tasks may depend on their expertise, experience, and motivation (Aguilera and Cuervo-Cazurra, 2009). For example, a high level of motivation and engagement may lead to increasing the effectiveness of independent directors in the development of their monitoring tasks. In addition, it may be necessary to have business knowledge and familiarity with business practices in order to better monitor the reporting process (Manzaneque et al., 2016). Particularly, the monitoring of financial reporting practices requires specific expertise. In this paper, we argue that the tenure of independent directors and their work in multiple boards can provide these directors with additional resources, such as motivation, expertise and experience. Therefore, these characteristics will affect the way in which they monitor the reporting process. Specifically, we expect that directors' tenure and the number of additional directorships they hold will alter the relationship between board independence and information quality. A theoretical review of the research on the effect that these characteristics can have on the monitoring tasks of directors is presented in the following paragraphs.

Director tenure and board monitoring

Director tenure has received significant attention from international bodies and academics. Tenure within a firm enables directors to acquire greater expertise, and develop important knowledge about the firm and its business environment (Vafeas, 2003; Kor and Sundaramurthy, 2009). This experiential knowledge is crucial for boards' members to effectively develop their tasks (Kor and Mahoney, 2000; Westphal and Bednar, 2005), since a board member without knowledge has difficulty in influencing the decision process (Zald, 1969). In this line, previous research claims that effective monitoring is potentially an acquired skill, suggesting that boards with greater tenure provide better monitoring (Anderson et al., 2004). Moreover, experience on a specific board gives independent directors the opportunity to become familiar with the board and the firm, enabling them to focus more effectively on governance issues rather than on group process issues (Eisenhardt and Schoonhoven, 1990). New directors without enough familiarity with their new responsibilities and their colleagues are more susceptible to top management pressures (Mallette and Fowler, 1992). In particular, it can be expected that independent directors with longer tenure could better develop their monitoring tasks, which include the review of financial statements, audit procedures and internal control mechanisms. Yet directors who serve on boards for long periods reduce their degree of independence and their ability to monitor (Hillman et al., 2011). Long-tenured independent directors may become closer to managers and as a result the development of their tasks can be compromised (Vafeas, 2003). This author highlights that, in time, directors are more likely to be co-opted by management as they become less mobile and less employable. Extended tenure can also reduce intragroup communications and thus lower the quality of monitoring decisions (Ben-Amar et al. 2013). Furthermore, directors with very long tenures are influenced by their own beliefs and schemes and therefore their knowledge of the firm could eventually become a less valuable resource in the monitoring process (Barroso et al., 2011).

Currently, there are no specific regulations in the United States that limit directors' tenure. The Council of Institutional Investors (CII) rejects outright term limits, because longer-tenured directors often improve a board's overseeing capabilities and these limits could reduce the critical expertise of boards. However, in recent years shareholder activist groups have opened a debate regarding director tenure. The National Association of Corporate Directors (NACD, 1996) emphasized the need for the replacement of directors after a

maximum period of 15 years. In addition, the State Street Global Advisors' voting policy on director tenure focuses on what it identifies as the need for "board refreshment" (State Street Global Advisors, 2014).

According to the previous theoretical arguments, directors should have served long enough to learn about the firm in order to enable them to be effective in their monitoring roles but not so long as to compromise their independence and their ability to monitor. We therefore assume that independent directors' tenure will influence how they monitor the financial reporting process. Hence, we expect that the tenure of independent directors will influence the relationship between board independence and information quality. As a result the following hypothesis is formulated.

H1: The relationship between board independence and financial information quality is influenced by the tenure of independent directors.

Outside directorships and board monitoring

The number of directorships has been the subject of debate and it is experiencing growing attention in economic research (Buchwald, 2017). On the one hand, directors with multiple appointments contribute toward an improvement of the quality of the board (Fama and Jensen, 1983). These directors may have richer experiences and connections, and provide access to various resources that can help the development of their monitoring role (Perry and Peyer, 2005; Jiraporn et al., 2008; Sarkar and Sarkar, 2009). They obtain a broad knowledge that can be crucial for improving the decision-making process within the board which they sit on. Specifically, they can learn about different management styles and business practices (Perry and Peyer, 2005) and acquire valuable skills that can improve the monitoring process (Fernández et al., 2017). Furthermore, an increase in the number of directorships enhances the reputation of directors. This "reputation effect" will encourage directors to better develop their tasks (Keys and Li, 2005). The literature generally argues that multiple directorships indicate director reputation and function as an important source of incentives for directors to develop their reputation as monitoring specialists (Fama and Jensen, 1983; Masulis and Mobbs, 2011).

Nevertheless, the monitoring role played by directors with multiple appointments can be compromised when the number of their directorships is too high. Serving on many boards can diminish the directors' dedication (Lei and Deng, 2014) as it can limit directors' time, attention and preparation for board meetings, thus narrowing these directors' ability to monitor (Carpenter and Westphal, 2001; Harris and Shimizu, 2004). The previous evidence suggests that board members with too many directorships can be less effective in the monitoring of management and the reduction of agency costs (Ferris et al., 2003). In particular, their monitoring of the financial reporting process can be more lax due to their limitations.

In the United States, as in the majority of developed countries, there is an ongoing debate about the need to impose a mandatory limit for the number of directorships that a board member may have. Two decades ago, the NACD (1996) criticized firms for appointing directors with multiple directorships. The Principles of Corporate Governance (Business Roundtable, 2012) does not specify any limitation on the number of directorships of board members, but it states that service on too many boards can interfere with an individual's ability to satisfy his or her responsibilities. In addition, associations such as the Council of Institutional Investors (CII) indicate that companies should establish and publish guidelines specifying how many other boards their directors may serve on.

Consistent with previous theoretical arguments, we assume that at lower levels of multiple directorships, independent board members improve their ability to monitor the financial reporting process, but too many directorships could lessen this ability to monitor. Therefore, we expect that the number of external directorships will influence the relationship between board independence and information quality. Hence, the following hypothesis is formulated:

H2: The relationship between board independence and financial information quality is influenced by the number of directorships of independent directors.

3. RESEARCH DESIGN

3.1. Sample

Information about directors was collected from the Investor Responsibility Research Center (IRRC)1. We merged director data with financial information, which was extracted from Compustat. Our final sample includes 193 firms listed on the New York Stock Exchange (NYSE) over the period 2008-2012. Several observations were initially removed because of missing data concerning some variables included in the analysis. Our analysis focuses on a single country to avoid dealing with differences in the institutional setting and regulation across countries (Dalziel et al., 2011). We have selected US companies because of the strict regulation in the post-SOX period. Our sample provides a setting particulary relevant because we examine a post-SOX period in which independent directors are expected to make a significant contribution to their boards since they are subject to stronger responsibilities (Bhagat and Bolton, 2013).

3.2. Variables

Dependent variable

Dechow et al. (2010) find that no measure of earnings quality is superior for all decision models. However, all proxies for earnings quality rely on reported accrual-based earnings and thus are based on earnings management. This focus is in line with the comprehensive survey of Dechow and Skinner (2000), who provide both academic- and practitioner-related evidence of earnings management. In addition, McNichols (2000) argues that the main issue in earnings management is the measure of discretionary accruals. The literature has developed a number of models with the aim of detecting the discretionary component of accruals. We utilize discretionary accruals (DACC) as a proxy for financial reporting quality (Francis, 2011; Kusnadi, et al., 2016). To measure abnormal accruals, we use the performance-adjusted cross-sectional Dechow-Dichev Model (Dechow and Dichev, 2002). Our measure of accruals quality is calculated as the absolute value of the residuals of the

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[1]The IRRC gathers most of its data from proxy statements and it is considered by Wharton Research Data Services (WRDS) to be the world's leading source of information on corporate governance.

cash-flow model. In line with the previous literature (Capalbo et al., 2014; Kwon and Yin, 2015), we estimate our accruals model by year and for each two-digit SIC. We require at least six firm observations per year with usable data in each SIC group. This model is represented in Equation [1].

$$\frac{TA}{A\,TA_{t-1}} = \frac{\beta_0}{A\,TA_{t-1}} + \beta_1\left(\frac{CFO_{t-1}}{A\,TA_{t-1}}\right) + \beta_2\left(\frac{CFO_t}{A\,TA_{t-1}}\right) + \beta_3\left(\frac{CFO_{t+1}}{A\,TA_{t-1}}\right) + e$$

Equation [1]

where *TA* is total accruals; *CFO* is the cash-flow from operations; *e* is the error term of the model, which represents discretionary accruals, and the *t* subscripts represent years. All variables are scaled by average total assets (ATA).

Treatment variables

We examine the role of independent directors in the monitoring of the financial reporting process. Thus, in order to test our hypotheses, board independence is used as the main explanatory variable in the statistical models. In line with previous studies (Zhang, 2012; Alves et al., 2015; Ting, 2016), the proportion of independent directors on the board is considered to measure board independence (BINDEP). We follow the above mentioned definition of independence provided by the NYSE regulation.

In accordance with previous research, independent directors' tenure (BTENURE) is calculated as the average number of years that independent directors spend on a particular board (Kor and Sundaramuthy, 2009; Barroso et al., 2011; Dalziel et al., 2011). Following prior literature (Perry and Peyer, 2005; Sarkar and Sarkar, 2009; Lei and Deng, 2014), we compute the number of additional directorships (OBOARDS) as the average number of external directorships held by independent directors.

Control variables

A set of control variables is also considered due to their potential influence on the quality of financial information. First, in accordance with previous research (Saénz and García-Meca, 2014; Ianniello, 2015; Kusnadi, et al., 2016), three board-related variables are included: board size, CEO duality and board age. Board size (BSIZE) is measured by the total number of members on the board. CEO duality (DUAL) is determined by a dummy variable that takes value 1 if the CEO is also the chairperson of the board and 0 otherwise. Board age (BAGE) is measured as the average age of directors within a board. In addition, some financial variables were added: firm size, leverage and firm growth. Firm size (SIZE) is calculated as the log of total sales; leverage (LEV) is calibrated by the ratio of total debt to total assets; and firm growth (GROWTH) is defined as the annual variation in sales. Finally, we also use year and industry dummies to control for both time and industry effects (e.g., Lindstaedt et al., 2011; Bermig and Frick 2010). A summary of all the variables is presented in Table 1.

[Insert Table 1]

3.3. Method

Once total accruals are estimated and the discretionary component is computed by means of equation [1], we analyze the relationship between the discretionary accruals and our independent variables, as shown in Equation [2], in which the dependent variable is the discretionary accruals (DACC):

$$DACC_{i,t} = \beta_0 + \beta_1 BINDEP_{i,t} + \beta_2 BTENURE_{i,t} + \beta_3 OBOARDS_{i,t} + \beta_4 BSIZE_{i,t} + \beta_5 DUAL_i$$

$$+ \beta_6 BAGE_{i,t} + \beta_7 SIZE_{i,t} + \beta_8 LEV_{i,t} + \beta_9 GROWTH_{i,t} + \sum_{J=1}^{5} \beta_j DUM\_SECTOR_{jt}$$

$$+ \sum_{J=1}^{5} \beta_j DUM\_YEAR_{jt} + \varepsilon_{it}$$

Equation [2]

where β_0 is the intercept and βi is the coefficient of each independent variable. The sub-index i identifies the individual and the sub-index t identifies the year and ε_{it}, the stochastic error.

Our empirical approach can potentially be affected by an endogeneity problem. In theory, board structure may mitigate the misuse of discretionary accruals, but also accounting quality may influence the weight of independents on the board. Independent directors tend to be selective when choosing board assignments since they prioritize their efforts where their reputation benefits are greatest (Masulis and Mobbs, 2014). In order to address this issue, recent research (Bushman, 2009; Field et al., 2013) has employed two-stage least squares (2SLS). This methodology requires the use of instrumental variables that should be highly related to the endogenous independent variable and unrelated to the dependent variable (Larcker and Rusticus, 2010). Consistent with the previous literature, we adopt a 2SLS approach. In our empirical analysis, we use three instrumental variables for board independence: (1) the size of the board, (2) the size of the firm, and (3) the mean age of directors. The validity of these instruments is confirmed since they comply with the previous requirements, taking into consideration the values obtained from the Sargan test, which are reported in the next section. The first instrument is the size of the board. Larger boards are likely to have more networks and greater external connections (Kiel and Nicholson, 2003) and they also have more resources at their disposition. These connections and resources may result in better capabilities to recruit independent directors. In relation to the second instrumental variable, larger firms are likely to have more independent directors on their boards (Anderson et al., 2004). Finally, older directors could also tend to be independent since they are more likely to be retired and have fewer time constraints,

thereby leading them to serve on more boards (Fields et al., 2013). Board size refers to the number of board members, firm size is calculated as the logarithm of sales and board age is computed as a dummy variable which takes the value 1 for boards where directors, on average, are over 60.

4. RESULTS

4.1. Descriptive statistics and bivariate correlations

Table 2 displays the descriptive statistics for the variables included in the empirical analyses. The average value for DACC is 0.028. Meanwhile, on average, independent directors represent nearly eighty percent of total directors within a board. This confirms the compliance with the recommendation of the Corporate Governance Listing Standards of the New York Stock Exchange (NYSE). The US context is characterized by companies with boards that have been dominated by outside directors for many years (Singhchawla et al., 2011). Broadly speaking, the independent directors' tenures within a particular board are over eight years. Descriptive statistics for board tenure are consistent with the value shown in previous studies examining US firms (Vafeas, 2003; Hillman et al., 2011) and recent reports, which indicate that the average tenure of directors at S&P 500 companies in the period 2009-2011 is around eight years (Spencer Stuart, 2009, 2011). Furthermore, in our sample, the average number of additional directorships held by independent directors is one.

[Insert Table 2]

Table 3 reports the correlation matrix between the variables included in the statistical models. Board independence presents the expected negative relationship with discretionary accruals. Generally, multicollinearity is considered to be a problem if a correlation between independent variables is higher than 0.7 (Cooper and Schindler, 2003). Although the correlation coefficients are not high, we compute the variance inflation factor (VIF) in order to test the lack of multicollinearity in our estimates. In our sample, VIF values are

under 2. Since the lack of multicollinearity is indicated when VIF values are under ten (Hair et al., 2008), multicollinearity does not seem to be an issue with our sample. The lack of heteroscedasticity has been tested with the test of Breusch-Pagan or Cook-Weisberg.

[Insert Table 3]

4.2. The association between independent directors and financial information quality

In the first stage of our study, we performed a set of tests to examine the relationship between discretionary accruals and independent directors. Table 4 presents the results of the regression analyses using four different proxies for board independence. In column 1 board independence is measured by the proportion of independent directors on the board. Given that currently almost all listed companies have a majority of independent directors, we checked the robustness of our results to the use of three relative measures of board independence. As in Francoeur et al. (2008) and Ben-Amar et al. (2013), the sample was split into different groups according to the values of board independence. First of all, a dummy variable (BINDDUMMY) was created by assigning the value of 1 to firms with a proportion of independent directors above the median value, and 0 otherwise. Second, the sample was divided into terciles to rank the level of board independence, and a new variable (BINDTERCILE) that takes the values 0, 1 and 2 was designed. Columns 2 and 3 in Table 4 include these variables. Furthermore, the original variable was ranked by sorting the values in an ascending order so that the resulting variable includes the rankings (BINDRANK). This variable is considered in column 4. As discussed by Barako et al. (2006), rank transformation mitigates the impact of measurement errors, outliers and residual heteroskedasticity on the regression results. In order to address the robustness analysis we employ panel data because it enables tackling the omitted variable bias by using firm fixed effects. This methodology controls for time-invariant and unobserved firm characteristics. Therefore, within-firm changes are used to explain variation in the dependent variable (see e.g., Coles et al., 2008).

Table 4 confirms that, not only the absolute value of board independence, but also the relative degree of independence with respect to the sample is negatively related to discretionary accruals. Regardless of the measure we use, we find a significant and negative

link between board independence and discretionary accruals. Consistent with the evidence documented by previous literature (Beasley, 1996; Dechow et al., 1996; Peasnell et al., 2005), our findings show that independent directors play an important monitoring role in terms of reinforcing the integrity and credibility of published financial statements. They are likely to provide superior oversight of the financial accounting process, and help to increase the quality of financial information. Our evidence confirms that, in the Anglo-American context, where there is a strong tradition of the board-monitoring role, board independence may be a useful mechanism in preventing earnings management (García-Meca and Sánchez-Ballesta, 2009; Klein, 2002). Moreover, listed firms in the United States have a rich information environment, which can help independent directors to monitor the financial reporting process (Chen et al., 2015).

[Insert Table 4]

4.3. The effect of independent directors' characteristics on the relationship between board independence and financial information quality

In the next stage of our analysis, using the two-stage least squares (2SLS) methodology, we examine whether the proposed characteristics of independent directors (tenure and multiple directorships) affect how these directors perform their monitoring activities and, as a result, the relation between board independence and financial information quality. Table 5 examines the effect of these variables on discretionary accruals. The tenure of independent directors has a negative association with earnings management. In line with the theoretical arguments, our results suggest that tenure enables independent directors to improve their ability to monitor the financial reporting process. On the other hand, the results for multiple directorships indicate the non-existence of a relation between this variable and discretionary accruals.

[Insert Table 5]

In order to perform a more in-depth analysis of the effect of these directors' characteristics on the relationship between board independence and earnings management, we divide our sample into two groups according to the median values of these independent directors' characteristics and rerun the statistical analysis. The results are presented in Table 6 and

confirm that the negative association between board independence and earnings management depends on the level of tenure and the number of outside directorships of independent directors.

Regarding the effect of tenure, we find a negative association between board independence and discretionary accruals when independent directors' tenure is below the median of the sample (7.6 years). Independent directors' tenure is high enough in the companies analyzed in order to allow them to acquire the necessary conditions for a better monitoring activity. However, the contributions of these directors lessen with very long levels of tenure (over the median). Some academics and associations have suggested that directors might not be valuable for firms when their tenure exceeds 12-15 years, but our results show that when tenure oversteps 8 years directors' ability to monitor earnings management is reduced, probably because they become closer to managers. Therefore, Hypothesis 1 is supported. Furthermore, this in-depth analysis reveals that the directorships of independent directors also influence the relation between board independence and accruals quality. Table 6 shows that, at lower levels, the number of directorships of independent directors has a negative effect on discretionary accruals. Nevertheless, this negative relationship becomes insignificant when directors belong to more than two boards. The financial statements include a number of estimates that reflect the complexities of a company's business environment and industry (Cohen et al., 2014). At low levels, holding external directorships enables independent directors to acquire expertise to understand the complex industry-specific accounting issues. But an increase in the number of external directorships has a significant effect on the ability of independent directors to coordinate their functions and properly monitor the financial reporting process. These findings are consistent with the previous literature, which indicates that a large number of appointments can make directors over-committed and thereby compromise their ability to monitor company management effectively on behalf of the shareholders (Ferris et al., 2003). Although previous research has considered a busy director to be one having two or more external directorships (Ferris et al., 2003; Fich and Shivdasani, 2006; Sarkar and Sarkar 2009), our results suggest that the monitoring function of independent directors is compromised when they hold, on average, more than one external directorship. When we focus on the independent directors who have a higher number of external directorships (over the median), the relationship

between board independence and financial information quality becomes insignificant. Thus, Hypothesis 2 is supported.

[Insert Table 6]

5. CONCLUSIONS

This paper carries out an in-depth analysis of the relationship between board independence and the monitoring of the financial reporting process by using a measure of earnings quality. The monitoring activity is one of the main tasks of independent directors. These directors are critical elements in the overseeing of the financial reporting process and must ensure the disclosure of credible and relevant financial statements (Anderson et al., 2004). Previous research has focused on agency theory to justify the advantages of independent directors to control and monitor the management in the interest of shareholders. Yet the effectiveness of the independent directors' monitoring activities might also depend on their personal characteristics. We extend the previous literature by examining how two personal characteristics (tenure and multiple directorships) of independent directors can affect the way in which they monitor the financial reporting process and therefore influence the relationship between board independence and financial information quality.

First, we examine the influence of independence on financial information quality. Several robustness tests are done in order to guarantee that the results obtained are not determined by our experimental design. Since the boards from US companies are composed of a majority of independent directors, we design additional variables to measure the relative value of independence in relation to the sample. Our evidence confirms that board independence leads to greater financial information quality. On the other hand, our results indicate that independent directors' tenure and their presence in additional boards can affect their ability to monitor. First, the US listed firms analyzed do not present a significantly high value for independent directors' tenure, however our results indicate that long tenures (above 7.6 years) compromise the independence of directors and reduce their ability to monitor the financial reporting process. Furthermore, although the average number of external appointments of independent directors is not particularly high, our results suggest

that independent directors effectively monitor the financial reporting process only if they are not on too many boards.

These findings have direct implications for the literature, since we show how independent directors' tenure and multiple directorships may influence the effectiveness of these directors in their monitoring activities. This evidence has implications for companies' board team management. These results also contribute toward the debate on the need for a limitation on both the time that independent directors sit on a board and the number of external directorships which they hold. Finally, our paper highlights the requirement of a more specific approach, based on the personal characteristics of independent directors, in order to study the role and relevance of these directors.

This paper has some limitations that can be considered for future research. Our study focuses on a sample composed of US firms. Future research could explore different legal and/or institutional contexts, since the effect of boards of directors can vary across environments. Additionally, a potential line of research could investigate the expertise of independent directors. Moreover, the effectiveness of independent directors might also be affected by other firm characteristics and researchers could also carry out an in-depth analysis of how organizational factors moderate this relationship.

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Table 1. Description of variables

Abbreviation	Variable	Definition	Expected Sign
DAAC	Discretionary accruals	The absolute value of the residuals of the cash-flow model	

BINDEP	Board independence	Percentage of independent directors within a board	+
BTENURE	Board tenure	Average number of years of independent directors on a board	+/-
OBOARDS	Outside directorships	Average number of outside directorships of independent directors	**+/-**
BSIZE	Board size	Number of directors on the board	**-**
DUAL	CEO duality	Dummy variable: if the CEO is also the chairperson of the board: 1; otherwise: 0.	-
BAGE	Board age	Average age of directors within a board	**+/-**
SIZE	Firm size	Total sales (logarithm)	+
LEV	Leverage	Total debt /Total assets	**-**
GROWTH	Firm growth	(Sales t - Sales t-1) / Sales t-1	+

Table 2. Descriptive statistics of the main variables

DACC is the absolute value of the residuals of the cash-flow model; BINDEP is the proportion of independent directors; BTENURE refers to the average number of years of independent directors on a board; OBOARDS indicates the average number of outside directorships of independent directors; BSIZE is the total number of directors on the board; DUAL is a dummy variable that takes the value of one if the CEO is also

the chairperson of the board and 0 otherwise; BAGE is the average age of directors within a board; SIZE is calculated as the logarithm of total sales; LEV refers to the ratio of total debt to total assets; GROWTH is computed as the ratio of the annual sales variation.

	Mean	Std. Dev.	Q1	Median	Q3
DACC	0.029	0.021	0.014	0.025	0.037
BINDEP	0.829	0.088	0.778	0.846	0.909
BTENURE	7.938	2.826	6.177	7.631	9.455
OBOARDS	1.139	0.556	0.778	1.111	1.500
BSIZE	10.859	1.887	10	11	12
DUAL	0.837	0.370	1	1	1
BAGE	62.642	3.004	60.764	62.760	64.618
SIZE	9.248	1.053	8.594	9.229	9.743
LEV	0.620	0.144	0.519	0.623	0.732
GROWTH	0.066	0.266	-0.033	0.038	0.124

Table 3. Correlation matrix

Correlation coefficients between the main variables. DACC is the absolute value of the residuals of the cash-flow model; BINDEP is the proportion of independent directors; BTENURE refers to the average number of years of independent directors on a board; OBOARDS indicates the average number of outside directorships of independent directors; BSIZE is the total number of directors on the board; DUAL is a dummy variable that takes the value of one if the CEO is also the chairperson of the board and 0 otherwise; BAGE is the average age of directors within a board; SIZE is calculated as the logarithm of total sales; LEV refers to the ratio of total debt to total assets; GROWTH is computed as the ratio of the annual sales variation.

	BINDEP	BTENURE	OBOARDS	BSIZE	DUAL	BAGE	SIZE	LEV	GROWTH
DACC	-0.151***	0.009	0.050	-0.109**	0.013	-0.104**	-0.183***	-0.134**	0.055
BINDEP		-0.049	-0.030	0.150***	-0.084**	0.030	0.183***	0.134***	0.055
BTENURE			-0.173***	0.041	-0.047	0.510***	-0.180***	-0.207***	0.142***
OBOARDS				-0.101**	0.112***	-0.047	0.069*	0.001	-0.036
BSIZE					-0.040	0.156***	0.389***	0.120**	-0.017
DUAL						-0.036	0.044	-0.039	0.025
BAGE							0.069*	-0.102***	0.131**
SIZE								0.068*	0.059
LEV									-0.171***
VIF	1.09	1.54	1.07	1.25	1.03	1.44	1.28	1.12	1.06

* p< 0.10; ** p < 0.05; *** p < 0.01

Table 4. Effect of board independence on financial information quality

DACC is the absolute value of the residuals of the cash-flow model. BINDEP is the proportion of independent directors; BINDDUMMY takes the value of 1 when the percentage of independent directors is above the median and 0 otherwise; BINDTERCILE groups the values of board independence into terciles (0 if these values are in tercile 1, 1 if they are in tercile 2, and 2 if they are in tercile 3); BINDRANK is a continuous variable where the values of board independence are ranked in ascending order; BSIZE is the total number of directors on the board; DUAL is a dummy variable that takes the value of one if the CEO is also the chairperson of the board and 0 otherwise; BAGE is the average age of directors within a board; SIZE is calculated as the logarithm of total sales; LEV refers to the ratio of total debt to total assets; GROWTH is computed as the ratio of the annual sales variation.

Variable	(1) 2SLS	(2) Fixed effects	(3) Fixed effects	(4) Fixed effects
BINDEP	-0.2859***			
	(0.1109)			
BINDDUMMY		-0.0056***		
		(0.0018)		
BINDTERCILE			-0.0029**	
			(0.0013)	
BINDRANK				-0.0111***
				(0.0036)
BSIZE		-0.0008	-0.0010*	-0.0008
		(0.0006)	(0.0006)	(0.0006)
DUAL	0.0027	-0.0012	-0.0013	-0.0010
	(0.0030)	(0.0019)	(0.0019)	(0.0019)
BAGE		0.0006	0.0006	0.0006
		(0.0004)	(0.0004)	(0.0004)
SIZE	-0.0028	-0.0050	-0.0047	-0.0048
	(0.0053)	(0.0037)	(0.0037)	(0.0037)
LEV	-0.0120	0.0038	0.0040	0.0022
	(0.0180)	(0.0118)	(0.0119)	(0.0118)
GROWTH	0.0004	0.0031	0.0031	0.0029
	(0.0030)	(0.0020)	(0.0020)	(0.0020)
Sector dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
No. observations	552	594	594	594
Adj. R2		0.0777	0.0675	0.0782
F-Test		2.08***	1.79***	2.10***
Sargan Test	4.131			

Standard errors in parentheses. * p< 0.10; ** p < 0.05; *** p < 0.01

Table 5. 2SLS results for independent director characteristics and information quality (I)

DACC is the absolute value of the residuals of the cash-flow model. BINDEP is the proportion of independent directors; BTENURE refers to the average number of years of independent directors on a board; OBOARDS indicates the average number of outside directorships of independent directors; BSIZE is the total number of directors on the board; DUAL is a dummy variable that takes the value of one if the CEO is also the chairperson of the board and 0 otherwise; BAGE is the average age of directors within a board; SIZE is calculated as the logarithm of total sales; LEV refers to the ratio of total debt to total assets; GROWTH is computed as the ratio of the annual sales variation.

Variable	(1)	(2)	(3)
BINDEP	-0.3202**	-0.2958***	-0.3270***
	(0.1246)	(0.1141)	(0.1267)
BTENURE	-0.0020**		-0.0019**
	(0.0009)		(0.0009)
OBOARDS		-0.0022	-0.0019
		(0.0018)	(0.0019)
DUAL	0.0016	0.0020	0.0013
	(0.0031)	(0.0030)	(0.0031)
BAGE	0.0016**	0.0008	0.0016**
	(0.0007)	(0.0006)	(0.0007)
SIZE	-0.0014	-0.0023	-0.0016
	(0.0057)	(0.0054)	(0.0057)
LEV	-0.0197	-0.0153	-0.0197
	(0.0199)	(0.0186)	(0.0201)
GROWTH	-0.0007	0.0001	-0.0007
	(0.0033)	(0.0031)	(0.0033)
Sector dummies	Yes		Yes
Year dummies	Yes		Yes
No. observations	552	552	552
Sargan Test	3.983	4.293	3.542

Standard errors in parentheses. * p< 0.10; ** p < 0.05; *** p < 0.01

Table 6. 2SLS results for independent director characteristics and financial information quality (II)

BTENURE refers to the average number of years of independent directors on a board; OBOARDS indicates the average number of outside directorships of independent directors. The value for every tercile is presented in brackets; BINDEP is the proportion of independent directors; BSIZE is the total number of directors on the board; DUAL is a dummy variable that takes the value of one if the CEO is also the chairperson of the board and 0 otherwise; BAGE is the average age of directors within a board; SIZE is calculated as the logarithm of total sales; LEV refers to the ratio of total debt to total assets; GROWTH is computed as the ratio of the annual sales variation. The value for median is presented in brackets.

Variable	BTENURE		OBOARDS	
	Lower median (<7.631)	Higher median (>7.631)	Lower median (<1.111)	Higher median (>1.111)
BINDEP	-0.6300*	0.3004	-0.3683***	-0.0246
	(0.3231)	(0.2817)	(0.1157)	(0.0692)
DUAL	0.0109	-0.0062	-0.0016	-0.0036
	(0.0104)	(0.0058)	(0.0051)	(0.0035)
BAGE	0.0027	0.0016	0.0018	-0.0000
	(0.0018)	(0.0012)	(0.0012)	(0.0006)
SIZE	0.0273	-0.0202*	-0.0104	0.0069
	(0.0178)	(0.0121)	(0.0094)	(0.0054)
LEV	-0.0990	-0.0161	-0.0345	0.0104
	(0.0685)	(0.0389)	(0.0315)	(0.0185)
GROWTH	-0.0176	0.0034	-0.0022	0.0142**
	(0.0163)	(0.0038)	(0.0039)	(0.0069)
Sector dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
No. observations	252	251	237	255
Sargan Test	0.343	0.001	0.390	3.707

Standard errors in parentheses. * p< 0.10; ** p < 0.05; *** p < 0.01