

The Effect of the Board of Directors and Audit Quality on Disclosure of Internal Control Practices: Evidence from European Companies

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The purpose of this paper is to examine the effect of the board of directors, namely board size, board independence, and CEO duality, as well as audit quality on the disclosure of internal control information. The sample consists of 164 European companies listed in the STOXX Europe 600. Based on positive agency theory, the authors posit that board of directors and audit quality influence corporate internal control disclosure practice. The content analysis and the design of the evaluation criterion were used to calculate the disclosure index of internal control. Thus, multiple regression analysis is utilized to analyze the results of this paper. The average internal control information disclosure index was 0.285, indicating that most of the companies in our sample do not disclose enough information about the internal control. This low level of forward-looking information disclosure makes it very difficult for corporate stakeholders to determine the future performance of the company. Multivariate results indicate that internal control disclosure is positively and significantly associated with board independence, CEO duality, and audit quality. This study contributes to the literature on the various governance characteristics and disclosure by showing that the disclosure of internal control information in European countries is positively and significantly associated with board independence, separation of duties, and audit quality. Our study was based on a sample of European companies including countries regulating IC disclosure as well as unregulated settings. As noted by Bedard and Graham (2014), regulatory differences in countries can contribute insights on the costs and benefits of disclosure. Findings also have policy implications for investors, managers, and regulators.

Keywords: board of directors, disclosure of internal control, audit quality, STOXX 600, Board independence, CEO duality

Introduction

The many financial scandals that have shaken financial markets and investors around the world have certainly contributed to the recognition of the key role of internal control in corporate governance. According to the literature, the internal control system contributes to protecting the interests of investors by promoting and ensuring the reliability of financial reporting and by focusing the attention of boards on the timely identification, evaluation, and management of financial reporting risks that could jeopardize the achievement of the

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company's objectives. Fundamentally, an internal control system is considered as a management tool that serves to achieve performance and profitability objectives and prevent the loss of resources. It also helps to ensure that information is reliable and that a company complies with the laws and regulations (Michelon, Beretta, & Bozzolan, 2009; Hunziker, 2013).

Over the past two decades, many well-known companies have been exposed to financial fraud scandals such as the cases of Enron, World-Com, Global Crossing, Arthur Andersen in 2002, Parmalat in 2003, Xerox, Guangxia, and China Aviation Oil. One of the important reasons of financial fraud is the failure of the internal control system and the lack of disclosure of related information. An effective internal control system can guarantee the veracity and reliability of financial information. Disclosure of information can contribute to the continuous improvement of internal control, as they provide data for decision-makers. The establishment and implementation of the effective internal control system can ensure the company's continuity of operation and sound development. The quality of the disclosed internal control information reflects the situation of the system, which is vital for regulators and investors. Thus, the quality of information of a listed company is subject to its corporate governance.

Therefore, this paper aimed to empirically examine the influence of the board of directors' characteristics and audit quality on internal control disclosure of sampled firms in the European context. Based on a review of the theoretical and empirical literature, the characteristics of the board of directors have a positive influence on the extent of disclosure of internal control. In this regard, several researchers state that the size of the board is a determinant of disclosure of internal control as companies with a large board are more involved in this practice (Michelon et al., 2009; Hunziker, 2013; Li, Zhang, & Wang, 2014). However, other researchers state that the size of the board affects disclosure negatively (Leng & Ding, 2011; Agyei-Mensah, 2016). As a result, the effect of this characteristic of the board is still controversial.

Other characteristics of the board of directors have attracted the attention of many researchers. For example, previous works show that the independence of the board of directors has a more or less important effect on the disclosure of internal control information. These mixed results led to the study on the validity of this inconclusive relationship in different contexts (Michelon et al., 2009; Leng & Ding, 2011; Agyei-Mensah, 2016). Along the same lines, the majority of researchers found a positive relationship between the separation of the CEO and Chair of the Board position and internal control disclosure (Michelon et al., 2009; Johnstone, Li, & Rupley, 2011). The effect of audit quality on the extent of disclosure of internal control has also been a hot topic (Xiaowen, 2012; Agyei-Mensah, 2016). Based on what has been advanced, we can summarize our problem by asking a central question: How could the characteristics of the board of directors as well as the audit quality affect the extent of disclosure of internal control information?

It follows that the main objective of our work was to study the effect of the board of directors' characteristics and the audit quality on the extent of the disclosure of internal control information in European companies belonging to the STOXX 600 index.

This study extends the previous literature thereby making an incremental and distinct contribution. First, it shows the disclosure of internal control information in European countries is positively and significantly associated with board independence, separation of duties, and audit quality. Second, our study was based on a sample of European companies including countries regulating IC disclosure as well as unregulated settings. As noted by Bedard and Graham (2014), regulatory differences in countries can contribute insights on the costs and benefits of disclosure. In regulatory environment, disclosure provides investors with relevant information

about possible gaps in the functioning of the internal control system. Finally, our study has relevant implications for investors looking for profitable investment opportunities, managers, regulators, academics, and setting a future research agenda.

This study provides empirical evidence that internal control disclosure is valuable and economically important for market participants in European countries. In particular, the work of internal control disclosure is timely, since in recent years, European companies have gradually adopted the provisions of the European transparency directive, along with the recommendations on corporate governance reports, introducing inter alia the disclosure of several information in the annual reports including information about internal control system.

The remainder of the paper is organized as follows: Section 2 will develop the theoretical and conceptual framework in order to develop the research hypotheses. Section 3 will outline the adopted research methodology. The presentation and discussion of the results will be the subject of Section 4. Finally, Section 5 will present the conclusions and the limitations of this research.

Theoretical Framework and Hypotheses Development

Theoretical Foundations of Disclosure of Internal Control Information

The present work aimed at highlighting the effect of the board of directors' characteristics as well as the audit quality on the disclosure of internal control. To answer our research question, we mobilized several theories including positive agency theory, signal theory, and legitimacy theory.

The positive agency theory. Previous works (Jensen & Meckling, 1976; Fama & Jensen, 1983) provide a rich theoretical framework for studying the role of corporate governance in disclosing information about internal control. According to the agency theory, a company with high agency costs will tend to reduce them by increasing the scope of voluntary disclosure and by using an "intensive" monitoring system, such as the presence of external directors within the board of directors of a company. Myers and Majluf (1984) argue that information asymmetry gives rise to an adverse selection problem that leads to an undervalued capital of the firm on the market resulting in a loss of wealth for shareholders. Researchers like Jensen and Meckling (1976) and Chow and Wong-Boren (1987) also argue that agency theory may explain why managers voluntarily disclose information about internal control. Knowing that shareholders will seek to control their behavior through bonding and monitoring activities, managers voluntarily disclose certain information to convince shareholders that they are acting optimally. Voluntary disclosure is based on the company's governance structure, managers' attitudes toward voluntary information changes, and the trade-off between cost benefits.

According to this theory, large companies, for example, must disclose more information because of the increased costs of external agencies as the amount of potential wealth transfer increases with the size of the firm (Bronson, Carcello, & Raghunandan, 2006). In addition, Deumes (2004) investigated whether voluntary reports on internal control by management can be viewed as a monitoring mechanism that reduces conflicts between management and other stakeholders on a sample including 149 Dutch companies classified for the year 1997. He showed, according to the hypotheses of agency theory, that the extent of the costs of the equity is significantly correlated with the level of voluntary disclosure of information on internal control. However, no correlation between the variables that represent the agency's debt costs and the level of disclosure was found. It was concluded that management reports more on internal control if it seeks a higher level of surveillance because of the increased costs of agency. Thus, agency theory provides a framework for linking corporate governance to environmental disclosure because corporate governance mechanisms intend to control the

agency problem and align the interests of management and stakeholders by reducing the asymmetry of information (Ho & Wong, 2001; Allegrini & Greco, 2013). In this context, it is suggested that the board is the ultimate internal control mechanism to oversee managers on behalf of shareholders and other stakeholders (Said, HjZainuddin, & Haron, 2009).

Signal theory. According to Spencer's theory of signaling, financial reporting comes from management's willingness to reveal its performance, where good performance will improve management's reputation and position in the services market and good reporting. Disclosure of internal control information is considered one of the aspects of good performance. In addition, signaling is a reaction to asymmetric information in the markets because companies have more information than investors do. Ross (1977) argues that companies have widely disclosed voluntary information because of the signal theory. Thus, managers of large companies will want to distinguish between their companies and small businesses.

It is generally accepted that the willingness of a company to disclose information is related to its profitability. According to the signal theory, companies are more likely to report their quality to investors when their performance is good (Watson, Shrivess, & Martson, 2002). This means that the higher the profitability of a company, the stronger the motivation to disclose information about internal control. According to Song (2012), when a company reaches a certain level of profitability, the governance structure will be relatively complete and the internal control will be adequately robust and thus it will actively disclose information about internal control.

The legitimacy theory. The theory of legitimacy is based on the concept of a contract between a firm and its stakeholders based on the premise that companies signal their legitimacy by disclosing certain information in the annual report. An important way for companies to legitimize their activities is to disclose information about internal control to the public to justify its existence in the society by legitimizing its activities (Naser, Al-Hussaini, Al-Kwari, & Nuseibeh, 2006).

The theory of legitimacy offers another theoretical explanation for the voluntary disclosure of non-financial information. Suchman (1995) defines legitimacy as "a generalized assumption or perception that the actions of an entity are correct, desirable or appropriate in a socially constructed system of values, norms and beliefs." (p. 574). If the legitimacy of a company is threatened because stakeholders perceive their performance as unsustainable, the long-term survival of the company is at risk. These negative effects may come from poor image, client dissatisfaction, litigation, stricter regulation, and hiring problems, and other causes (Wood, 1991).

Development of Research Hypotheses

Several studies have shown that some factors, namely the size of the board of directors, the independence of the board of directors, the separation of the duties of CEO, and the chairman of the board of directors, and the audit quality influence the extent of disclosure of internal control information.

The effect of the size of the board on the extent of disclosure of internal control information. Corporate governance has received increasing attention over the last few years by academics, regulators, and professional bodies. Among the key topics is internal control, voluntary/mandatory corporate reporting on internal control and internal procedures. Disclosing this information with the description of the tools and instruments used is useful for reducing the asymmetry of information between the manager and the stakeholders. In fact, from this source of communication, the market can appreciate and perceive the

effectiveness of internal control procedures. As part of this research work, we were interested in several characteristics of the board of directors including its size, which has been the subject of various debates. Some countries set an optimal size, while others choose a minimum and maximum size (Ahmadi, Nakaa, & Bouri, 2017).

As the core of corporate governance, the board of directors is responsible for setting up and implementing the company's internal control system which ensures the veracity and reliability of information disclosure. It must also define the appropriate policies on internal control. The board must also ensure that internal control is effective in managing risks in the way it has approved (Hunziker, 2013). The size of the board reflects, to some extent, the ability of directors to participate in making important decisions and to oversee management. In the same vein, Leng and Ding (2011) argue that the size of the board partly reflects the ability of directors to participate in important business decision-making processes and to effectively monitor management. They assume that the size of the board is a proxy for the expertise and professional experience of the board. Therefore, a large board can improve the quality of voluntary disclosure of internal control.

However, the presence of the board of directors in the company is crucial for monitoring management decisions and ensuring that they reveal credible rather than spontaneous voluntary information (Healy & Palepu, 2001). As an internal control organization, the supervisory board has the right to oversee the board and the management and to supervise the establishment and implementation of the internal control system. Supervisors do not have the right to decide but the right to supervise. The effect of supervisors is often overlooked. The size of the board can show the influence of supervisors and affect the disclosure of information about internal control. As a result, companies that disclose this information should be able to obtain cheaper finance and reduce their cost of capital (Linsley & Shrivess, 2006) which will push these companies to disclose more information, especially on internal control.

In accordance with the theory of legitimacy, the size of the board of directors reflects the responsibility of the company towards the shareholders and all other stakeholders. This implies that the large size of the board is a guarantee to translate this legitimacy. It also allows the company to have more opportunities and multidisciplinary skills so that the board plays a more effective role in accounting information and especially in the process of disclosure of internal control information. Another argument in favor of increasing the size of the board, based on the resource dependence theory, is that a large number of board members bring a variety of knowledge and more abilities to manage the capital resource companies (Al-Janadi, Rahman, & Omar, 2013).

As an important determinant of board effectiveness (Allegrini & Greco, 2013), the size of the board can be seen as a crucial corporate governance mechanism that can influence the level of voluntary corporate disclosure, including disclosure of information about internal control (Michelon et al., 2009). From the point of view of agency theory, more directors on the board of directors can contribute to the effectiveness of their oversight, as large boards offer diversity in financial expertise and more management monitoring capabilities (Larmou & Vafeas, 2010). In addition, large boards communicate the weaknesses that are subject to internal control. Consistent with these arguments, the results of empirical studies, such as Allegrini and Greco (2013) and Hunziker (2013), document a positive relationship between the size of the board and the level of disclosure. However, Leng and Ding (2011) and Agyei-Mensah (2016) find a non-significant association between the size of the board and the extent of voluntary disclosure of information.

In our research work it is assumed that the size of the board of directors acts positively on the extent of disclosure of internal control, so we can hypothesize the following:

Hypothesis (H1): The size of the board of directors has a positive impact on the extent of disclosure of internal control information.

The effect of the independence of the Board of Directors on disclosure of internal control information. Another important feature of the board, which is widely studied in the literature, is board independence. The board of directors is usually composed of dependent and independent members. On the one hand, dependent members are directly responsible for running a business or are the family members who own the business. On the other hand, the independent members essentially represent the interests of the minor shareholders because they are not directly involved in solid activities and their only affiliation with the company is management (Sharif & Rashid, 2014). In addition, from the point of view of the agency theory, it is widely accepted that as the proportion of independent directors increases, the effectiveness of the board in the supervision and control of management also increases (Chau & Gray, 2010). In this regard, independent directors may encourage companies to disclose more information to third parties. One way for the company to legitimize their business is to disclose information about internal control.

Cheng, Li, Luo, and Du (2009) show that independent directors provide a more secure control mechanism for the management of employment contracts so that the professional knowledge of independent directors makes board decisions more scientific and capable of effectively preventing distortion of financial reporting. We anticipate that a higher proportion of independent directors on a board will encourage the company to voluntarily audit its internal control system and disclose the audit report.

For their part, and based on a sample of Irish companies for the year 2002, Donnelly and Mulcahy (2008) conclude that there is a positive and significant relationship between the independence of the board and the extent of voluntary dissemination of information in the annual report. In addition, Lakhal (2006) finds that the presence of non-executive directors on the board does not affect the voluntary publication of results by the directors of companies listed on the Paris stock exchange.

In this respect, it can be said that independent directors are generally experts in various fields such as economics, law, accounting, and taxation. Independent directors are responsible for improving the quality of disclosure of internal control information and increasing the transparency of information.

Finally, based on the argument of the agency's theory, having more non-executive directors on the board provides more power to monitor management in order to disclose more information (Al-Janadi et al., 2013) and especially information that is related to internal controls. Consistent with these arguments, previous empirical studies, such as Michelon et al. (2009) and Agyei-Mensah (2016) document that there is a positive relationship between the independence of the board of directors and the level of disclosure of internal control.

The second hypothesis is formulated as follows:

Hypothesis (H2): The presence of external directors on the Board of Directors has a positive effect on the extent of disclosure of internal control information.

The effect of the separation of the functions of Chairman of the Board of Directors and Chief Executive Officer on the disclosure of internal control information. The duality of the duties of the CEO is a very well studied practice within the Board of Directors. Separation of duties is a guarantee to discipline the leader. In addition, it may lead managers to disclose more information about the various operations of the firm. Thus, internal control is a vital element of the company and also plays an important role in its control. This is justified by the fact that internal control is the basis of accounting. As such, a good internal control system is a reasonable guarantee of effective and relevant accounting. In this sense, the voluntary publication of

information concerning internal control is perceived as positive by the financial market. In addition, the separation of positions of the leader pushes him to publish voluntary information and especially that related to the weaknesses of internal control which increases his credibility vis-à-vis shareholders.

In addition, an effective communication policy is one that includes any type of information, whether voluntary or non-voluntary. In this respect, companies that are subject to very stringent environmental and economic regulations may adopt this voluntary disclosure approach on their internal control system to adequately meet the requirements imposed by the corresponding authorities.

This trend of publication of voluntary information is also explained by the new orientation of firms in the area of corporate social responsibility. Since it is responsible ecologically or socially, the company is committed to an extensive communication process, in this case in terms of internal control. In the same vein, adopting a voluntary disclosure is important for the company that applies the separation of the CEO and the chairman positions. The publication of information and, above all, weaknesses in internal control allows companies to set up procedures for dealing with and correcting these weaknesses in order to guarantee quality information.

As a result, Johnstone et al. (2011) find that the disclosure of a significant deficiency is positively associated with the replacement of CEO. The disclosure of a significant deficiency is a negative event for a company because it provokes negative reactions in the market (Hammersley, Myers, & Shakespeare, 2008) and is positively associated with the cost of capital (Ogneva, Subramanyam, & Raghunandan, 2007; Ashbaugh-Skaife, Collins, & Lafond, 2009). Furthermore, audit costs increase after the disclosure of significant deficiency (Raghunandan & Rama, 2006). These negative events destabilize the balance of governance, prompting companies to change senior management. Examples of such incentives include reputational capital and the experience a new CEO can bring to correct negative events (Agrawal & Cooper, 2007; Johnstone et al., 2011).

In addition, management must put in place a set of internal controls to ensure that these objectives are understood and that the activities that are likely to prevent the organization from achieving these objectives are limited. The internal control system is an essential component of the corporate governance mechanism. Good governance is associated with the separation of the functions of CEO and Chairman of the Board. The internal control system must include channels that effectively communicate the guidelines of the board and allow for accurate, formal, and informal reporting. The speed of information allows the board and management of the organization to take the necessary steps to modify activities so that their goals and objectives are more likely to be achieved (Holm & Laursen, 2007).

Given that, duality may limit the complete transfer of private information between the CEO and the board members, which will result in less voluntary disclosure (Kim & Buchanan, 2008). The separation of the CEO's and the chairman's functions, in line with best practices, strengthens the supervisory role of the board of directors and enhances the disclosure of information about the internal control system to investors. Empirical evidence on the relationship between voluntary disclosure and CEO duality is mixed. While Leng and Ding (2011) and Allegrini and Greco (2013) document a clearly negative association between CEO duality and voluntary disclosure, Michelon et al. (2009), found a positive relationship between the separation of the functions of CEO and chairman of the board and the extent of disclosure of internal control information.

In our research, it is assumed that the separation is very beneficial on the extent of disclosure of internal control, we can hypothesize the following.

Hypothesis (H3): The separation between the functions of CEO and Chairman of the Board of Directors has a positive impact on the extent of disclosure of internal control information.

The effect of the quality of the auditor on the extent of disclosure of internal control information. Voluntary reports on internal control can be viewed as a monitoring function to reduce agency costs caused by conflicting interests between management and shareholders (Hunziker, 2013). As a result, in order to demonstrate their financial reliability, companies want to be certified by a well-known audit firm such as the Big 4 firm. The certification of accounts by these firms allows the company to reduce these agency costs and information asymmetry. Similarly, they push the company to correct or regularize its internal control system, if it suffers from some limitations. Likewise, large audit firms have sophisticated tools that enable them to provide more effective control, especially in the area of internal control. They also push them to disclose information about internal control to enhance financial security and reduce the financing cost of these companies.

The first characteristic of the audit firm that we consider is its size. The big 4 firms are characterized by a diversity of skill and expertise as well as human resources compared to other unbranded auditors to protect their reputational capital. Thus, they tend to be more conservative than non-big 4 ones (Krishnan, 2005). Due to increased resources and reputation, big 4 firms are more likely to detect and report internal control issues and are therefore less likely to be associated with reporting internal control weaknesses than non-big 4 firms. This leads to a positive association between the size of the audit office and the weakness of the internal control.

In addition, Ashbaugh-Skaife, Collins, and Kinney Jr. (2007) argue that big 4 firms have a reputation to protect and are motivated to perform high quality internal control quality reviews and to ensure that companies disclose weaknesses in internal control. Furthermore, they have the resources to invest in systems, processes, and training to produce high quality audits.

Internal control issues have implications for financial reporting, so it is essential for the company to ensure internal control. Doyle, Ge, and McVay (2007) argue that the least profitable firms have more internal control problems than the most profitable ones. As a result, companies with internal control problems are less likely to hire a big 4 auditor because of limited financial resources.

In addition, the quality of the audit is associated with the improved quality of the disclosure of information (Al-Janadi et al., 2013). In this regard, several studies have examined the association between big 4 and the quality of reporting, such as Song (2012) and Agyei-Mensah (2016) who found a negative association between big 4 and disclosure of internal control information. Based on what has been advanced, we can propose the following hypothesis.

Hypothesis (H4): The quality of the audit has a positive effect on the extent of the disclosure of internal control information.

Methodology

Sample and Data Sources

Our initial sample included all European non-financial listed companies belonging to the STOXX 600 index during the financial year 2015. More specifically, we are interested in French, German, and Italian companies. In French and Germany the disclosure on internal control is required by regulation. In Italy the disclosure is based on a complied or explained principle. Our sample was made up of 187 companies, including 84 French companies, 72 German companies, and 31 Italian companies. Financial firms (banks and insurance

companies) were excluded from the sample because their special rules of internal control disclosure make them incomparable with non-financial corporations. Companies with partially missing capital market data were excluded for a full case approach. As a result, the final sample included 164 companies. The research is limited to a single year (2015), because disclosure practices of a firm are relatively stable over time.

To test our assumptions, we collected the data for the dependent variable from the 2015 annual reports and reference documents of companies in the STOXX 600 Index. The data used in this paper relating to the independent and control variables come from the Thomson Reuter database (Data Stream), annual reports, and reference documents, and from the Thomson Reuters ASSET4 ESG database. Annual reports and reference documents were collected from the company's website. Tables 1 and 2 summarize the sample selection procedures.

Table 1

The Procedure for Selecting the Sample

Elements	Number
Initial population	600
Deductions:	
Companies other than French, German, and Italian companies	(413)
Financial corporations (banks and insurance companies)	(22)
Companies with missing data	(1)
Final sample retained	164

Table 2

Distribution of Our Sample by Country

Sample distribution	French	Germany	Italy	Total
Initial sample	84	72	31	187
Minus	(7)	(7)	(8)	(22)
Financial corporations (banks and insurance companies)				
Companies with missing data	0	0	(1)	(1)
Total	77	65	22	164

Measurement of Variables

At this point, we tried to enumerate the different variables that can be divided into the dependent variable, namely disclosure of information about internal control, independent variables that relate primarily to the characteristics of the board of directors, and control variables relating to the characteristics of the firm.

Measurement of the dependent variable. Disclosure of Internal Control Information (DICI) was the dependent variable in this study. To determine the extent of disclosure of internal control information, the data were manually extracted from the annual reports and corporate reference documents used in the study. The content analysis and the design of the evaluation criterion were used to calculate the disclosure index of internal control and those certainly reflect the approach of Leng and Ding (2011). A disclosure index was then designed based on the use of an item referring to information about internal control that does or does not exist in annual reports.

As a result, the disclosure score was calculated based on this approach. Thus, the level of disclosure was measured for each company by the ratio between the score obtained and the maximum score possible for each company. This measure has been used by several previous studies, such as Leng and Ding (2011) and

Agyei-Mensah (2016). Appendix 1 summarizes the items of disclosure of internal control information (see annex).

This can be written mathematically as follows:

$$\text{Disclosure Index on Internal Control} = \frac{\sum_1^m d_i}{\sum_1^n d_i}$$

With:

d_i = a binary variable that takes 1 if the item is disclosed and 0 otherwise,

m = the number of items disclosed and,

n = the maximum number of disclosure items possible.

More specifically, this index can be written as follows:

$$\text{Disclosure Index on Internal Control} = \frac{\text{Actual disclosure of the company}}{\text{Total Disclosure Possible}} \quad (8)$$

Measurement of independent variables. The independent variables of the study were the size of the board of directors, the independence of the board, the separation of the functions of chairman of the board and CEO, and the audit quality.

- The size of the board

We adopted the same measure as that of Johnstone et al. (2011), Hunziker (2013), and Agyei-Mensah (2016). In this study, the size of the board was simply measured by the total number of directors on the board of directors.

- The independence of the board of directors

This variable is measured by the proportion of independent directors compared to the total number of directors. This measure has been used in several studies, such as Michelon et al. (2009), Leng and Ding (2011), and Li et al. (2014).

- Separation of the functions of Chairman of the Board and Chief Executive Officer

It is a binary variable that takes the value of 0 in the case where the functions are performed by the same person (if a president is also the general manager) and 1 otherwise. This measure has been used in several studies, such as Chau and Gray (2010), Al-Janadi et al. (2013), and Michelon, Bozzolan, and Beretta (2015).

- The audit quality

It is a binary variable coded 1 if audit firms belong to Big 4 and 0 otherwise. In our study, we adopted the same measure as that of Song (2012), Li et al. (2014), and Agyei-Mensah (2016).

Measurement of control variables. Drawing on previous work linking ICD and governance characteristics, we include the following control variables in our analysis: firm size (FSIZE) is measured as the natural logarithm of total assets (Leng & Ding, 2011; Song, 2012; Agyei-Mensah, 2016); leverage (LEV) is the ratio of total debts to total assets (Ashbaugh-Skaife et al., 2009; Michelon et al., 2009); liquidity (LIQDT) is measured by the ratio of current assets to current liabilities (Song, 2012; Agyei-Mensah, 2016); we include return on assets (ROA) to control for a firm's profitability (Johnstone et al., 2011); CSR committee (CSR_SC) is a binary variable that takes the value of 1 if the company has a CSR committee and 0 otherwise; institutional ownership (INSTO) represents the percentage of capital held by institutional investors (Agyei-Mensah, 2016). Finally, we control for the impact of enforcement (ENF) and industry (INDUS) on disclosure of internal control information (Michelon et al., 2009; Michelon et al., 2015). Detailed variable definitions are provided in the Appendix 2.

Research Model

To test our assumptions about the relationship between board characteristics, audit quality, and disclosure of internal control information we proposed the following model:

$$DICI = \beta_0 + \beta_1 BODS + \beta_2 PNED + \beta_3 DUAL + \beta_4 AUDTQ + \beta_5 FSIZE + \beta_6 LEV + \beta_7 LIQD + \beta_8 ROA + \beta_9 CSR_{SC} + \beta_{10} INSTO + \beta_{11} ENF + \beta_{12} INDUS + \varepsilon_i$$

With:

- DICI: Disclosure of information on internal control.
- BODS: The total number of directors on the board of directors.
- PNED: Proportion of independent directors compared to the total number of directors.
- DUAL: Binary variable that takes 0 if there is a cumulative function and 1 otherwise.
- AUDTQ: Binary variable coded 1 if audit firms are part of BIG4 and 0 otherwise.
- FSIZE: The natural logarithm of the total assets of the enterprise.
- LEV: The ratio of total debts to total assets.
- LIQDT: The ratio of current assets to current liabilities.
- ROA: Net income/total assets.
- CSR_SC: Binary variable that takes the value of 1 if the company has a CSR committee and 0 otherwise.
- INSTO: The percentage of capital held by institutional investors.
- ENF: the dummy equal to 1 if the firm is listed in France or in Germany and 0 otherwise.
- INDUS: 1 if company is classified as industrials, 0 otherwise.
- $\beta_0 \rightarrow \beta_{12}$: Constitute the parameters to estimate.
- ε_i : Error term.

Methodology

The relationship between the characteristics of the board of directors and the level of disclosure of internal control is tested using the ordinary least squares multiple linear regression method. The regression was performed using the STATA software.

Analysis and discussion of the results

Before presenting the empirical results, we describe the descriptive statistics of the variables in this study.

Descriptive statistics of research variables

Table 3 presents the descriptive statistics (number of observations, average, standard deviation, minimum and maximum) for the variables used in this study.

As can be seen in Table 3, the average disclosure of internal control information is 0.285 and the standard deviation is 0.14. Its minimum and maximum values are equal to “0” and “0.67”, respectively. This implies that the voluntary disclosure of internal control information in the financial reports of sampled companies is very low. The low level of forward-looking information disclosure (0.285) makes it very difficult for corporate stakeholders to determine the future performance of the company.

Regarding the variables related to the characteristics of the board of directors, the average size of the board of directors of the firms in our sample is more than 12 members. The board of directors of the companies in our sample has an average of 72% of independent members, which is effective for good corporate governance. Moreover, 37% of the companies in our sample opt for the separation of the duties of the CEO and Chair of the Board. The majority of the companies in our sample (95.7%) have an external auditor belonging to the big 4.

Table 3

Descriptive Statistics

Variables	N	Average	Standard deviation	Minimum	Maximum
DICI	164	0.285	0.145	0	0.67
BODS	164	12.585	5.177	3	24
PNED	164	72.006	26.054	6.54	90.84
DUAL	164	0.371	0.484	0	1
AUDTQ	164	0.957	0.203	0	1
FSIZE	164	16.393	1.833	13.51	19.74
LEV	164	0.266	0.147	0.004	0.6
LIQDT	164	1.313	1.155	0.47	13
ROA	164	0.050	0.046	-0.090	0.22
CSR-SC	164	0.713	0.453	0	1
INSTO	164	33.528	33.382	0	93.6
ENF	164	0.865	0.341	0	1
INDU	164	0.378	0.486	0	1

Notes. Variables are defined as follows: DICI: Disclosure of information on internal control; BODS: The size of the board; PNED: The proportion of external directors in the board; DUAL: The separation of the functions of Chairman of the Board and Chief Executive Officer; AUDTQ: The quality of audit; FSIZE: The size of the company; LEV: Level of indebtedness; LIQDT: Liquidity; ROA: The economic profitability of the assets; CSR_SC: The CSR Committee; INSTO: Property of institutional investors; ENF: Dummy equal to 1 if firm is listed in France or in Germany, 0 otherwise; INDUSRY: 1 if company is classified as industrials, 0 otherwise.

Correlation Analysis

We use Pearson correlation coefficient to test collinearity between variables. Kennedy (1985) thought that collinearity doesn't exist if the correlation coefficient is not greater than 0.8.

Table 4

The Pearson Correlations Matrix as Resultant from the Independent and Control Variables Along With the VIF Coefficients

	BODS	PNED	DUAL	AUDTQ	FSIZE	LEV	LIQDT	ROA	CSR-SC	INSTO	ENF	INDU	VIF
BODS	1.000												2.07
PNED	0.517	1.000											1.71
DUAL	0.205	-0.150	1.000										1.42
AUDTQ	0.048	-0.066	0.038	1.000									1.02
FSIZE	0.392	0.195	0.094	0.021	1.000								1.34
LEV	-0.002	-0.061	0.006	-0.065	0.186	1.000							1.14
LIQDT	-0.034	0.113	-0.038	0.029	-0.053	-0.256	1.000						1.16
ROA	-0.156	0.009	-0.012	0.030	-0.285	-0.175	0.151	1.000					1.22
CSR-SC	0.478	0.304	0.128	-0.001	0.242	0.012	0.094	-0.202	1.000				1.45
INSTO	0.039	0.163	0.009	-0.044	0.089	-0.014	-0.132	-0.172	0.118	1.000			1.16
ENF	0.049	0.281	0.194	0.004	-0.074	-0.178	0.084	0.104	0.105	-0.007	1.000		1.29
INDU	0.149	0.110	0.046	0.041	0.201	-0.071	0.010	0.004	0.275	0.010	-0.023	1.000	1.14

Notes. Variables are defined as follows: BODS: The size of the board; PNED: The proportion of external directors in the board; DUAL: The separation of the functions of Chairman of the Board and Chief Executive Officer; AUDTQ: The quality of audit; FSIZE: The size of the company; LEV: Level of indebtedness; LIQDT: Liquidity; ROA: The economic profitability of the assets; CSR_SC: The CSR Committee; INSTO: Property of institutional investors; ENF: Dummy equal to 1 if firm is listed in France or in Germany, 0 otherwise; INDUSRY: 1 if company is classified as industrials, 0 otherwise.

Table 4 shows correlation coefficients between variables. There is some correlation between variables, whereas the largest correlation coefficient is 0.517 (between PNEB and BODS), which is less than 0.8. Thus variables are unlikely collinear.

We also test variance inflation factor to further illustrate the problem. Table 4 illustrates that the maximum of variance inflation factor is 2.07, less than 10, which means no collinearity between variables, according to laws of mathematical statistics.

Multivariate Analyses

Table 5 presents the explanatory power of the model, the beta coefficients, the *T*-Student, the *F* statistic, and its meaning as well as a summary of the regression results relating to all the explanatory variables of this model.

As can be seen from this table, 33.5% of the variation in the level of disclosure of internal control is explained by variables related to board characteristics and control variables. The Fisher (*F*) statistic of 6.94 confirms the good quality of the model at a significance level of less than 1%. As a result, the explanatory power of the model appears satisfactory since Fisher's *F* statistic is significant at 1% level. Thus, we reject the null hypothesis and state that the regression is significant as a whole. We can conclude that the model is statistically significant and is explanatory of the studied phenomenon.

Table 5

Results of Multiple Linear Regression

	Coefficient	<i>T</i> -Student	Significance
Constant	0.1802	1.65	0.100
BODS	0.0015	0.59	0.555
PNEB	0.0000	2.96	0.001
DUAL	0.0497	2.09	0.038
AUDTQ	0.0805	1.67	0.096
FSIZE	-0.0065	-1.08	0.283
LEV	0.1091	1.56	0.120
LIQDT	-0.0073	-0.81	0.417
ROA	0.0006	0.27	0.790
CSR-SC	0.0339	1.32	0.188
INSTO	0.0003	0.97	0.331
ENF	0.0722	2.08	0.039
INDU	0.0248	1.08	0.281
Model statistics		Statistics $F = 6.94$, Sig = 0.000 $R^2 = 0.335$; R^2 adjusted = 0.2973	

Notes. Variables are defined as follows: BODS: The size of the board; PNEB: The proportion of external directors in the board; DUAL: The separation of the functions of Chairman of the Board and Chief Executive Officer; AUDTQ: The quality of audit; FSIZE: The size of the company; LEV: Level of indebtedness; LIQDT: Liquidity; ROA: The economic profitability of the assets; CSR_SC: The CSR Committee; INSTO: Property of institutional investors; ENF: Dummy equal to 1 if firm is listed in France or in Germany, 0 otherwise; INDUSRY: 1 if company is classified as industrials, 0 otherwise.

From Table 5 above, we can test our hypotheses and present the explanations related to them.

The first hypothesis (H1) is used to check whether the size of the board of directors has a positive influence on the level of disclosure of internal control. Let us first note that, contrary to our hypothesis (H1), the results of the regression presented in Table 4 confirm that the size of the board of directors does not have a

significant effect on the disclosure of internal control information. The results show that the coefficient relative to the size of the board of directors is positive (0.0015) and not significant (t student = 0.59 and $p = 0.55$) meaning that this variable has no effect on disclosure of internal control. These results invalidate the first hypothesis (H1). This finding is in agreement with the results of Leng and Ding (2011) and Agyei-Mensah (2016). However, it is inconsistent with those of Michelon et al. (2009) and Hunziker (2013). As a result, the size of the board of directors is not a determining factor of disclosure of internal control. Therefore, whatever the size of the board, this variable has no impact on the extent of the disclosure of internal control. This also shows that board members do not attach great importance to internal control information.

The second hypothesis (H2) states that the presence of external directors on the board of directors has a positive effect on the extent of disclosure of internal control information. Table 5 indicates that the independence of the board of directors is positively (0.000) and significantly related to the internal control disclosure (t student = 2.96 with $p = 0.001$). This allows us to accept the second hypothesis (H2). Thus, the presence of independent directors in the board plays an important role in the determination of the internal control index. This means that the presence of independent directors pushes the company to disclose more information about internal control. This result is consistent with previous studies by Michelon et al. (2009) and Agyei-Mensah (2016) who showed that board independence is positively correlated with internal control disclosure score, contrary to studies by Leng and Ding (2011) and Michelon et al. (2015). This result justifies that the independent directors are more interested in the quality of the accounting information. In this respect, their presence within the company ensures a voluntary disclosure policy on internal control. In addition, this empirical result highlights the classic roles played by administrators in reliability and financial transparency. In addition, the boards that are dominated by independent directors are more effective in terms of quality and breadth of information, as they push companies to disclose financial and non-financial information.

The third hypothesis (H3) states that the separation of the functions of CEO and Chairman of the Board of Directors has a positive impact on the extent of disclosure of internal control information. Thus, we note from the same table that the coefficient relative to the DUAL variable is positive (0.049) and significant (t student = 2.09 and $p = 0.038$) at 5% level. This allows us to accept the third hypothesis (H3). This is consistent with previous results of Michelon et al. (2009) which show that the separation of the functions of CEO and Chairman of the Board has a positive impact on the extent of disclosure of internal control information. However, it is contrary to the results of Leng and Ding (2011). The separation of positions allows the executive to demonstrate reliable transparency with respect to shareholders and creditors. As a result, the manager seeks to reduce information asymmetry and conflicts of interest by adopting a reliable disclosure policy regarding internal control since the procedures of the internal control system are found at the base of the annual reports. In addition, companies that adopt the separation are more transparent and disclose all types of information voluntarily in order to influence the decision-making of current and potential shareholders.

The fourth hypothesis (H4) states that the quality of the audit firm has a positive effect on the extent of disclosure of internal control information. The empirical results show that audit quality has a positive effect on the extent of disclosure of internal control. Thus, the coefficient for this variable is positive (0.080) and significant (t student = 1.67 and $p = 0.096$) at 10% level. These results confirm the fourth hypothesis (H4). This is contrary to the studies of Song (2012) and Agyei-Mensah (2016).

We can explain the results found by the importance of the review of the internal control system in the audit processes. In this regard, it is necessary to recall that the opinion of auditors is mainly influenced by the

weaknesses present in the system of internal control. Therefore, a quality auditor is a reasonable guarantee as to the reliability of the internal control system. This strong and positive link between the internal control system and the well-known international network audit membership is justified by the interdependence of these two mechanisms. The auditor who is part of the international network cares for its reputation and brand image in the market. As a result, it attaches great importance to internal control system procedures in order to determine that the materiality level of annual reports is based on the quality of internal control. To conclude, there is a complementarity between the quality of audit and the quality of internal control.

Robustness Analyses

In order to test the robustness of the empirical results, multiple regression was performed for DICI by using three countries.

Table 6 gives the results of the second stage regression. The unreported coefficients in first stage regression are similar in the signs and significance of the coefficients shown in Table 5 with DICI level at $p = 0.000$.

This result specifically demonstrates that there is no significant difference in the legal and institutional framework between the three countries in question. In addition, the decision on the disclosure that we are studying is a voluntary decision, which justifies the similarity of the results found.

Our results are very interesting for regulators if we do country-by-country analysis and allow us to generalize our results a bit in the European context.

Table 6

Multi-variable Estimation Regression Results

Variables	Model (1): France firms		Model (2): Germany firms		Model (3): Italy firms	
	Coef.	<i>T</i> -student	Coef.	<i>T</i> -student	Coef.	<i>T</i> -student
Constant	0.4524	3.21	-0.1211	-0.46	-0.5813	-1.47
BODS	0.0081	1.54	0.0042	0.96	-0.0001	-0.03
PNED	0.0006	0.84	0.0002	0.26	-0.0000	-0.05
DUAL	0.0088	0.23	-0.0025	-0.04	0.0034	0.05
AUDTQ	0.1655	2.13	0.0059	0.08	0.2993	2.08
FSIZE	-0.0253	-3.02	0.0104	0.66	0.0224	0.91
LEV	0.1420	1.21	0.1590	1.26	0.0126	0.06
LIQDT	-0.0213	-0.93	0.0112	1.09	0.0495	1.00
ROA	0.0005	0.12	0.0034	0.92	-0.0027	-0.38
CSR-SC	0.0206	0.45	-0.0139	-0.32	-0.0104	-0.14
INSTO	-0.0005	-1.07	0.0002	0.53	0.0020	2.21
INDUS	0.0170	0.51	0.0240	0.73	0.0505	1.03
Observations	77		65		22	
R^2	0.2903		0.3501		0.5232	
R^2 adjusted	0.2511		0.3263		0.4187	
Statistics <i>F</i>	5.37		4.85		7.38	
Prob > <i>F</i>	0.000		0.000		0.000	

Notes. Variables are defined as follows: BODS: The size of the board; PNED: The proportion of external directors in the board; DUAL: The separation of the functions of Chairman of the Board and Chief Executive Officer; AUDTQ: The quality of audit; FSIZE: The size of the company; LEV: Level of indebtedness; LIQDT: Liquidity; ROA: The economic profitability of the assets; CSR_SC: The CSR Committee; INSTO: Property of institutional investors; ENF: Dummy equal to 1 if firm is listed in France or in Germany, 0 otherwise; INDUSRY: 1 if company is classified as industrials, 0 otherwise.

These results show that the empirical results in Table 5 are robust to distribute our sample by country. The coefficients of all other variables have signs and significance similar to those of the original regression.

The findings of this study afford empirical evidence on the extent of internal control information disclosure in European countries, and can be useful for investors looking for profitable investment opportunities and will help provide some reference information for regulators and stakeholders to help improve financial reports.

The researcher on the basis of the results suggests that companies in European should improve their IC systems and corporate governance structure as a way of managing their risk factors, ensuring the quality of financial reporting, and achieving sustainable development of the firms.

Conclusion

The main objective of the present work was to study the impact of the characteristics of the board of directors as well as audit quality on the extent of disclosure of internal control information.

We mobilized several theories to answer our problem. In this regard, we tried based on the contributions of the agency theory or signals theory to develop our theoretical foundation of the relationship between the characteristics of the board of directors and disclosure of internal control. The use of the agency theory in the present work indicates that companies with high independence of the board of directors are likely to disclose more information about internal control. Voluntary disclosure on internal control may be viewed as a monitoring function to reduce conflicts between management and shareholders.

Our empirical study was based on a sample of 164 European companies belonging to the STOXX 600 index for the financial year 2015. The average Internal Control Information Disclosure Index was 0.285 indicating that most of the companies in our sample do not disclose enough information about internal control.

There is a positive and insignificant relationship between the size of the board of directors and disclosure of internal control. These results invalidate the first hypothesis (H1). Nevertheless, for the other board characteristics, namely the board independence and duality have a positive and statistically significant effect on the extent of disclosure of internal control information, which allows us to accept the second and third hypotheses (H2 and H3). Similarly, audit quality seems to have a positive and significant effect on the extent of disclosure of internal control information which corroborates the last hypothesis (H4).

This study contributes to the literature on the various governance characteristics and disclosure by showing that the disclosure of internal control information in European countries is positively and significantly associated with board independence, separation of duties, and audit quality.

Our study was based on a sample of European companies including countries regulating IC disclosure as well as unregulated settings. As noted by Bedard and Graham (2014), regulatory differences in countries can contribute insights on the costs and benefits of disclosure.

Our study will be relevant to academics interested in internal control accounting research, as well as to policymakers, investors, creditors, managers, auditors, financial analysts.

Like all research work, the present work suffers from some limitations, which might open up new prospects for future research. In this regard, the measure of the index of disclosure of internal control differs from one context to another and as we adopted the measure of Leng and Ding (2011) and Agyei-Mensah (2016), we eliminated other approaches. In addition, the collection of this variable in this study was primarily based on annual reports and reference documents although other sources, such as press releases and prospectuses, may

be useful. Future research will use these sources to improve results. Similarly, future work will use the behavioral and cognitive approaches in studying the link between the characteristics of the board of directors and disclosure of internal control.

References

- Agrawal, A., & Cooper, T. (2007). *Corporate governance and accounting scandals evidence from top management, CFO and auditor turnover*. Tuscaloosa: Culverhouse College of Business.
- Agyei-Mensah, B. K. (2016). Internal control information disclosure and corporate governance: Evidence from an emerging market. *Corporate Governance*, 16(1), 79-95.
- Ahmadi, A., Nakaa, N., & Bouri, A. (2017). Chief executive officer attributes, board structures, gender diversity and firm performance among French CAC 40 listed firms. *Research in International Business and Finance*, 44, 218-226.
- Al-Janadi, Y., Rahman, R. A., & Omar, N. H. (2013). Corporate governance mechanisms and voluntary disclosure in Saudi Arabia. *Corporate Governance*, 4(4), 25-35.
- Allegrini, M., & Greco, G. (2013). Corporate boards, audit committees and voluntary disclosure: Evidence from Italian listed companies. *Journal of Management and Governance*, 17(1), 187-216.
- Ashbaugh-Skaife, H., Collins, D. W., & Kinney Jr, W. R. (2007). The discovery and reporting of internal control deficiencies prior to SOX-mandated audits. *Journal of Accounting and Economics*, 44(1-2), 166-192.
- Ashbaugh-Skaife, H., Collins, D. W., & Lafond, R. (2009). The effect of SOX internal control deficiencies on firm risk and cost of equity. *Journal of Accounting Research*, 47(1), 1-43.
- Bedard, J., & Graham, L. (2014). Reporting on internal control, Chapter 25. In D. Hay, R. W. Knechel, and M. Willekens (Eds.), *The Routledge Companion to Auditing* (pp. 311-321). Abingdon, UK: Routledge.
- Bronson, S. N., Carcello, J. V., & Raghunandan, K. (2006). Firm characteristics and voluntary management reports on internal control. *Auditing: A Journal of Practice & Theory*, 25(2), 25-39.
- Chau, G., & Gray, S. J. (2010). Family ownership, board independence and voluntary disclosure: Evidence from Hong Kong. *Journal of International Accounting, Auditing and Taxation*, 19(2), 93-109.
- Cheng, Li, Luo, & Du, X., Li, H., Luo, Y., & Du, P. (2009). Can financial information distortion events prompt the companies revise the system of independent directors? *China Accounting Review*, 7(1), 87-96.
- Chow, C. W., & Wong-Boren, A. (1987). Voluntary financial disclosure by Mexican corporations. *Accounting Review*, 62(3), 533.
- Deumes, R. (2004). *Voluntary reporting on internal control by listed Dutch companies*. Working paper, Maastricht University, Maastricht, Faculty of economics and business administration.
- Donnelly, R., & Mulcahy, M. (2008). Board structure, ownership, and voluntary disclosure in Ireland. *Corporate Governance: An International Review*, 16(5), 416-429.
- Doyle, J., Ge, W., & McVay, S. (2007). Determinants of weaknesses in internal control over financial reporting. *Journal of Accounting and Economics*, 44(1-2), 193-223.
- Fama, E., & Jensen, M. (1983). Separation of ownership and control. *The Journal of Law and Economics*, 26(2), 36-67.
- Hammersley, J. S., Myers, L. A., & Shakespeare, C. (2008). Market reactions to the disclosure of internal control weaknesses and to the characteristics of those weaknesses under section 302 of the Sarbanes Oxley Act of 2002. *Review of Accounting Studies*, 13(1), 141-165.
- Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31(1-3), 405-440.
- Ho, S. S., & Wong, K. S. (2001). A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation*, 10(2), 139-156.
- Holm, C., & Laursen, P. B. (2007). Risk and control developments in corporate governance: Changing the role of the external auditor? *Corporate Governance: An International Review*, 15(2), 322-333.
- Hunziker, S. (2013). *Internal control disclosure and agency costs-evidence from Swiss listed non-financial companies*. Working paper, Institute of Financial Services Zug IFZ, Lucerne University of Applied Sciences.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Johnstone, K., Li, C., & Rupley, K. H. (2011). Changes in corporate governance associated with the revelation of internal control material weaknesses and their subsequent remediation. *Contemporary Accounting Research*, 28(1), 331-383.

- Kim, K. H., & Buchanan, R. (2008). CEO duality leadership and firm risk-taking propensity. *Journal of Applied Business Research*, 24(1), 27-41.
- Krishnan, J. (2005). Audit committee quality and internal control: An empirical analysis. *The Accounting Review*, 80(2), 649-675.
- Lakhal, F. (2006). Les mécanismes de gouvernement d'entreprise et la publication volontaire des résultats en France. *Comptabilité & Contrôle-Audit*, 12(2), 69-92.
- Larmou, S., & Vafeas, N. (2010). The relation between board size and firm performance in firms with a history of poor operating performance. *Journal of Management and Governance*, 14(1), 61.
- Leng, J., & Ding, Y. (2011). Internal control disclosure and corporate governance: Empirical research from Chinese listed companies. *Technology and Investment*, 2(4), 286.
- Li, Y., Zhang, D., & Wang, X. (2014). The influence of corporation governance structure on internal control audit report lag: Evidence from China. *Accounting and Taxation*, 6(2), 101.
- Linsley, P. M., & Shrive, P. J. (2006). Risk reporting: A study of risk disclosures in the annual reports of UK companies. *The British Accounting Review*, 38(4), 387-404.
- Michelon, G., Beretta, S. E., & Bozzolan, S. (2009). Disclosure on internal control systems as substitute of alternative governance mechanisms. Retrieved from: SSRN: <http://ssrn.com/abstract=1316323>
- Michelon, G., Bozzolan, S., & Beretta, S. (2015). Board monitoring and internal control system disclosure in different regulatory environments. *Journal of Applied Accounting Research*, 16(1), 138-164.
- Myers, S., & Majluf, N. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187-221.
- Naser, K., Al-Hussaini, A., Al-Kwari, D., & Nuseibeh, R. (2006). Determinants of corporate social disclosure in developing countries: The case of Qatar. *Advances in International Accounting*, 19, 1-23.
- Ogneva, M., Subramanyam, K. R., & Raghunandan, K. (2007). Internal control weakness and cost of equity: Evidence from SOX section 404 disclosures. *The Accounting Review*, 82(5), 1255-1297.
- Raghunandan, K., & Rama, D. V. (2006). SOX Section 404 material weakness disclosures and audit fees. *Auditing: A Journal of Practice & Theory*, 25(1), 99-114.
- Ross, S. A. (1977). The determination of financial structure: The incentive signaling approach. *Bell Journal of Economics*, 8(1), 23-40.
- Said, R., HjZainuddin, Y., & Haron, H. (2009). The relationship between corporate social responsibility disclosure and corporate governance characteristics in Malaysian public listed companies. *Social Responsibility Journal*, 5(2), 212-226.
- Sharif, M., & Rashid, K. (2014). Corporate governance and corporate social responsibility (CSR) reporting: An empirical evidence from commercial banks (CB) of Pakistan. *Quality and Quantity*, 48(5), 2501-2521.
- Song, X. W. (2012). Corporate characteristics and internal control information disclosure—Evidence from annual reports in 2009 of listed companies in Shenzhen stock exchange. *Physics Procedia*, 25, 630-635.
- Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20(3), 571-610.
- Watson, A., Shrive, P., & Martson, C. (2002). Voluntary disclosure of accounting ratios in the UK. *British Accounting Review*, 34(4), 289-313.
- Wood, D. J. (1991). Corporate social performance revisited. *Academy of Management Review*, 16(4), 691-718.

Appendix 1: Internal control evaluation sheet

Item	Content	Scores
Internalenvironment	Corporate governance structure, human resources policies, corporate culture	Disclosing = 1, otherwise = 0
Riskevaluation	Identification of internal and external risk, risk analysis, risk responses	Disclosing = 1, otherwise = 0
Control activities	Internal control activities based on risk evaluation	Disclosing = 1, otherwise = 0
Information and communication	The establishment of information and communication system	Disclosing = 1, otherwise = 0
Internal supervision	Internal supervision from internal audit department	Disclosing = 1, otherwise = 0
Internal control defects	The defects or abnormal items in internal control and the improvement methods	Disclosing = 1, otherwise = 0
Internalassessment	Assessment from board of directors	Disclosing = 1, otherwise = 0
Externalassessment	Externalauditor's assessment	Disclosing = 1, otherwise = 0

Source: Adapted from Leng and Ding (2011) and Agyei-Mensah (2016).

Appendix 2: Variable definitions

Variable	Definition
Dependent variable	
DICI	The total of the internal control items disclosed / the maximum number of disclosure items possible.
Independent variables	
BODS	The total number of directors on the board of directors.
PNED	Proportion of independent directors compared to the total number of directors.
DUAL	Binary variable that takes 0 if there is a cumulative function and 1 otherwise.
AUDTQ	Binary variable coded 1 if audit firms are part of BIG4 and 0 otherwise.
Control variables	
FSIZE	The natural logarithm of the total assets of the enterprise.
LEV	The ratio of total debts to total assets.
LIQDT	The ratio of current assets to current liabilities.
ROA	Net income / total assets.
CSR_SC	Binary variable that takes the value of 1 if the company has a CSR committee and 0 otherwise.
INSTO	The percentage of capital held by institutional investors.
ENF	Dummy equal to 1 if firm is listed in France or in Germany; 0 otherwise.
INDUS	1 if company is classified as industrials, 0 otherwise.