



Tékhne

www.elsevier.pt/tekhne



ARTICLE

Voluntary disclosure, information asymmetry and the perception of governance quality: An analysis using a structural equation model



H.S. Alves^{a,*}, N. Canadas^a, A.M. Rodrigues^b

^a Superior School of Technology and Management of Leiria – Polytechnic Institute of Leiria, Portugal

^b Faculty of Economy of the University of Coimbra, Portugal

Received 10 July 2014; accepted 1 October 2015

Available online 26 October 2015

KEYWORDS

Voluntary disclosure;
Information asymmetry;
Corporate governance;
Organizational performance;
Structural equation modelling (SEM)

Abstract This study analyzes the direct and indirect relation between the governance rules and information asymmetry, through the voluntary disclosure and organizational performance, using Iberian Peninsula listed companies. The results show that for firms with high levels of disclosure the bid–ask spread is lower. However, in firms with a high ownership concentration investors tend to increase the bid–ask spreads and trade less. The results show us how the governance rules exert influence on the proxies of information asymmetry in the market. The failure to find the relationship between voluntary disclosure of information and the turnover ratio shows us that the liquidity of shares is more related to the greater or lesser concentration of shareholders, with the performance of their companies than with the access to information. Moreover, it is clear that the role that information disclosure plays in these markets is mainly at the level of price formation.

© 2014 Instituto Politécnico do Cávado e do Ave (IPCA). Published by Elsevier España, S.L.U. All rights reserved.

1. Introduction

In the last years, authorities and market regulators considered corporate governance and disclosure as two inseparable key instruments for investor protection and the functioning of capital markets. This protection namely refers to the reinforcement of the administrators' loyalty and responsibility, the role of the non-executive independent

administrators as supervisors, the structure of supervision and, within the purpose of this work, the transparency between the company and the market. According to Buskirk (2012) the relation between disclosure and information asymmetry is multi-dimensional. Our purpose is to empirically examine the direct and indirect relation between the governance rules and information asymmetry, through the voluntary disclosure and organizational performance.

The separation of ownership and control in publicly listed companies gives rise to information asymmetries between managers and investors because managers have superior information on the firm's current and future performance to

* Corresponding author.

E-mail address: helena.alves@ipleiria.pt (H.S. Alves).

outside investors (Jensen & Meckling, 1976; Myers & Majluf, 1984). The literature recognizes that firms might find it advantageous to give additional pieces of information to outsiders, through the annual report or other communication channels (e.g. García Benau and Monterrey Mayoral, 1993). The information asymmetry between firms and potential investors, due to a low level of disclosure, increases the cost of capital by introducing the adverse selection between buyers and sellers of the firm's shares (Petersen & Plenborg, 2006). According to Rinaldo (2002) the information asymmetry refers to information not yet embodied in the fundamental asset value.

According to Welker (1995) considerable resources have been devoted to establishing and enforcing regulations intended to improve public perceptions of corporate disclosure practices. Past literature has pointed out the adverse effects that information asymmetries have on the functioning of markets (Akerlof, 1970). Information asymmetry is thought to promote a reluctance to trade and increase the cost of capital as investors "price protect" against potential losses from trading with better informed market participants (Bhattacharya & Spiegel, 1991). The results of prior studies about the relation between voluntary disclosure and information asymmetry suggest that voluntary public information can reduce the level of information asymmetry among market participants, and thus can help to form an efficient market. Analytically, Barry and Brown (1985), Diamond (1985), Diamond and Verrecchia (1991) and Kim and Verrecchia (1994) argue that more information generally reduces information risk on prices. Likewise, voluntary disclosure serves to reduce information asymmetry among traders. Empirically, Welker (1995), Healy, Hutton, and Palepu (1999) and Leuz and Verrecchia (2000) investigate links between voluntary disclosure and stock liquidity. Companies might pursue a disclosure strategy in response to perceived illiquidity for their shares in the market. Disclosure literature has shown that high quality of public disclosures reduce information asymmetry and, as a result, increase stock market liquidity. Welker (1995), Bushee and Noe (2000) and Leuz and Verrecchia (2000) argue that information asymmetry could be measured by both trade-based and order-based measures, i.e. transaction volumes and bid-ask spreads.

Voluntary disclosure is a channel through which existing and potential shareholders obtain value information about the firm, namely about the company's performance, been, for that reason, the connection between corporate "insiders" and capital market "outsiders". Through the 1970s and 1980s the research on corporate governance issues was largely focused on United States corporations. In more recent years, however, we have witnessed an explosion of research on corporate governance around the world, for both developed and emerging markets. Despite this, and according to Méndez and García (2007), in contexts featured by high ownership concentration and board of directors dominated by representatives of controlling shareholders, it is more difficult to extrapolate from studies on the Anglo-Saxon markets. Specific research is therefore needed to take in account these features, which are the norm in many countries (Shleifer & Vishny, 1997). The Spanish and Portuguese institutional setting has in common with other European Continental countries a relatively low number of

listed companies, an illiquid capital market and, above all, a high level of concentration in corporate shareholdings. According to Denis and McConnell (2003, p. 29), concentrated ownership can be a "reasonable response to a lack of investor protection". In this sense, Spain and Portugal provide a suitable environment to test the existence of interactions among governance rules, corporate voluntary disclosure and information asymmetry in the market. According to Esperança, Sousa, Soares, and Pereira (2011) good governance practices are essential to give confidence to investors. Given that the information provided reflects the degree of transparency and accountability of the organization with shareholders, it becomes one of the most important aspects of corporate governance. To Khelifi and Bouri (2010) the most important motive for corporate disclosure is to reduce information asymmetry between corporate management and outside investors. Recently Shroff, Sun, White, and Zhang (2013) and Hinson and Utke (2015) results show that voluntary disclosure quality reduces both information risk and information asymmetry.

We built a voluntary disclosure index based on the information firms provided in their annual reports and public websites and used the turnover ratio and the bid-ask spread as proxies for the information asymmetry in the market. We divided the governance characteristics in two constructs: directors' and supervisors' structures and ownership structure. By using the methodology of structural equation modelling, we are able to analyze the direct and indirect relations among the variables under study. Consistently with prior definitions in different regulatory national environments (Allegrini & Greco, 2011; Cooke, 1989; Depoers, 2000; Meek, Roberts, & Gray, 1995; Raffournier, 1995), we consider voluntary disclosure as the information released to the outside deriving from management's insider knowledge of the company, which are not required to be published in regulated reports. Voluntary disclosure is, therefore, produced by a management's reporting decision (Healy & Palepu, 2001; Meek et al., 1995). We analyzed the information disclosed by Iberian Peninsula non-financial listed companies, concerning the year of 2007. In this sense, we analyzed the information disclosed few time after the obligation of following International Financial Reporting Standards (IFRS) as endorsed by the European Union. Furthermore, in Spain, the Unified Good Governance Code, applicable from 2007 onwards, provided a common standard for the good governance practices of all listed firms. In Portugal, the recommendations on corporate governance were implemented in 2001, continuing to regularly improve its legislative framework through a process of bi-annual amendments. Therefore both countries share a common standard for the good governance and disclosure practices.

This paper is hereby intended to contribute to the study of the impact of the corporate governance rules in the voluntary disclosure of information and in the organizational performance, and hence in the reduction of information asymmetries, in the specific case and reality of the countries of the Iberian Peninsula. Furthermore, most of the prior research in this area has studied the link between corporate governance and disclosure and between disclosure and information asymmetry. Few studies directly examined the link between corporate governance and information asymmetry. One way of viewing the contribution of our study is that it

provides an analysis of the relationships between corporate governance, voluntary disclosure and a market-determined measure of information asymmetry (i.e. bid-ask spread and turnover ratio). Furthermore, this is the first study with this data using the SEM methodology. The majority of previous studies used linear regression models. Otherwise, there is a considerable lack of studies about the information asymmetry subject, using Portuguese and Spanish data. We hope that this research contributes to the perception of the disclosure practices adopted by the Iberian Peninsula listed companies. The results of this study may be useful to understand the information voluntarily disclosed by companies, their determining factors and their consequences in terms of impact on information asymmetry and functioning of the market. Furthermore, our findings are expected to provide implications regarding corporate governance monitoring mechanisms.

This paper is organized as follows. In the next section, Section 2, the research hypotheses are presented and in Section 3 the research design is described. Section 4 describes the data and the descriptive statistic. Analysis and results are discussed in Section 5. Section 6 summarizes and concludes the study.

2. Research hypotheses

By using a structural equation model, we intend to study the direct and indirect relation between the governance rules and information asymmetry, through voluntary disclosure and organizational performance. The accounting report is the most affirmative way to give visibility to the activity and to the organizational performance. Lang and Lundholm (1993) argue that firms with high disclosure ratings tend to show high contemporaneous earnings performance. Also Petersen and Plenborg (2006) state that firms may increase disclosure when they are performing well. In this sense, the inclusion of organizational performance in the proposed model is explained by the fact that disclosure is a channel through which existing and potential shareholders obtain valuable information about the firm, namely about the company's performance, being, for that reason, the connection between corporate "insiders" and capital market "outsiders". A higher profitability might induce management to supply more information to illustrate its ability to maximize the shareholder's value (Singhvi & Desai, 1971). In this sense, and according to Healy and Palepu (2001, p. 431), *"the association between capital market variables and disclosure may be driven by firm performance rather than disclosure per se"*. Our model followed the arguments of the authors by considering that *"disclosure changes are unlikely to be random events: they are likely to coincide with changes in firm economics and governance characteristics"*.

We divided the governance rules in two major constructs: the ownership structure and the directors and supervisors structures. We hypothesized that directors and supervisors structures can influence the organizational performance and the information disclosed by firms to its shareholder and this, in turn, would affect the level of information asymmetry between management and shareholders. In relation to ownership structure, it is expected to exert an indirect influence on the level of information asymmetry, but the previous research showed us that a direct influence can

also be expected. Like stated previously, the Spanish and Portuguese institutional setting has in common with other European Continental countries a high level of concentration in corporate shareholdings. Following this argument, will be included in the construct "ownership structure" variables that characterize the ownership concentration of the companies under study. The research model is presented in Fig. 1. The hypotheses, as well as the arguments of its formulation, are following presented.

2.1. Directors' and supervisors' structures

According to Dehaene, De Vuyst, and Ooghe (2001) the board of directors is an important entity in a company, creating a link between shareholders and managers and therefore playing an important role in the governance of a firm. To the authors, the board of directors is the most important and frequently used supervisory mechanism for management actions and, from a governance point of view, board composition thus has an impact on corporate performance. For example, Baysinger and Butler (1985) find that companies where the board is dominated by non-executive directors perform better than boards that are not. Lee, Rosenstein, and Rangan (1992) report that the shareholders' value is best served when the board contains a substantial number of independent directors.

Klein (1998) demonstrates a linkage between firm performance and board composition by examine the committee structures of boards and directors' roles within these committees. She was able to find significant ties between firm performance and how boards are structured. Cai, Keasey, and Short (2006) and Kanagaretnam, Lobo, and Whalen (2007), assert that firms with boards that are effective in monitoring management activities tend to be associated with more frequent disclosures of quality information which in turn reduces information asymmetry. Firms with such effective boards also provide additional voluntary disclosures apart from those required by mandatory regulation. The literature also recognize that a key role in the board monitoring activities is played by supervising structures, like the audit committee, the remuneration committee or the external auditor (Laksmana, 2008; O'Sullivan, Percy, & Stewart, 2008). In this sense, we can hypothesize that effective directors and supervisors structures are factors that function as tools that enhance organizational performance and exert a direct and determinant influence on the level of voluntary information disclosed. In this context, we established the following relations:

H_{1a}. There is a positive relation between directors' and supervisors' structures and voluntary disclosure.

H_{1b}. There is a positive relation between directors' and supervisors' structures and the level of organizational performance.

2.2. Ownership structure

The structure of ownership determines the level of monitoring and thereby the level of disclosure. Fama and Jensen (1983) propose that where share ownership is widely held,

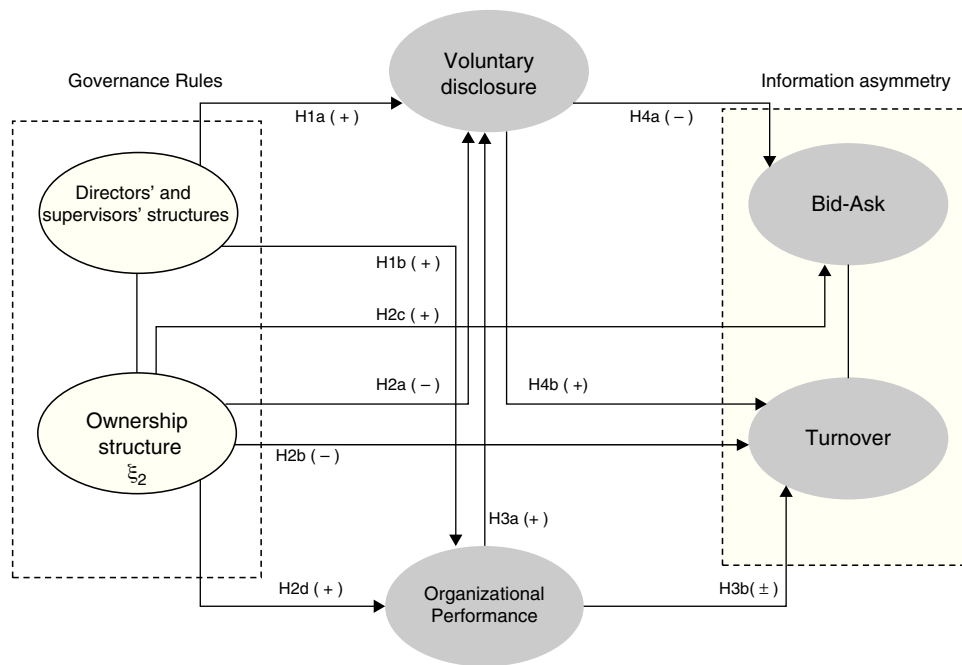


Figure 1 Path graphic of the proposed mode.

the potential for conflicts between the principal and the agent is greater than in more closely held companies. As a result, more information is disclosed in widely held firms so that principals can effectively monitor that their economic interests are optimized and agents can signal that they act in the best interests of the owners. In the same sense, [Petersen and Plenborg \(2006\)](#) argue that firms with a high ownership concentration may be reluctant to provide voluntary disclosure since shareholders have alternative ways (inside) of getting information. Previous empirical evidence also indicates a negative relation between ownership concentration and disclosure ([McKinnon & Dalimunthe, 1993](#); [Mitchell, Chia, & Loh, 1995](#); [Schadewitz & Blevins, 1998](#)). High levels of concentration of capital are accompanied by the owner's considerable involvement in the firm's management, which, in turn, lead to unrestricted access to information by "insiders" and less available information to "outsiders" ([Raffournier, 1995](#)). According to [Helflin and Shaw \(2000\)](#), large shareholders may have access to private, value-relevant information about the firm. In this situation, market makers mitigate losses to informed traders by charging wider spreads and reducing the number of shares they offer in response to increases in the probability of informed trading. Also, [Bolton and Von Thadden \(1998\)](#) suggest that in a concentrated ownership structure the number of shareholders who can trade the stock is smaller which reduces the liquidity of the stock. To [Berle and Means \(1933\)](#), diffuse ownership yields significant power in the hands of managers whose interests do not coincide with the interest of shareholders. As a result, corporate resources are not used for maximization of shareholders' value. [Shleifer and Vishny \(1986\)](#), [McConnell and Servaes \(1990\)](#), [Megginson, Nash, and Randenborgh \(1994\)](#) and [Zingales \(1994\)](#) find a strong positive relation between ownership concentration and corporate performance and attribute it to the impact of better

monitoring. In this context, we established the following relations:

H_{2a}. There is a negative relation between ownership concentration and voluntary disclosure.

H_{2b}. There is a negative relation between ownership concentration and the turnover ratio.

H_{2c}. There is a positive relation between ownership concentration and the bid-ask spread in the market.

H_{2d}. There is a positive relation between ownership concentration and organizational performance.

2.3. Organizational performance

[Singhvi and Desai \(1971\)](#) claim that in face of adverse selection, higher profitability might induce management to supply more information to illustrate its ability to maximize the shareholder's value and to increase its managerial compensation. In this sense, the authors also argue that the management of a profitable firm may feel proud of its achievement and wish to disclose more information to the public to promote a positive impression of its performance. Some research on management earnings forecasts (e.g. [Lev & Penman, 1990](#); [Patell, 1976](#); [Penman, 1980](#)) suggest that firms tend to disclose more frequently when they are experiencing favourable earnings results and that earnings forecasts are, on average, associated with positive returns. According to [Amihud and Mendelson \(1986\)](#), stocks of firms with higher returns are allocated in equilibrium to portfolios with longer expected holding periods. In this sense, the authors claimed that observed asset return must be an increasing function of the expected holding periods,

it also implies that the observed asset return must be a decreasing function of the turnover rate of that asset. More recently, [Petersen and Plenborg \(2006, p. 134\)](#) test, through regression models, the relation between the firm's return on invested capital (ROIC) and the turnover ratio, with no predicted sign. According to the authors "*the sign of the association between ROIC and information asymmetry is undeterminable*". Their results show a negative relation between the variables, but with no statistical significance. In this context, we established the following relations:

H_{3a}. There is a positive relation between organizational performance and voluntary disclosure.

H_{3b}. There is a relation between organizational performance and the turnover ratio (no predicted sign).

2.4. Voluntary disclosure

[Merton \(1987\)](#) argues that investors are more likely to invest and trade in firms that are well known or that they judge favourably. If higher disclosure quality increases a firm's visibility and/or reduces the costs of processing firm specific public information, then higher disclosure quality will induce more trading in firm's stock by uninformed investors. [Diamond and Verrecchia \(1991\)](#) and [Kim and Verrecchia \(1994\)](#) argue that voluntary disclosure reduces information asymmetries among informed and uninformed investors. Thus, it is expected that voluntary disclosure promote more efficient prices and increase stock transactions. [Petersen and Plenborg \(2006\)](#) find a negative and statistical significant association between the level of disclosure and the bid-ask spread and positive and statistical significant association between the level of disclosure and the turnover ratio. This result is generally supported through year-by-year regressions. This coherence indicates that if firms focus on improving the level of disclosure, they attract investors' attention. As a result they may experience more efficient prices on shares. In this context, we established the following relations:

H_{4a}. There is a negative relation between voluntary disclosure of information and the bid-ask spread.

H_{4b}. There is a positive relation between voluntary disclosure of information and the turnover ratio.

3. Research design

This section discusses the construction of the disclosure index, the proxies for the information asymmetry and the methodology used in our analysis. The measurement of the variables used in our study is similar to some recent disclosure and corporate governance studies.¹

3.1. Construction of the disclosure Index

The disclosure index is based on the information firms provide in their annual reports to shareholders and in public websites. The index is similar to that in [Eng and Teo \(1999\)](#), [Eng, Hong, and Ho \(2001\)](#), [Eng and Mark \(2003\)](#) and [Petersen and Plenborg \(2006\)](#). The design of the index is inspired by earlier studies and reports as, for example [AICPA \(1994\)](#) and [Botosan \(1997\)](#),² the [PwC Value Reporting \(1999\)](#) and [CICA \(2008\)](#). Common to these studies is that they focus on investors' needs. The Jenkins Report ([AICPA, 1994](#)), [Botosan \(1997\)](#) and [CICA \(2008\)](#) find that information about production is important for investors. In [PwCs \(1999\)](#) consider information about brands and customers as key drivers of value. [Botosan \(1997\)](#) included some areas within marketing strategy. In the marketing strategy literature like, for example, [Porter \(1996\)](#) and [Doyle \(2000\)](#), this area is considered important for the future success of a firm. We included in our index a category for addressing human capital, because this subject has gained considerable interest in accounting for intellectual capital and the debate about corporate governance. We also included in our index a category to score the information about their perspective of future evolution. In this sense, our disclosure index is based on the following six categories: strategy, market and competition, management and production, marketing, future perspective and human capital. A scoresheet was designed for scoring firms on the amount and the level of detail of disclosures. A total of 60 indicators within the six groups have been identified (see [Appendix A](#)). We read the annual reports of 2007 for the sample firms and assessed each annual report and official websites on the six disclosure categories. The disclosure index is unweighted as it assumes that each indicator of each disclosure category is equally important ([Gray, Kouhy, & Lavers, 1995](#)). [Cooke \(1989\)](#) suggests that unweighted indices are an appropriate research instrument in disclosure studies when the focus of the research is directed at all users of corporate annual reports rather than the information needs of any specific user group. Despite that, and following the approach of [Robb, Single, and Zarzeski \(2001\)](#), we use a scale, of zero to two, to score the level of detail of the information disclosed about each indicator inside the six categories. The firms' score was zero if the company did not disclose anything about that indicator, the score was one if the company has disclosure without detail and, finally, the score was 2 if the company disclosure has detail. We considered that information was disclosed with detail if it can help it's users in their decision-making. According to [Botosan \(1997\)](#) precise information is more useful and will enhance management's reputation and credibility. In short, our methodology is not to count sentences or paragraphs that refer to a particular item in a given category, but instead to see whether there is information disclosed about the item and the degree of detail of that information. We proceed to the validation of our voluntary disclosure index, following [Botosan \(1997\)](#), based on the following points: comparison with similar studies using voluntary

¹ Like [Eng and Teo \(1999\)](#), [Depoers \(2000\)](#), [Ho and Wong \(2001\)](#), [Eng et al. \(2001\)](#), [Chau and Gray \(2002\)](#), [Eng and Mark \(2003\)](#), [Arcay and Vázquez \(2005\)](#), [Petersen and Plenborg, 2006](#), [Linsley and Shrives \(2006\)](#), [Chung-Cheng Hsu \(2007\)](#) and [Wang et al. \(2008\)](#).

² [Botosan \(1997\)](#) provide a discussion about the advantages and disadvantages of using AIRM disclosure index versus a self constructed disclosure index.

disclosure indexes; positive statistically significant correlations between the number of analysts and the voluntary disclosure scores; an accepted value for the Cronbach's alpha coefficient; and similar results with previous studies of the correlation between the voluntary disclosure level and firm characteristics.

3.2. Proxies for information asymmetry

There are several studies, theoretical (Admati & Pfleiderer, 1988; Golsten & Milgrom, 1985; Stoll, 1978) and empirical (Amihud & Mendelson, 1986; Amihud & Mendelson, 1989; Brennan and Subrahmanyam, 1996) that look into this issue. Welker (1995) applies a bid-ask spread scaled by closing price as a proxy for market liquidity. Leuz and Verrecchia (2000) suggest a bid-ask spread and trading volume in firm's shares as proxies for the information asymmetry component of firm's cost of capital. Petersen and Plenborg (2006) follow the studies of Welker (1995) and Leuz and Verrecchia (2000) by applying the bid-ask spread and turnover ratio as two complementary proxies for information asymmetry. The bid-ask spread is commonly thought to measure information asymmetry explicitly (Leuz & Verrecchia, 2000). The turnover ratio reflects the willingness of some investors to sell shares and others to buy. This willingness to trade shares should be inversely related to the level of information asymmetry (Leuz & Verrecchia, 2000).

Following Petersen and Plenborg (2006), in our study the bid-ask spread and the turnover ratios are assumed to be proxies for information asymmetry. We followed Welker (1995) by considering the so called "baseline" spread (not conditioned on the occurrence of an information release). So, in our study the bid ask spread (BIDASK) is the daily bid ask spread (difference between the bid and the ask price) average of the company in the year of 2007. The turnover ratio (TURNOVER) is the value of shares traded during the year of 2007 divided by the firm's market value of equity at the end of the year.

3.3. Corporate governance characteristics

A summary of the used variables to characterize the corporate governance is provided in Table 1. We also identified some studies that used similar measures.

We divided the governance characteristics in two major categories: equity ownership structure and director's and supervisors' structures. To characterize the equity ownership structure we analyze the ownership concentration, management ownership and state ownership.

To characterize the director's and supervisors' structures we used variables that are related with the board characteristics, the management incentives and the monitoring and control structures (the existence of an audit committee, of a remuneration committee, of an internal audit function, of a corporate governance commission and, if the external auditor was one of the "Big 4"³ audit firms).

4. Data and descriptive statistics

4.1. Sample

Our sample consists of 140 listed firms from the Iberian Peninsula. Portugal has 38 firms included in this study, which represents 27.14% of our total sample and Spain has 102 firms included which represents 72.86%. The sample of our work consists of non-financial Iberian companies listed in the market, in the year of 2007. Disregarding financial firms, insurance companies and those that have different accounting years than that of the calendar year (e.g. Football clubs) it is justified because they differ, by their special nature, on the accounting methods. In that sense, their inclusion would make the comparison with other companies harder. The consolidated accounts of the selected companies are analyzed, when these companies are required to consolidate, and not the individual accounts, since for the study it makes more sense to analyze all the data of the group. The accounting and market data used in the research were collected from the Thomson Datastream database, as well as from the analysis of reports and accounts of the companies and the information disclosed by companies in their official sites. We also collected data from the annual reports about the corporate governance of listed companies, made by the Portuguese Securities Market Commission (CMVM, 2008) and the Spanish Securities Market Commission (CNMV, 2008) for the year of 2007.

We examined whether there are statistical significant differences between the companies from both countries by conducting several multivariate analysis of variance. The results showed that there are not statistical significant differences between the Spanish companies and the Portuguese companies in what concerns to general corporate characteristics, the so called "control variables". These last results give us a better confidence in using the companies of both countries as one single sample.

4.2. Descriptive statistics

In Table 2 we show the descriptive statistics of the continuous variables, in Table 3 of the dichotomous variables and in Table 4 of the voluntary disclosure variables. Companies in our study are widely distributed regarding to corporate size, measured by total assets, ranking from 26 millions of Euros to 105,873 millions of Euros. The variable remuneration average is nearly 16% of the total board remuneration, but we observe that the minimum is nearly zero and the maximum is 73%. The other kind of remuneration (funds, stock options, etc.) shows us a considerable mean of 31% of total remuneration and we can observe the extreme cases of zero and 100% of the board remuneration through this kind of payment. The part of the remuneration that is not fixed present a mean of 46% of the total board remuneration. The average board has approximately 10 members and includes a mean of 67% of non-executives, but only 26% are considered independent. In our sample, 4 is the average number of other societies in which board members exercise management functions. The proportion of shares owned by the state have a low average of 0,8%, being the biggest participation in 32% of the company's shares.

³ "Big 4": PriceWaterHouseCoopers; Deloitte; KPMG; Ernst&Young.

Table 1 Variables to characterize the corporate governance.

Variable		Definition	Studies
<i>Equity ownership structure</i>			
Ownership concentration	(MAINSHARE)	Proportion of capital owned by the biggest shareholder	Eng and Mark (2003) Arcay and Vázquez (2005) Petersen and Plenborg (2006) Wang et al. (2008)
	(MAINFIVE)	Proportion of capital owned by the biggest five shareholders	
	(SIGNIFICANT)	Proportion of capital owned by significant participations	
Management ownership	(DIRCAP)	Proportion of capital owned by members of the board	
	(DIROWNER)	Binary variable which took the value of 1 if directors own shares of the company and 0 if otherwise	
State ownership	(STATEOWNER)	Binary variable which took the value of 1 if the state owned shares of the company and 0 if otherwise	
	(CAPSTATE)	Proportion of capital owned by the state	
<i>Director's and supervisors' structures</i>			
Board characteristics	(INDEP)	Number of independent members of the board divided by the total number of members	Ho and Wong (2001) Eng and Mark (2003) Arcay and Vázquez (2005) Chung-Cheng Hsu (2007)
	(NONEXEC)	Number of non-executive members of the board divided by the total number of members	
	(BSIZE)	Number of members of the board divided by the natural logarithm of total assets	
	(EXPERTISE)	Average number of other societies in which board members exercise management functions	
	(VARREM)	Variable remuneration of the board divided by the total remuneration	
	(OTHERREM)	Value of other types of remuneration (stock option plans, insurances, etc.) divided by the total remuneration of the board	
	(DIRCOMP)	Proportion of board's remuneration that is not fixed ^a	

^a Sum between the value of variable remuneration and the value of other types of remuneration, divided by the total remuneration.

Variables definitions: INDEP is the number of independent members of the board divided by the total number of members; NONEXEC is the number of non-executive members of the board divided by the total number of members; BNUMBER is the number of members of the board; BSIZE is the number of members of the board divided by the natural logarithm of total assets; EXPERTISE is the average number of other societies in which board members exercise management functions; PERFOR1 is the earnings before interests and taxes divided by year-end total assets; ASSETS is the total assets (millions of Euros); VARREM is the value of the variable remuneration of the board divided by the total remuneration; OTHERREM is value of other types of remuneration to the board divided by the total remuneration; CAPSTATE is the proportion of the shares of the company own by the state; MAINFIVE is the proportion of the shares of the company own by the biggest five shareholders; MAINSHARE is the proportion of the shares of the company own by the biggest shareholder; TURNOVER is the value of shares traded during the year divided by the firm's market value of equity at the end of the year; BIDASK is

the daily bid ask spread (difference between the bid price and the ask price) average of the company in the year of 2007; CONTROLINDEX is the firm's individual score on monitoring and control issues divided by the total score (5 indicators: Corporate governance commission, Big4, Internal audit, Audit committee and Remuneration committee); ROE is the net income divided by the shareholders' equity; DIRCAP is the proportion of capital owned by the board; PERFOR2 is the earnings before interests, taxes, depreciations and amortizations divided by year-end total assets; SIGNIFICANT include the significant participations of shareholders that have, direct or indirectly, more than 2% of share capital and the shares held by other shareholders that exercise significant influence on company's life; DIRCOMP is the proportion of directors' remuneration that is not fixed.

The mean level of ownership concentration, studied by the proportion of the shares of the company owned by the biggest shareholder, is 39%, with a minimum of 5% and a maximum of 99%. The shares held by the main five shareholders and the significant participations present a mean close to 60%. The management ownership, measured by the

Table 2 Continuous variables.

	N	Mean	Median	Std. dev.	Min	Max
INDEP	140	0.262	0.273	0.187	0.000	0.750
NONEXEC	140	0.674	0.721	0.261	0.000	1000
BNUMBER	140	10,057	9000	4001	3000	22,000
BSIZE	140	0.476	0.462	0.162	0.152	0.944
EXPERTISE	140	4107	3000	4619	0.000	25,000
PERFOR 1	135	0.056	0.060	0.058	−0.195	0.233
ASSETS	140	5743	948	1423	26	105,873
VARREM	138	0.157	0.090	0.190	0.000	0.730
OTHERREM	138	0.311	0.255	0.294	0.000	1000
CAPSTATE	140	0.008	0.000	0.045	0.000	0.327
MAINFIVE	138	0.605	0.630	0.229	0.001	0.994
MAINSHARE	138	0.390	0.325	0.246	0.050	0.993
DIRCAP	130	0.230	0.110	0.264	0.000	0.993
SIGNIFICANT	137	0.624	0.650	0.213	0.000	0.990
TURNOVER	140	1652	1056	2.319	0.004	19,254
BIDASK	140	0.10	0.04	0.20	0.01	1.88
CONTROLINDEX	140	0.680	0.800	0.198	0.200	1000
ROE	139	0.097	0.140	0.292	−1.854	1233
PERFOR 2	139	0.106	0.094	0.105	−0.481	0.588
DIRCOMP	140	0.460	0.465	0.292	0.000	1000

Table 3 Dichotomous variables.

	N	0	%	1	%
BIG4	140	18	12.90	122	87.10
AUDCOM	140	24	17.10	116	82.90
REMCOM	140	11	7.90	129	92.10
INTAUD	140	49	35.00	91	65.00
DIROWNER	140	7	5.00	133	95.00
STATEOWNER	140	131	93.60	9	6.40
CORPGOVCOM	140	122	87.10	18	12.90

proportion of capital owned by directors, has a mean of 23%, but it is also widely distributed. The mean of bid ask spread is € 0.10, with a minimum of € 0.01 and a maximum of nearly € 1.88. The turnover ratio shows us a mean of 1652, a value bigger than the unity. This represents that companies' value of shares traded overcame their market value of equity.

By the analysis of the dichotomous variables we can conclude that the majority of companies in our study have an audit committee (AUDCOM), a remuneration committee (REMCOM) and have one of the big 4 external auditors

(BIG4). Otherwise, the majority of companies don't have an internal audit function (INTAUD) and a corporate governance commission (CORPGOVCOM). We can also confirm that a big number of companies have management ownership (DIROWNER), 95%, and that only 6% of the companies have state ownership (STATEOWNER).

Variables definitions: BIG4 is a binary variable which took the value of 1 for Big 4 audit firms and 0 for non-Big 4 audit firms; AUDCOM is a binary variable which took the value of 1 if a audit committee exists and 0 if otherwise; REMCOM is a binary variable which took the value of 1 if a remuneration committee exists and 0 if otherwise; INTAUD is a binary variable which took the value of 1 if a internal audit function exists and 0 if otherwise; DIROWNER is a binary variable which took the value of 1 if directors own shares of the company and 0 if otherwise; STATEOWNER is a binary variable which took the value of 1 if a the state own shares of the company and 0 if otherwise; CORPGOVCOM is a binary variable which took the value of 1 if a corporate governance commission exists and 0 if otherwise.

By the analysis of the disclosure variables, which result from the application of the disclosure index, we can see that the score for strategy (INDSTRA) and management

Table 4 Disclosure variables.

	N	Mean	Median	Std. dev.	Min	Max
INDTOTAL	140	0.470	0.475	0.152	0.109	0.850
INDMARK	140	0.315	0.250	0.235	0.000	0.929
INDSTRA	140	0.672	0.733	0.190	0.133	1.000
INDCOMP	140	0.369	0.364	0.164	0.045	0.727
INDMANAG	140	0.577	0.583	0.197	0.182	1.000
INDFUT	140	0.383	0.375	0.180	0.000	0.813
INDHCAP	140	0.353	0.313	0.254	0.000	1.000

Table 5 Indicators for each construct included in the structural equation model.

Constructs	Indicators	Cronbach's alpha ^a	Variance explained
Directors' and supervisors' structures	(X ₁) Proportion of independent directors on the board (X ₂) Size of the board (X ₃) Directors' compensations (X ₄) Proportion of non-executive directors on the board (X ₅) Board expertise (X ₆) Monitoring and Control index	0.703	0.414
Ownership structure	(X ₇) Significant participations (X ₈) Main shareholder (X ₉) Main five shareholders	0.903	0.830
Voluntary disclosure	(Y ₁) Voluntary disclosure index in strategy (Y ₂) Voluntary disclosure index in market and competition (Y ₃) Voluntary disclosure index in management and production (Y ₄) Voluntary disclosure index in future perspective (Y ₅) Voluntary disclosure index in marketing (Y ₆) Voluntary disclosure index in human capital	0.841	0.560
Organizational performance	(Y ₇) Return on equity (Y ₈) Performance 1 (Y ₉) Performance 2	0.868	0.793
Turnover	(Y ₁₀) Turnover ratio	–	1
Bid–ask	(Y ₁₁) bid–ask spread	–	1

The model was.

^a The alpha value should be above 0.7.

(INDMANAG) is significantly higher than for marketing (INDMARK) and human capital (INDHCAP). The score for strategy (INDSTRA) is the highest score, suggesting that management find information about strategy an important issue. Marketing (INDMARK) is the category with the lowest score. Even though the firms of today are increasingly dependent upon intangible resources disclosure on human capital (INDHCAP) is still one of the lowest score. The total voluntary disclosure index presents a mean of 47% of voluntary disclosure on the six categories included in our index.

Variables definitions: INDTOTAL is the firm's individual disclosure total score on the 60 indicators; INDMARK is the proportion of the firm's individual disclosure score on marketing issues to the maximum possible score applied in those issues (7 indicators); INDSTRA is the proportion of the firm's individual disclosure score on strategic issues to the maximum possible score applied in those issues (15 indicators); INDCOMP is the proportion of the firm's individual disclosure score on market and competition issues to the maximum possible score applied in those issues (11 indicators); INDMANAG is the proportion of the firm's individual disclosure score on management and production issues to the maximum possible score applied in those issues (11 indicators); INDFUT is the proportion of the firm's individual disclosure score on future perspective issues to the maximum possible score applied in those issues (8 indicators); INDHCAP is the proportion of the firm's individual disclosure score on human capital issues to the maximum possible score applied in those issues (8 indicators).

5. Analysis and results

5.1. Structural equation model

In Table 5 we have the explanation of the indicators of each construct included in our model the Cronbach's alpha and the percentage of variance explained obtained from the exploratory factor analysis.

The model was estimated (maximum likelihood estimation) by using EQS 6.1 through the SPSS 17.0 and using standardized variables. The choice of standardized variables overcomes the problems in fixing the scale of the latent variables resulting from the difference in scale of the original variables, as suggested by Long (1983) and O'Brien and Reilly (1995), among others. The results from Table 6 show us the standardized coefficients for each of the structural design relations established before, as well as the statistical significance of each one of them. The correlation between directors' and supervisors' structures and ownership structure (St. Beta = -0.419 ; $p < 0.01$) and between the turnover and the bid ask spread (St. Beta = -0.182 ; $p < 0.05$) presented a negative sign and statistical significance.

In this first model the non-significant relations allow us to reject some of the developed hypothesis. We found three statistically non-significant relations. The relation between ownership structure and voluntary disclosure, although presented the expected negative sign, which suggest that bigger ownership concentration led to a lower level of voluntary disclosure, was statistically non-significant. So we have to

Table 6 Standardized estimation of the initial structural model coefficients.

	Structural equations			
	η_1 Voluntary disclosure	η_2 Org performance	η_3 Turnover	η_4 Bid ask
ξ_1 Directors' and supervisors' structures	0.449 ^{***} (3.243)	0.401 ^{***} (3.242)		
ξ_2 Ownership structure	-0.014 (-0.151)	0.117 (1.104)	-0.447 ^{***} (-5.239)	0.217 ^{**} (2.390)
η_1 Voluntary disclosure			0.140 (1.408)	-0.270 ^{***} (-2.703)
η_2 Org performance	0.309 ^{***} (3.008)		-0.318 ^{***} (-3.403)	

*Significant at $0.05 < p \leq 0.10$.** Significant at $0.01 < p \leq 0.05$.*** Significant at $p \leq 0.01$.

Test statistic below.

reject the hypothesis H_{2a} . The relation between ownership structure and the organizational performance presented a positive coefficient but statistically non-significant. So we have to reject the hypothesis H_{2d} . Finally, the relation between voluntary disclosure and turnover presented a positive sign but statistically non-significant. So we have to reject the hypothesis H_{4b} . We made the respecification of the model without the non-significant relations. In Table 7 we show the standardized estimation of the final model coefficients and their statistical significance.

The results support the hypotheses H_{1a} , H_{1b} , H_{2b} , H_{2c} , H_{3a} , H_{3b} and H_{4a} . Directors' and supervisors' structures present a positive and statistically significant relation ($p < 0.01$) with voluntary disclosure and with organizational performance. These results suggest that the appointment of independent and non-executive directors, the dimension of the board, the board expertise, the board compensation and the formation of supervising structures are positively related to the provision of voluntary information and follow the

literature that relates corporate governance characteristics to organizational performance. Kanagaretnam et al. (2007) found that the effectiveness of the board has a significant impact on both the quantity and quality of corporate disclosures.

Klein (1998) also found significant ties between firm performance and how boards are structured. The turnover ratio is, as stated in the previous literature review, the willingness of some investors to sell shares and others to buy. The results show that the turnover ratio is negatively related with ownership structure construct and with organizational performance. The negative relation with ownership structure suggests that a bigger ownership concentration leads to less stock transactions in the market. Following the arguments of Bolton and Von Thadden (1998), in a concentrated ownership structure the number of shareholders who can trade the stock is also smaller, which in turn reduces the liquidity of the stock. The negative relation with organizational performance suggests that shares of companies with high

Table 7 Standardized estimation of the final structural model coefficients.

	Structural equations			
	η_1 Voluntary disclosure	η_2 Org performance	η_3 Turnover	η_4 Bid ask
ξ_1 Director's and supervisors' structures	0.456 ^{***} (3.622)	0.337 ^{***} (3.119)		
ξ_2 Ownership structure			-0.481 ^{***} (-5.621)	0.222 ^{**} (2.429)
η_1 Voluntary disclosure				-0.249 ^{**} (-2.529)
η_2 Org performance	0.312 ^{***} (3.091)		-0.255 ^{***} (-3.092)	
R^2	0.40	0.12	0.26	0.14

*Significant at $0.05 < p \leq 0.10$.** Significant at $0.01 < p \leq 0.05$.*** Significant at $p \leq 0.01$.

Test statistic below.

Table 8 Structural effect decomposition.

Effect origin	Effect on					
	Turnover			Bidask		
	Direct	Indirect	Total	Direct	Indirect	Total
Director's and supervisors' structures	–	–0.086	–0.086** (–2.203)	–	–0.140	–0.140** (–2.379)
Ownership structure	–0.481	–	–0.481*** (–5.621)	0.222	–	0.222** (2.429)
Org. performance	–0.255	–	–0.255*** (–3.092)	–	–	–
Voluntary disclosure	–	–	–	–0.249	–	–0.249** (–2.529)

*Significant at $0.05 < p \leq 0.10$.

** Significant at $0.01 < p \leq 0.05$.

*** Significant at $p \leq 0.01$.

Test statistic below.

performances are held by shareholders for a longer period than shares of companies that present worse performances. We follow the arguments of [Amihud and Mendelson \(1986\)](#). Stocks of firms with higher returns are allocated in equilibrium to portfolios with longer expected holding periods. In this sense, the observed asset return must be an increasing function of the expected holding periods, it also implies that the observed asset return must be a decreasing function of the turnover rate of that asset.

In relation to bid–ask spread, we found a positive statistically significant relation ($p < 0.05$) with ownership structure. This result suggests that bigger ownership concentration leads to the formation of inefficient prices in the market. In a concentrated ownership, which is the case of Portugal and Spain, the main shareholders may have access to private, value-relevant information about the firm. In this situation, investors mitigate losses to informed traders by charging wider spreads ([Helflin and Shaw, 2000](#)). On the contrary, the relation between voluntary disclosure and the bid–ask spread is negative and statistically significant ($p < 0.05$), following the result obtained by [Petersen and Plenborg \(2006\)](#). This result confirms that voluntary disclosure leads to more efficient prices and tends to reduce information asymmetries among informed and uninformed investors ([Diamond & Verrecchia, 1991](#); [Kim & Verrecchia, 1994](#)).

Through the structural equation model analysis we can also find indirect relations between the constructs included in the study. By the analysis of the final path graphic we can see that there are two indirect relations. One between directors' and supervisors' structures and turnover ratio, through organizational performance, and a second between directors' and supervisors' structures and bid–ask spread, through organizational performance and voluntary disclosure. In [Table 8](#) we show the standardized coefficients and the statistical significance of the direct and indirect effects on the information asymmetry proxies.

Related with the goodness of fit tests of the final model, we analyzed the values for CFI (0.953), RMSEA (0.050), NNFI (0.944) and IFI (0.954). The values observed for these indexes indicate that the model fits to the data.

6. Summary and concluding remarks

The results showed that the appointment of independent and non executive directors, the dimension of the board, the management incentives and expertise, and the formation of supervising structures are positively related to the provision of voluntary information and follow the literature that relate corporate governance characteristics to organizational performance ([Baysinger & Butler, 1985](#); [Dehaene et al., 2001](#); [Kanagaretnam et al., 2007](#)). The turnover ratio was negatively related with the ownership structure construct which suggests that a bigger ownership concentration lead to less stock transactions. The negative relation with organizational performance suggests that stocks of firms with higher returns are allocated in portfolios with longer expected holding periods ([Amihud & Mendelson, 1986](#)). The positive relation between bid–ask spread and the ownership structure construct suggests that bigger ownership concentration lead to the formation of inefficient prices in the market. On the other hand, the negative relation between the bid–ask spread and voluntary disclosure confirms that voluntary disclosure leads to more efficient prices and tends to reduce information asymmetry in the market ([Petersen & Plenborg, 2006](#)). The results follow the argument that for firms with high levels of disclosure the bid–ask spread is lower. However, in firms with a high ownership concentration investors tend to increase the bid–ask spreads and trade less, which, in this case, reduces the liquidity of the stock. These results are consistent with those obtained in previous research ([Bolton & Von Thadden, 1998](#); [Diamond & Verrecchia, 1991](#); [Helflin and Shaw, 2000](#); [Kim & Verrecchia, 1994](#)). In addition, the results from the structural equation model allowed us to understand how the governance rules exert influence on the proxies of information asymmetry in the market. We concluded that the ownership structure exerts a direct influence and that directors' and supervisors' structures exert an indirect influence, through the organizational performance and the voluntary disclosure of information. The failure to find the relationship between voluntary disclosure of information and the turnover ratio

shows us that the liquidity of shares is more related to the greater or lesser concentration of shareholders, with the performance of their companies than with the access to information. Moreover, it is clear that the role that information disclosure plays in these markets is mainly at the level of price formation.

This research and the results obtained have contributed to the perception of the practices of governance and disclosure adopted by Iberian Peninsula listed companies. The results of this study should be of interest of corporate reporting regulators to better understand the factors that explain voluntary disclosure, to assist them in the formulation of corporate reporting standards and recommendations, and in their actions aimed at improving transparency in publicly traded companies. Furthermore, the results of this study may also be useful to investors, company managers and other researchers interested in the information disclosed by companies to the market and their determining factors. Our results are consistent with the calls for more disclosure requirements in an agency setting and highlight the importance of corporate disclosures under concentrated ownership structures in order to reduce information asymmetry.

Our study has some limitations that suggest a need for future work. Although we analyzed the Iberian Peninsula listed companies, our sample is composed mostly of Spanish companies. Our voluntary disclosure index was based on the information provided by the firms in their annual reports and in public websites. As a result any disclosures those firms provided in analysts meetings, conference calls and in other circumstances are not included in the final result of our index. In this sense, and for future work, it would be interesting to explore the interactions among the several information sources, namely the relations between firm's voluntary disclosure, mandatory disclosure and the information produced by analysts.

List of items.

Category	Voluntary disclosure items
<i>Strategy</i>	
15 items	General presentation of the company's strategy Main corporate goals or objectives Main actions taken to achieve the corporate goals Definition of the deadline for each corporate goal Corporate position related to ethic/social questions Corporate position related to environment issues Detailed segment/unit performance Evaluation of the commercial risk Evaluation of the financial risk Evaluation of other risks Corporate I&D/Innovation policy Organizational Culture Main events of the current year Information about analysts Other important strategic information

Category	Voluntary disclosure items
<i>Market and competition</i>	
11 items	Identification of the principal markets Specific characteristics of these markets Dimension of the markets Identification of the main competitors Market shares Forecast of market growth Forecast of share market growth Impact of competition on profits Identification of markets' barriers to entry Impact of markets barriers to entry on future profits Impact of competition on future profits
<i>Management and production</i>	
11 items	Identification of the principal products/services Specific characteristics of these products/services Proposal for new products/services Changes in production/services methods Investment in production/services Norms of the quality of the product/service Rejection/defect rates (when applicable) Input/output rates (when applicable) Volume of materials consumed (when applicable) Change in product materials (when applicable) Life cycle of the product (when applicable)
<i>Future perspective</i>	
8 items	Result application proposal New action/initiative/event Forecasts of sales/results/cash flows Investment forecasts Return rates for each investment project Hypothesis considered in forecast Dividend policy Macroeconomic background
<i>Marketing</i>	
7 items	Disclosure of marketing strategy Disclosure of sales strategy Disclosure of distribution channels Disclosure of sales and marketing costs Disclosure of brand equity/visibility ratings Disclosure of the customer satisfaction level Disclosure of customer mix
<i>Human capital</i>	
8 items	Description of workforce Description of the remuneration/compensation system Qualification policy of workers Value created by worker Employee retention rates Productivity indicators Strategies to measure human capital Other measures of Human capital

References

- Admati, A., & Pfleiderer, P. (1988). A theory of intraday pattern: Volume and price variability. *Review of Financial Studies*, 1(1), 3–40.
- AICPA. (1994). *A Customer Focus Meeting the Information Needs of Investors and Creditors. Special Committee on Financial Reporting*. American Institute of Certified Public Accountants.
- Akerlof, G. (1970). The market for "lemons": Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84(3), 488–500.
- Allegri, M., & Greco, G. (2011). Corporate boards, audit committees and voluntary disclosure: Evidence from Italian listed companies. *Journal of Management and Governance*. Online FirstTM, <http://www.springerlink.com/content/32720028107w4746>. Accessed 24.02.11
- Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics*, 17, 223–249.
- Amihud, Y., & Mendelson, H. (1989). The effects of beta, bid-ask spread, residual risk and size on stock returns. *Journal of Finance*, 44(2), 479–486.
- Arcay, M., & Vázquez, M. (2005). Corporate characteristics, governance rules and the extent of voluntary disclosure in Spain. *Advances in Accounting*, 21, 299–331.
- Baysinger, B., & Butler, H. (1985). Corporate governance and the board of directors: Performance effects of changes in board composition. *Journal of Law, Economics and Organization*, 1, 650–657.
- Barry, B., & Brown, S. (1985). Differential information and security market equilibrium. *Journal of Financial and Quantitative Analysis*, 20(4), 407–422.
- Berle, A., & Means, G. (1933). *The modern corporation and private property*. New York: Macmillan.
- Bhattacharya, U., & Spiegel, M. (1991). Insiders, outsiders and markets breakdowns. *Review of Financial Studies*, 4(2), 255–282.
- Bolton, P., & Von Thadden, E. (1998). Blocks, liquidity and corporate control. *Journal of Finance*, 53(1), 1–25.
- Botosan, C. (1997). Disclosure level and the cost of equity capital. *Accounting Review*, 72(3), 323–349.
- Brennan, M., & Subrahmanyam, A. (1996). Market microstructure and asset pricing: On the compensation for illiquidity in stock returns. *Journal of Finance Economics*, 441–464.
- Bushee, B., & Noe, C. (2000). Corporate disclosure practices, institutional investors and stock return volatility. *Journal of Accounting Research*, 38, 71–202.
- Buskirk, A. (2012). Disclosure frequency and information asymmetry. *Review of Quantitative Finance and Accounting*, 38(Issue 4), 411–440.
- Cai, C., Keasey, K., & Short, H. (2006). Corporate governance and information efficiency in security markets. *European Financial Management*, 12(5), 763–787.
- Chau, G., & Gray, S. (2002). Ownership structure and corporate voluntary disclosure in Hong Kong and Singapore. *International Journal of Accounting*, 37(2), 247–265.
- Chung-Cheng Hsu, L. (2007). The influence of dimensions of corporate governance on firm values using applied structural equation model. *Journal of American Academy of Business, Cambridge*, 11(1), 204–213.
- CICA. (2008). *Corporate reporting to stakeholders. CICA research studies*. Toronto: Canadian Institute of Chartered Accountants.
- CMVM. (2008). *Relatório Anual sobre o Governo das Sociedades Cotadas em Portugal*. Comissão do Mercado de Valores Mobiliários. <http://www.cmvm.pt>
- CNMV. (2008). *Corporate Governance Report of Entities with Securities Admitted to Trading on Regulated Markets 2007*. Comisión Nacional del Mercado de Valores. <http://www.cnmv.es>
- Cooke, T. (1989). Voluntary corporate disclosure by Swedish companies. *Journal of International Financial Management and Accounting*, 1(2), 171–195.
- Dehaene, A., De Vuyst, V., & Ooghe, H. (2001). Corporate performance and board structure in Belgian companies. *Long Range Planning*, 34(3), 383–398.
- Depoers, F. (2000). A cost benefit study of voluntary disclosure: Some empirical evidence from French listed companies. *European Accounting Review*, 9(2), 245–263.
- Denis, K., & McConnell, J. (2003). International corporate governance. *Journal of Financial and Quantitative Analysis*, 3, 1–36.
- Diamond, D., & Verrecchia, R. (1991). Disclosure, liquidity and the cost of capital. *Journal of Finance*, 38(5), 1457–1469.
- Diamond, D. (1985). Optimal release of information by firms. *Journal of Finance*, 40(4), 1071–1094.
- Doyle, P. (2000). Value based marketing. *Journal of Strategic Marketing*, 8(4), 299–311.
- Eng, L., & Mark, Y. (2003). Corporate governance and voluntary disclosure. *Journal of accounting and Public Policy*, 22(4), 325–345.
- Eng, L., & Teo, H. (1999). The relation between annual report disclosures, analysts' earnings forecasts and analyst following: Evidence from Singapore. *Pacific Accounting Review*, 11(2), 219–239.
- Eng, L., Hong, K., & Ho, Y. (2001). The relation between financial statement disclosures and the cost of equity capital of Singapore firms. *Accounting Research Journal*, 14(1), 35–48.
- Esperança, J., Sousa, A., Soares, E., & Pereira, I. (2011). *Corporate Governance no espaço Lusófono. Alfragide: Texto Editores*.
- Fama, E., & Jensen, M. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26(2), 301–325.
- García Benau, M., & Monterrey Mayoral, J. (1993). La revelación voluntaria en las compañías Españolas cotizadas en bolsa. *Revista Española de Financiación y Contabilidad*, 74, 53–70.
- Golsten, L., & Milgrom, P. (1985). Bid, Ask and Transaction Prices in a Specialist Market with heterogeneously informed traders. *Journal of Financial Economics*, 13, 71–100.
- Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting: A review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing and Accountability Journal*, 8(2), 47–77.
- Healy, P., Hutton, A., & Palepu, K. (1999). Stock performance and intermediation changes surrounding sustained increases in disclosure. *Contemporary Accounting Research*, 16(3), 485–520.
- Healy, P., & Palepu, K. (2001). Information asymmetry, corporate disclosure and capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31, 405–440.
- Helflin, F., & Shaw, K. (2000). Blockholder ownership and market liquidity. *Journal of Financial and Quantitative Analysis*, 35(4), 621–633.
- Hinson, L., & Utke, S. (2015). *The associations among earnings quality, voluntary disclosure, information asymmetry, and cost of equity capital: A structural equation modeling approach*. Available at SSRN: <http://ssrn.com/abstract=2614085>
- Ho, S., & Wong, K. (2001). A study of the relationship between corporate governance structure and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation*, 10, 139–156.
- Jensen, M., & Meckling, W. (1976). Theory of the firm: Managerial behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360.
- Kanagaretnam, K., Lobo, G., & Whalen, D. (2007). Does good corporate governance reduce information asymmetry around quarterly earnings announcements? *Journal of Accounting and Public Policy*, 26(4), 497–522.

- Khelifi, F., & Bouri, A. (2010). Corporate disclosure and firm characteristics: A puzzling relationship. *Journal of Accounting, Business and Management*, 17(1), 62–89.
- Kim, O., & Verrecchia, R. (1994). Market liquidity and volume around earnings announcements. *Journal of Accounting and Economics*, 17(1), 41–68.
- Klein, A. (1998). Firm performance and board committee structure. *Journal of Law and Economics*, 41, 275–303.
- Lang, M., & Lundholm, R. (1993). Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research*, 31(2), 246–271.
- Laksmana, I. (2008). Corporate board governance and voluntary disclosure of executive compensation practices. *Contemporary Accounting Research*, 25(4), 1147–1182.
- Lee, C., Rosenstein, S., & Rangan, N. (1992). Board composition and shareholder wealth: The case of management buyouts. *Financial Management*, 21, 58–72.
- Leuz, C., & Verrecchia, R. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research*, 38, 91–124.
- Lev, B., & Penman, S. (1990). Voluntary forecast disclosure, nondisclosure, and stock prices. *Journal of Accounting Research*, 28(1), 49–76.
- Linsley, P., & Shrive, P. (2006). Risk reporting: A study of risk disclosures in annual reports of UK companies. *British Accounting Review*, 38(4), 387–404.
- Long, S. (1983). *Confirmatory factor analysis: A preface to Lisrel*. Newbury Park, CA: Sage Publications.
- McConnell, J., & Servaes, H. (1990). Additional evidence on equity ownership and corporate value. *Journal of Financial Economics*, 27(2), 595–612.
- McKinnon, J., & Dalimunthe, L. (1993). Voluntary disclosure of segment information by Australian diversified companies. *Accounting and Finance*, 33(1), 33–50.
- Meek, G., Roberts, C., & Gray, S. (1995). Factors influencing voluntary annual report disclosures by US and UK and continental European multinational corporations. *Journal of International Business Studies*, 26(3), 555–572.
- Meggison, W., Nash, R., & Randenborgh, M. (1994). The financial and operating performance of newly privatized firms: An international empirical analysis. *Journal of Finance*, 49(2), 403–452.
- Méndez, C., & García, R. (2007). The effects of ownership structure and board composition on the audit committee meeting frequency: Spanish evidence. *Corporate Governance: An International Review*, 15(5), 909–922.
- Merton, R. (1987). A simple model of capital market equilibrium with incomplete information. *Journal of Finance*, 42(3), 483–510.
- Mitchell, J., Chia, C., & Loh, A. (1995). Voluntary disclosure of segment information: Further Australian evidence. *Accounting and Finance*, 35(2), 1–16.
- Myers, S., & Majluf, M. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13(2), 187–221.
- O'Brien, R., & Reilly, T. (1995). Equality in constraints and metric-setting measurement models. *Structural Equation Modeling*, 2(1), 1–12.
- O'Sullivan, M., Percy, M., & Stewart, J. (2008). Australian evidence on corporate governance attributes and their association with forward-looking information in the annual report. *Journal of Management and Governance*, 12, 5–35.
- Patell, J. (1976). Corporate forecasts of earnings per share and stock price behavior: Empirical tests. *Journal of Accounting Research*, 14(Autumn), 246–276.
- Penman, S. (1980). An empirical investigation of the voluntary disclosure of corporate earnings forecast. *Journal of Accounting Research*, 18(1), 132–160.
- Petersen, C., & Plenborg, T. (2006). Voluntary disclosure and information asymmetry in Denmark. *Journal of International Accounting, Auditing and Taxation*, 15, 127–149.
- PwC. (1999). *Value Reporting – Forecasts 2000*. PricewaterhouseCoopers.
- Porter, M. (1996). What is strategy? *Harvard Business Review*, 74(6), 61–78.
- Raffournier, B. (1995). The determinants of voluntary financial disclosure by Swiss listed companies. *European Accounting Review*, 4(2), 261–280.
- Ranaldo, A. (2002). Transaction costs on Swiss stock. *Financial Markets and Portfolio Management*, 16, 53–63.
- Robb, S., Single, L., & Zarzeski, M. (2001). Nonfinancial disclosures across Anglo-American countries. *Journal of International Accounting, Auditing & Taxation*, 10(1), 71–83.
- Schadewitz, H., & Blevins, D. (1998). Major determinants of interim disclosures in an emerging market. *American Business Review*, 16(1), 41–55.
- Shleifer, A., & Vishny, R. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94(3), 461–488.
- Shleifer, A., & Vishny, R. (1997). A survey of corporate governance. *Journal of Finance*, 52, 737–783.
- Shroff, N., Sun, A., White, H., & Zhang, W. (2013). Voluntary disclosure and information asymmetry: Evidence from the 2005 securities offering reform. *Journal of Accounting Research*, 51, 1299–1345.
- Singhvi, S., & Desai, H. (1971). An empirical analysis of the quality of corporate financial disclosure. *Accounting Review*, 46(1), 621–632.
- Stoll, H. (1978). The pricing of security dealer services: An empirical study of NASDAQ stocks. *Journal of Finance*, 33, 1153–1172.
- Wang, K., Sewon, O., & Claiborne, M. (2008). Determinants and consequences of voluntary disclosure in an emerging market: Evidence from China. *Journal of International Accounting, Auditing and Taxation*, 17(1), 14–30.
- Welker, M. (1995). Disclosure policy, information asymmetry and liquidity in equity markets. *Contemporary Accounting Research*, 11(2), 801–827.
- Zingales, L. (1994). The value of the voting right: A study of the Milan stock exchange experience. *Review of Financial Studies*, 7(1), 125–148.