

# **THE IMPACT OF CORPORATE GOVERNANCE CHARACTERISTICS AND INDEPENDENT DIRECTORS ON VOLUNTARY DISCLOSURE**

**An Empirical study on companies listed in Egyptian Stock Exchange**

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## **Abstract**

The aim of this paper is to understand the main factors of voluntary disclosure for companies listed in Egyptian Stock Exchange, particularly, on the effects of corporate governance and board composition on the quantity of voluntary information disclosed. Based on a sample of 62 Egyptian listed firms, the author forms a voluntary disclosure index based on 76 items related to the information disclosed on corporate social responsibility, intangibles, financial information, non-financial information and future prospects. Consistent with previous evidence, independent directors significantly impact the quantity of voluntary information disclosed among Egyptian firms. However, in opposition to García y Gill de Albornoz (2007) evidence on the impact of the governance structure on earnings management practices across Spanish listed firms, grey directors do not seem to play a significant role in the amount of voluntary information disclosed. These results suggest a greater importance of grey directors on the quality of mandatory financial information, particularly on earnings quality, but not on voluntary disclosure. However, independent directors, representing the interests of the free floating capital, enhance the importance of reducing information asymmetries with alternatives ways of communication with stockholders, particularly, reporting information beyond the one required in the accounting regulation.

## **1. Introduction**

The purpose of this paper is to understand the impact of corporate governance characteristics and independent directors on voluntary disclosure across Egyptian listed companies, looking at the information disclosed on their annual reports.

Since the early 70s, empirical literature on voluntary disclosure has placed special care on those factors explaining why companies disclose information beyond the one required in the accounting regulation as well as the impact of this information on capitals markets (Ahmed and Curtis, 1999). Particularly, on the price-earnings relationship (Land and Lundhom, 1993, 1996), the cost of capital (Botosan, 1997; Botosan and Plumlee, 2002), the cost of the debt (Sengupta, 1998), and other variables related to the firms' information environment (Leuz and Verrecchia, 2000; Healy et al.,1999).

In spite of the positive effects of voluntary disclosure as a result of a better transparency and therefore, the reduction of information asymmetries between managers, board of directors and users of financial information, previous empirical literature discloses the impact of multiple factors on the quantity of information disclosed by listed companies. Corporate firm characteristics such as size, debt, listing status, industry sector and the presence in international markets have been recognized as the main determinants of voluntary disclosure.

In the last years, there has been an increasing number of empirical articles interested in looking at whether the firms' corporate governance structure has a significant impact on the quality of financial information. Since the early of 90s, when the first Corporate Governance Codes were developed in Europe, an increasing number of papers focused on understanding the impact of corporate governance codes and corporate governance structure on accounting quality. The relevance of accounting quality and corporate governance in reducing agency costs, has led several authors to look at the effect of good corporate governance practices as detailed in the Corporate Governance Codes, a significant mechanism to control for earnings management (Klein,2002; Peasnell et al. 2005; Peasnell et al., 2000 and Xie et al., 2000). Consistent with Jensen and Meckling (1976) and Fama and Jensen (1983) assumes on Agency Theory, evidence reveals the significant control role of the firms' corporate governance structure and the boards' independent directors on the reduction of information asymmetries

resulting from the agency relationship, allowing a better comprehensiveness of financial disclosure (Chen and Jaggi, 2000).

Together with the empirical research that looks at the impact of corporate governance characteristics on the quality of earnings, recent papers such as Cheng and Courtenay (2006), Lim et al (2007) Ajinkya et al. (2005) or Karamanou and Vafeas (2005) study the impact of the firm's corporate governance structure on an alternative aspect of the corporate financial information: on voluntarily disclosed information. The theoretical assumes of the agency theory regarding the relevance of the firm's corporate governance structure and the financial information as control mechanisms of the agency relationship, has been the main motivation of an extensive international empirical literature. As previously stated, results confirm the importance of the corporate governance structure on the quality of accounting information.

However, when looking at voluntary information, grey directors may not have such a significant impact. Grey directors representing majority shareholders may not be interested in enhancing voluntary disclosure but earnings quality. Majority shareholders have higher access to information, hence lower needs to additional corporate information. Conversely, minority shareholders represented by independent directors are the ones requiring and demanding higher levels of voluntary information. Based on previous literature this paper targets to test the impact of board's composition on the level of information that Egyptian listed companies voluntarily disclosed in their annual accounts.

Using a self-constructed voluntary disclosure index for a sample of 62 non-financial Egyptian listed firms, results from the empirical analysis disclose a significant positive impact of the proportion of independent directors on the Board over the level of voluntarily disclosed information on the annual report. Additionally, consistent with previous literature, evidence reveals that the attention of the chief executive director and the president's responsibilities on the same person significantly

reduces the level of voluntary information. However, consistent with expectations grey directors do not play a significant role on the level of information voluntarily disclosed among our sample firms. Conversely to García and Gill de Albornoz (2007) results for earnings management practices in Spain grey directors do not significantly affect the level of voluntary disclosure. Majority shareholders have higher control over the managers, higher access to financial information and they play a major role in the development of corporate governance' control mechanisms that reduce information asymmetry and protect minority shareholders (Gillan and Starks, 2003). Therefore, grey directors' requirements on the governance structure are centered on accounting and earnings quality while independent directors seem to be the key players on enhancing voluntary disclosure as an additional mechanism to reduce information asymmetries between managers and minority shareholders.

The remainder of this paper is organized as follows. Section 2 presents previous literature on corporate governance and voluntary disclosure. Section 3 describes data collection and sample selection procedure. Finally, sections 4 and 5 describe the research methodology and results of the empirical analysis. Section 6 conclusion

## **2. Voluntary disclosure literature and corporate governance**

According to Agency Theory, the separation of ownership and control makes information asymmetries due to the misalignment of managers and shareholders' interest. Information asymmetries may create a transfer of wealth from owners to managers, leading current and potential investors to discount share prices if there is not a proper financial disclosure. In order to control and reduce agency costs, control mechanisms must be considered to ensure that managers act in the interests of the owners (Jensen and Meckling, 1976). Voluntary disclosure and the structure of corporate governance are two of the documented mechanisms that significantly decrease the agency costs that result from the separation of ownership and control. As Patelli and Prencipe (2007) document, there is a wide empirical literature revealing the influence of these mechanisms on the agency relationship.

Focusing on voluntary disclosure empirical literature has mainly focused on the different factors that explain the level voluntary disclosure (Ahmed and Courtis, 1999). Size, profitability, leverage, international listing status, industry sector and the importance of the firm's auditing company are some of the main factors documented in the literature (Meek and Gray, 1989; Gray et al. 1993 Khanna et al., 2004). Empirical studies in the Spanish context (Giner, 1997; García and Monterrey, 1993; Wallace et al, 1994 and more recently Gómez Salas et al., 2006) document the importance of the size variable, as well as the presence of a big auditing company as then main factors of voluntary disclosure among Spanish firms. Therefore, the level of voluntary information disclosed, beyond the one mandatory required by accounting regulation, is the result of the managers' assessment of an symmetry between the costs and the benefits associated to voluntary disclosure, based on the corporate firms specific characteristics (Meek et to the, 1995; Lundholm and Winkle,2006).

However, even though firms' characteristics affect the level of voluntary disclosure, the goal is the need of transparency, in order to decrease the adverse effects generated by information asymmetry between the agent (managers) and the principal (shareholders). As previously stated, Jensen and Mecklin (1976) and Fama and Jensen (1983) highlight the importance of corporate governance as additional mechanism to solve the agency problems and to control for possible pervasive management practices. From the early nineties, the development of the Corporate Governance Codes led to an increasing number of papers looking at impact of the firms' corporate governance characteristic on accounting quality, particularly on earnings management practices. (Peasnell et al., 2005; Klein, 2002; Xie et to the, 2003). In the Spanish context García and Gill de Albornoz (2007) results for Spain reveal the important role of Grey directors as a control mechanism for earnings management practices.

Even though there is an increasing number of empirical studies looking at the impact of corporate governance characteristics on voluntary disclosure, results are contradictory (Cheng and Courtenay, 2006). Authors like Eng and Mak (2003) or Gul and Leung (2004) found a negative relationship between external<sup>1</sup> directors and the level of

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<sup>1</sup> The external directors' category includes grey and independent directors.

voluntary information, suggesting a higher control of the external directors on the board (Williamson, 1984) and consequently, a smaller need to reduce information asymmetries between shareholders and directors with higher voluntary disclosure. Particularly, Gul and Leung (2004) results disclose that independent directors with a wide professional expertise act as an important control mechanism in companies where the president and the chief executive officer responsibilities depend on the same person. As information asymmetry increases there is a greater need of disclosure in order to decrease the adverse effects of power concentration. However, the negative relationship documented in Gul and Leung (2004) or Eng and Mak (2003) must be analyzed carefully. As Cheng and Courtenay (2006) point out the definition of external directors<sup>2</sup> may affect their results.

Conversely to Gul and Leung (2004) or Eng and Mak (2003), other authors like Leung and Horwitz (2004), Cheng and Courtenay (2006) and more recently Lim et al (2007) reveal the important role of independent as a determinant factor of higher levels of voluntary disclosure.

However, together with the board's independent directors, executive directors may be also interested in improving voluntary disclosure to reinforce the confidence of stockholders on the firms' financial information and protect their professional reputation and their personal wealth, related to the firms' performance through remuneration contracts of stock options (Lim et al., 2006). However, Cheng and Courtenay (2006) results do not disclose a significant effect of executive directors on voluntary disclosure and Gul and Leung (2004) reveal a negative relationship when the chief executive officer and president's responsibilities depend on the same person.

Finally, previous empirical evidence focused on the impact of grey directors suggest that their control functions seem to be more focused on the quality of financial mandatory information than in increasing transparency through voluntary information. Recent articles such as Cheng and Courtenay (2006) do not show higher disclosure in those companies with grey directors' majority in their board of directors.

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<sup>2</sup> As Chen y Courtenay (2006, p. 265) explain, Eng y Mak (2003) non-executive director variable is based on the percentage of outside directors on the board and does not exclude grey directors. In addition, Gul y Leung (2004) focus their analysis on grey directors and their results may be affected by using a noisy proxy for measuring the "expertise" based on the presence on multiple boards, negatively associated with firm value (Mak, Sequeira and Yeo,2003).

Overall, previous evidence is reliable with a significant role of corporate governance characteristics on voluntarily disclosed information, particularly with the significant role of independent directors. Previous empirical evidence on the determinants of voluntary disclosure across Spanish firms (Giner, 1997; García and Monterrey, 1993; Wallace, et al. 1994, Gómez Salas, et al. 2006) has focused on the main cross-sectional determinants of voluntary disclosure but not in the role of corporate governance and particularly, on the role of independent directors as a control mechanism to decrease information asymmetries and therefore, as a potential explanatory factor of voluntary information disclosure. This study tries to point the importance of the corporate governance characteristics and the role of independent directors in information disclosure.

### **3. Sample selection and data collection**

The final sample consists of 62 Egyptian companies listed in the Egyptian Stock Exchange in 2015. The voluntary disclosure index has been created based on the hand-collected voluntary disclosure data from the fiscal year 2015 annual reports. Even though companies have alternative ways to report additional voluntary information (corporate web sites, press releases, intellectual capital reports, corporate social responsibility reports, meetings with the financial analysts, and management forecast announcements), previous empirical studies as Botosan (1997) or Lang and Lundholm (1993) assume a direct relation between annual report disclosure and alternative ways of corporate information. Overall, the annual report is one of the main sources of corporate information for listed companies and the main source of data collection in the used in the voluntary disclosure empirical literature.

With an initial sample of 124 non-financial companies listed in the Egyptian stock exchange, the paper excludes from the final sample companies with non-consolidated financial statements, non-available annual reports and firms with missing information on the corporate governance structure. Finally, the study excludes those companies with non-available data for the control variables. Table 1 shows final sample consists of 62 Egyptian listed companies.

### **INSERT TABLE 1**

The measure of voluntary disclosure is a self-constructed index created following the methodology used in previous empirical studies. Particularly, the voluntary disclosure

index (D\_INDEX) is based on a checklist of 76 identified information items related to the following seven areas of information: historical information, corporate social responsibility, intangible and intellectual capital, projected information, general information about the firm, non-financial statistics, management analysis and IAS/IFRS adoption. Appendix 1 reports the number of items included in each of the seven information areas, as well as a detailed list of the 76 items. The checklist has been created based on the previous empirical studies such as Cheng and Courtenay (2006) or Botosan (1997).

A dichotomous variable (1/0) has been used to identify the presence of each information item included in the voluntary disclosure index within the content of the firm's annual report. The dummy variable for each item on the checklist takes value 1 if the company discloses information related with that item in its annual report, otherwise the dummy variable takes value 0. Similar to previous studies, in order to avoid bias in index computation, all the checklist items have been considered to have the same relevance for the external users of information.

The voluntary disclosure index (D\_INDEX) is computed as the sum of all the dichotomous variable values for each company divided by the total number of items included in the information checklist (76). Corporate governance variables have been collected from the corporate governance reports that listed companies must include in Report of the Board of Directors.

#### 4. Methodology

For the empirical analysis the study estimates the following model:

$$D\_INDEX_{it} = \alpha + \sum_{j=1}^4 \beta_j BOARD_{jit} + \sum_{q=1}^5 \gamma_q VAR\_CONTROLS_{jit} \quad (1)$$

Where  $D\_INDEX_{it}$  is the value of the voluntary disclosure index for each company in the year 2015. BOARD corresponds to the vector of corporate governance variables including: board size (BOARD), proportion of independent directors in the board (%\_IND), concentration of the president and CEO' responsibilities in the same person (DUALITY), ownership concentration (CCap), measured with a dummy variable (1-0) that takes value one when the main shareholders own more than 40% of the firm. Ownership concentration is expected to be an important determinant of voluntary



disclosure. Greater ownership dispersion implies a higher agency cost (Jensen and Mecklin, 1976), thus, requires more information to improve transparency in order to decrease information asymmetries. However, conversely to this view, ownership concentration implies a lower proportion of free floating capital and therefore, lowers needs and pressures of majority shareholders to voluntarily disclose information.

VAR\_CONTROLS corresponds to the vector of control variables. Previous empirical literature documents that size, leverage, profitability and the growth potential of the company are some of the main cross-sectional determinants of voluntary disclosure. Size has been identified in numerous studies as the main determinant for voluntary disclosure. Authors like Meek et al (1995) or Hossain et al (1995) found that big companies are more likely to disclose information not only due to lower information production costs but also because of lower potential competitive disadvantages. Disclosing more information can also be the result of the pressure from external users. According to Hossain et al (1995), based on the agency theory literature, voluntary disclosure is necessary to reduce the information asymmetries and the costs associated to the agency relationship. Agency costs are higher for companies with higher outside capital (Jensen and Meckling, 1976). The proportion of outside capital tends to be higher for big firms (Leftwich et al., 1981). Therefore, the existent relationship between agency costs, capital structure and the firm's size makes this variable critical for the voluntary disclosure analysis.

However, disclosing information may significantly increase political costs of big companies (Watts and Zimmerman, 1986). Guo et al (2004), Bhojraj et al (2004) or Botosan and Stanford-Harris (2005) reveal how political costs can significantly affect the levels of information disclosed by the companies. Overall, in spite of the political costs that could be expected, most of the empirical studies confirm the importance of size on the level of information disclosure among companies. SIZE is measured as the logarithm of total assets (LASSET). Other authors have used as alternative variables total sales, market capitalization or the number of financial analysts following the firm.

Leverage is measured as the total debt to equity ratio. Highly leveraged firms bear more agency costs (Jensen and Mecklin, 1976), creating a need to disclose more information in order to improve the communication and transparency with their creditors (Meek et al. 1995). However, as Ahmed and Courtis (1999) explain, the empirical evidence relating to this hypothesis is inconclusive. However, Ahmed and Courtis (1999) results

from their meta-analysis technique reveal a positive association between leverage and level of disclosure.

The firm's profitability has been considered an additional explanatory factor of voluntary disclosure. However, as Ahmed and Courtis (1999) explain, empirical evidence provides conflicting results. Authors like Meek et al. (1995) or Raffournier (1995) reveal how higher profitable companies disclose more information based on the argument that profitable firms need to reveal their superior performance while other authors found a non-significant or negative relationship between disclosure and performance (Hossain et al., 1995; Cheng and Courtenay, 2006, Gul and Leung, 2004). A more detailed view of the relationship between performance and disclosure is offered by Land and Lundholm (1993) who suggest that the relationship between profitability and information disclosure is only positive for companies with bigger asymmetries between directors and investors. A similar argument applies for the market to book ratio (MB), representing the growth expectations of the firm. Authors as Gul and Leung (2004) or Lim et al (1997) argue that companies with a high growth potential need to disclose more information to the market in order to signal that the value of the stock is not "overvalued." On the other hand, these companies may be also more reluctant to disclose information that could be strategically used by competitors.

Empirical literature has looked at further control variables: (a) the use of stock options plans as a manager remuneration mechanism, (b) audit firm size, (c) the internationalization level of the firm, not only measured in commercial terms but also by the presence in international capital markets. However, none of these variables have been included at first place in the vector of control variables as they are not considered to be the most relevant determinants of voluntary disclosure among our sample firms.

Economic sector is an additional well documented explanatory factor of voluntary disclosure. As Meek et al. (1995) points out "*the relevance of selected items disclosure can vary across industries*". For example, in the medical or technological industry, information about R&D can be considered an item of significant relevance. As Giner (1997) declares companies acting in the same economic sector will have a common informative tendency, that is, they will adopt common disclosure practices and topics. A common disclosure tendency across economic sectors requires to control for the disclosure differences among industrial sectors either incorporating control variables or a simple descriptive analysis of the levels of voluntary information across industries.

Our sample is broadly varied economic sectors, with no concentration of companies in any particular sector. Therefore, the study has not included any control variable related to the economic sector in the econometric analysis identifying sectors. Alternatively, following Giner (1997) recommendations the study carried out a descriptive analysis of the disclosure indexed across industry sectors.

In order to avoid endogeneity problems that could affect the results in the empirical analysis, study follow an econometric approach similar to Gul and Leung (2004), Lim et al. (2007) or Cheng and Courtenay (2006). As Lim et al. (2007) and other authors explain, the endogeneity problem arises as a consequence of the existent relationship between corporate governance characteristics and other control variables included in the model, creating a bias in the minimum least square regression coefficients. To avoid this econometric problem, the empirical analysis has been carried out through a two stage least square regression, estimating the main corporate governance variable (% \_IND) in the first step and applying its estimated value (% \_IND\_Est) on the second stage regression (model 1).

The following model has been used for the estimation of the proportion of independent directors (% \_IND):

$$\%\_IND_{it} = \alpha + \beta_1 BOARD_{it} + \beta_2 CAP_{it} + \beta_3 LASSET_{it} + \beta_4 LEV_{it} + \beta_5 ROA_{it} + \beta_6 MB_{it} + \varepsilon_{it} \quad (2)$$

Where: BOARD is the size of board of directors; CAP represents the stake of the firm's capital owned by the main stockholders. LASSET represents the size of each company measured as the logarithm of total assets. LEV is the leverage ratio measured as total debt over total equity. ROA is the economic profitability of the company, and finally, the market-to-book ratio (MB) measures the potential of growth of the company.

Based on the theoretical hypothesizes and previous studies, the study expect a positive and significant relationship between the dependent variable (%\_IND) and all the explanatory variables except for CAP and BOARD. Higher ownership concentration implies the presence of a higher proportion of grey and executives directors in the board. Additionally, the definition of the dependent variable as the proportion of independent directors on the total board implies a negative relationship with the BOARD variable. Regarding the LASSET, LEV, ROA and MB

variables the expected relationship with % \_IND is positive. Big companies have a higher ownership dispersion (Leftwich et al. 1981), making necessary to recruit a higher number of independent directors. Similarly, high profitable companies or firms with high growth expectations tend to be more attractive to independent directors (Lim et al, 1997). Finally, agency costs associated to the relationship between the firms and its creditors makes necessary an increasing presence of independent directors to encourage transparency and strengthen creditors' confidence to avoid an increase of the costs of debt.

## **5. Results**

Table 2 shows descriptive statistics for the voluntary disclosure variables (indexes), corporate governance and control variables for the 62 companies of our final sample.

### **INSERT TABLE 2**

The mean voluntary disclosure index is 0.25, revealing that sample companies disclose about 25% of the 76 items comprising the general index. This value is higher than the ones reported in similar works for other countries. Lim et al. (2007) for Australian companies or Cheng and Courtenay (2006) for Hong Kong presented an average index of 0.18 and 0.14, respectively.

The corporate social responsibility index (I\_RSC), the non-financial statistics index (I\_ENF) and the IAS/IFRS adoption index (I\_NIC) are on average, above the general voluntary disclosure index value. Conversely, projected information index (I\_IPR), background information index (I\_IGE) are on average below the general voluntary disclosure index value.

The board of directors in our sample (panel B) has a mean size 12 members, ranging from a minimum of 5 to a maximum of 20 members. The board is composed by a majority of grey directors (42%), followed by independent (35%) and executives (20%). In addition, 71% of the companies from our sample concentrate the President and the CEO responsibilities on the same person. The average capital in owned by majority shareholder, that is, those holding over 5% of the company's total shares, amounts 43%, with a maximum percentage of concentration of 97%. The level of concentration of the capital in hands of certain groups is constant with the higher presence of grey directors in the structure of the board of directors. 40,3% of the companies (25 companies) have a majority of grey directors, 25,8% of total companies (16 companies) have a board

with majority of independent directors. Executive directors are minority and two companies of our sample have a majority representation of executives in the Board.

Panel C reports the descriptive statistics for the control variables and other related variables as market capitalization. These variables shape the main characteristics of the companies of the sample. Results reveal a wide diversity across de sample firms.

**Table 3** reports a descriptive analysis by industry sector. Panel A refers to the voluntary disclosure variables, while Panel B refers to corporate governance variables. As it has been previously stated, the sample is broadly diversified in 21 industry sectors. The industry sector with a higher number of companies is beverages and tobacco.

The electricity and communications sectors are the ones leading the voluntary disclosure positions, with a value of 0.36 and 0.37 for the general index (D\_INDEX), considerably higher compared to the reported average for the total sample (0.25). These sectors present higher results in most of the informative categories but especially in corporate social responsibility (I\_RSC), non-financial statistics (I\_ENF), background information (I\_IGE) and intellectual capital (I\_CI). The transport sector shows the lowest results, with a global information index of only 0.12. However, in spite of this low result this sector it is worth to note the high value of the projected information index (I\_IPR = 0,13) and the management analysis index (I\_AD = 0,30). Finally, the high results obtained in the NIC/NIIF adoption voluntary disclosure index (I\_NIC).

### **INSERT TABLE 3**

Focusing on the characteristics of the structure of the board of directors, most industry sectors have an average board size of more than 10 directors. Independent directors are only majority in 7 of the 21 sectors, while grey directors occupy most of the positions in the Board in twelve sectors. Executive directors are not majority in any particular sector although as reported in table 2, they are majority in two companies of the sample.

**Table 4** reports a descriptive analysis of the voluntary disclosure differences according to the corporate governance and firm specific characteristics. In this analysis, the 62 companies of the sample have been divided in two groups, based on the discriminant variable average value. For example, if the study considers the percentage of independent directors (%\_IND) as the first discriminant variable, sample firms have been divided in two groups. The first group comprises companies with a proportion of independent

directors above the average reported value in table 2 (0,35). The second group comprises companies with a proportion of independent directors under the average reported value in table 2. Results for the nine voluntary disclosure indexes show a higher voluntary disclosure index value for the group of companies with a higher proportion of independent directors. However, differences are only statistically significant at 10% for D\_INDEX, I\_RSC and I\_ENF indexes. However, these results partially confirm the role of independent directors as an important control mechanism to improve the information transparency of the company.

**INSERT TABLE 4**

While independent directors improve the level of voluntary disclosure, the presence of a high proportion of executive directors on the board seems to have the opposite effect. Companies with a proportion of executive directors above the average reported value in table 2 (0,20) have a lower value in six of the nine voluntary disclosure indexes. However, these differences are only statistically significant at 10% for the I\_CI and I\_ENF indexes. These results are not consistent with Lim et al (2007) who argue that executive directors may be interested in improving voluntary disclosure to protect their professional reputation and their personal wealth, linked to the firm performance through the use of stock options as remuneration scheme.

Finally, results for the role of grey directors on voluntary disclosure do not reveal a clear tendency. Results are not statistically significant in any of the voluntary disclosure indexes. However, companies with a proportion of grey directors above the average reported value in table 2 (0,42) have a higher value in six of the nine voluntary disclosure indexes.

Size is one of the main determinants of voluntary disclosures. Companies reporting total assets above the average reported value in table 2, significantly disclose more information in almost all areas. Similar results are reported for board size. Companies with board size with more members than the average size reported in table 2, have higher values in seven of the nine voluntary information indexes. The only exception appears in the historical information index, where companies with smaller board size significantly disclose more historical information.

Finally, results for capital concentration as discriminating variable are consistent with the idea that more ownership concentration implies higher managerial control, reducing the need to disclose more information in order to avoid information asymmetries with the free floating capital. Results reveal a lower value in the eight sub-indexes for companies with higher capital concentration than the sample average. Nevertheless, differences are only statistically significant for the general voluntary disclosure index (D\_INDEX) and for the projected information voluntary disclosure index (I\_IPR).

One of the main cautions of designing a voluntary disclosure index is that it implies certain degree of subjectivity. Therefore, it is necessary to measure the validity of the index in capturing disclosure levels (Botosan, 1997; Cheng and Courtenay, 2006). One of the basic validity analyses of the index internal consistency is a correlation analysis of each one of the index components. As Cheng and Courtenay (2006) explain, “*disclosure strategies for a firm are expected to be similar along all avenues*”, that is, a firm with high levels of voluntary information as reported in the general voluntary disclosure index is expected to have a high disclosure levels in most of the information areas. The correlation analysis of the D\_INDEX and the control variables allows corroborating the results from the descriptive analysis.

**Table 5** reports the results of the correlation analysis. Panel A shows the parametric and non-parametric correlation coefficients of the general voluntary disclosure index (D\_INDEX) with each of the eight sub-indexes of information. Panel B shows the correlation coefficients of D\_INDEX and the control variables.

According to the results in Panel A, the general index is highly correlated with most of the other indexes of information, except with the historical information (I\_H) and the management analysis (I\_AD) voluntary disclosures indexes where the Spearman and Pearson correlation coefficients are not significant. Each one of the sub-indexes is highly correlated to the rest and most of the correlation coefficients are significant.

#### **INSERT TABLE 5**

The correlation coefficients of the general index of information (D\_INDEX) with the control variables show a statistically significant correlation with LASSET, BOARD,

DUALITY and % \_IND. These results are reliable with the results in table 4, as well as with the empirical previous literature. The correlation coefficient of D\_INDEX with company size (LASSET) and with Board size (BOARD) is positive in both cases, indicating that big companies and those with more members in their boards tend to disclose more information. The DUALITY variable representing the concentration of the president and CEO's responsibilities on the same person has a negative correlation with the general voluntary disclosure index D\_INDEX. Finally, the correlation of the percentage of independent directors (% \_IND) with D\_INDEX is only statistically significant for the Pearson correlation coefficient, although in both cases the coefficient is positive and indicates that a higher proportion of independent directors increase voluntary disclosure.

Consistent with previous literature, the variable % \_IND is negatively correlated with % \_DOM and CAP. These variables have a negative and statistically significant correlation coefficient with the variable % \_IND, indicating that firms with higher capital concentration and higher presence of grey directors in the Board have a lower proportion of independent directors.

**Table 6** shows the summary statistics of the first stage regression results between the proportion of independent directors (% \_IND) and a number of explanatory variables detailed in model 2. All the expected coefficients are statistically significant except the profitability variable (ROA). The size (LASSET), leverage (LEV) and the MB ratio variables are positively related to the proportion of independent directors in the Board. Contrariwise, higher capital concentration (CAP) and the size of Board (BOARD) have a negative impact on the dependent variable. The adjusted  $R^2$  coefficient reaches a slightly higher value of 0.2465 compared to the ones reported in other studies like Lim et al (2007).

#### **INSERT TABLE 6**

The second stage regression includes the estimated dependent variable (% \_IND\_est) as one of the explanatory variables of the model.



$$D\_INDEX_{it} / RD\_INDEX_{it} = \alpha + \beta_1 BOARD_{it} + \beta_2 \%\_IND\_est + \beta_3 DUALITY_{it} + \beta_4 CCAP_{it} + \beta_5 LASSET_{it} + \beta_6 LEV_{it} + \beta_7 ROA_{it} + \beta_8 MB_{it} + \varepsilon_{it} \quad (3)$$

In order to test for the consistency of paper's results, it has used an alternative dependent variable RD\_INDEX. This variable represents the transformation of the D\_INDEX variable in deciles. That is, the 62 firm-year observations have been classified in 10 groups according to the value of the general voluntary disclosure index (D\_INDEX). The RD\_INDEX variable takes values between 1 and 10, being 10 the value representing the highest disclosure level of voluntary information.

Panel A reports the results of the regression analysis using D\_INDEX as a dependent variable. Panel B reports the results of the regression analysis using RD\_INDEX as a dependent variable. Table 7 shows the results for four different regression models based on equation 3.

Results reported in table 7 are consistent with the expectations and confirm that a higher proportion of independent directors' increases transparency through voluntary information disclosure beyond the one required in the accounting regulation. Regression coefficients for the main explanatory variable % \_IND\_est are positive in all the cases and statistically significant in seven out of the eight models used in the regression analysis.

#### **INSERT TABLE 7**

Coefficients for the DUALITY and BOARD variables are statistically significant in most of the models used in the regression analysis. DUALITY has a negative and significant coefficient in all cases, indicating that the concentration of the president and CEO' responsibilities reduce the level of voluntary information disclosed by companies. Results for the BOARD variable are constant with previous empirical studies revealing that companies with bigger board of directors disclose more voluntary information. CCap does not have a significant impact on our dependent variable. The regression coefficients are not significant in none of the four models where this variable is included.

Coefficients on the four control variables (LASSET, LEV, ROA and MB) are not significant in most cases. The only exception is for the MB variable where the results suggest that companies with higher growth potential avoid disclosing voluntary disclosure in order to preserve strategic data from competitors.

In summary, results from the empirical analysis reveal the important role of independent directors as a control mechanism of the agency relationship. Additional non reported results for the preliminary regression analysis of the role of grey directors on the disclosure of voluntary information are constant with the descriptive analysis. That is, grey directors do not seem to have a significant impact on the dependent variable D\_INDEX. In spite of their major presence in the boards of Egyptian firms, grey directors do not seem to have a decisive role on reducing information asymmetries through voluntary information disclosure.

## **6. Conclusions**

Since the early 70s, empirical literature on voluntary disclosure has placed special care on those factors explaining why companies disclose information beyond the one required in the accounting regulation as well as the impact of this information on capitals markets. Size, leverage, listing status, industry sector, type of auditor or the presence in international markets have been identified as the main determinants of voluntary disclosure. More recently, due to the development of corporate governance codes along the nineties, an increasing number of papers have focused on understanding the role of corporate governance characteristics on accounting quality and more specifically, on voluntary disclosure.

Results from empirical analysis carried out for a sample of 62 Egyptian listed companies, confirms the role of independent directors as a control mechanism of the agency relationship between managers and shareholders, increasing the level of voluntary information disclosed in the annual report. Contrariwise, the concentration of the president and CEO' responsibilities in the person decreases the level of voluntary information. Although previous evidence for Spain reveals the significant role of grey directors as a control mechanism of pervasive earnings management practices (García and Gill de Albornoz, 2007) results from the empirical analysis do not reveal a decisive role of grey directors on the amount of voluntary disclosed information. Their presence in the board and particularly, their role as a management control mechanism seem to make unnecessary the use of alternative ways of information.

Voluntary disclosed information is measured using a self-constructed index with 76 items classified in eight categories: historical information, corporate social responsibility, intangible and intellectual capital, projected information, general

information about the firm, non-financial statistics, management analysis and **IAS/IFRS** adoption. Results are consistent with previous studies carried out in different contexts, revealing the significant role of independent directors to reduce information asymmetry, reporting more information than the one required by accounting regulation.

## References

Ahmed, K. and Courtis, J. (1999): "Associations between corporate characteristics and disclosure levels in annual reports: a meta-analysis". *British Accounting Review*.31:35

Ajinkya, B., Bhojraj, S. and Sengupta, P.(2005): "The association between outside directors, institutional investors and the properties of management earnings forecasts", *Journal of Accounting Research* 43 (3): 343-375.

Bhojraj, S. Blacconiere, W.G. and D'Souza, J.D. (2004): "Voluntary disclosure in a multi-audience setting: an empirical investigation", *The Accounting Review*, 79 (Octubre): 921-947.

Botosan, C.A. (1997): "Disclosure level and the cost of equity capital". *The Accounting Review*, 72 (3): 323-349.

Botosan, C.A. and Stanford-Harris, M. (2005): "Managers motives to withhold segment disclosures and the effect of SFAS No 131 on Analysts' information environment". *Accounting Review*, 80: 751-771.

Cheng, C. M. E. and S. M. Courtenay (2006): "Board composition, regulatory regime and voluntary disclosure" *The International Journal of Accounting*, 41: 262-289.

Fama, E. and Jensen, M. (1983): "Separation of ownership and control", *Journal of Law and Economics*, 26 (2): 301-325.

García, M. A. and Monterrey, J. (1993): "La revelación voluntaria en las compañías españolas cotizadas en bolsa". *Revista Española de Financiación y Contabilidad*, 74: 53-70.

García Osma, B. and Gill de Albornoz, B. (2007): "The Effect of the Board Composition and its Monitoring Committees on Earnings Management: evidence from Spain". *Corporate Governance*, forthcoming.

- García Osma, B. and Gill de Albornoz, B. (2004): "El gobierno corporativo en las empresas españolas cotizadas". *Revista Valenciana de Economía y Hacienda*, 10:127-157.
- Gillan, S. and Starks, L. (2003): "Corporate governance, corporate ownership and the role of institutional investors: a global perspective". *Journal of Applied Finance*, 13 (2): 4-22.
- Giner, B. (1997): "The influence of company characteristics and accounting regulation on information disclosed by Spanish firms". *European Accounting Review*. 6 (1): 45-68.
- Gómez Sala, J.C., Iñiguez Sánchez, R. and Poveda Fuentes, F. (2006): "Revelación voluntaria de información y características de las sociedades cotizadas en el mercado de capitales español". *Revista Española de Financiación y Contabilidad*, 131: 8-26
- Gul, F. and Leung, S. (2004): "Board leadership, outside directors' expertise and voluntary corporate disclosures", *Journal of Accounting and Public Policy*, 23: 351-379.
- Guo, R., Lev, B. and Zhou, N. (2004): "Competitive costs of disclosure by Biotech IPO's", *Journal of Accounting Research*, 42 (mayo): 319-355.
- Hossain, M., Perera, M., Rahman, A. (1995): "Voluntary disclosure in the Annual Reports of New Zealand companies". *Journal of International Financial Management and Accounting*. 6(1): 69-87
- Jensen, M. and Meckling, W. H. (1976): "Theory of the firm: managerial behaviour, agency costs and ownership structure", *Journal of Financial Economics*, 3 (4): 305-360.
- Karamanou, I. and Vafeas, N. (2005): "The association between corporate boards, audit committees and management earnings forecasts: an empirical analysis", *Journal of Accounting Research*, 43 (3): 453-486.
- Klein, A. (2002): "Audit committee, board of director characteristics, and earnings management", *Journal of Accounting and Economics*, 33 (3): 375-400.
- Lang, M. and Lundholm, R. (1996): "Corporate disclosure policy and analyst behaviour", *Accounting Review*, 71 (3): 467-492.
- Lang, M. and Lundholm, R. (1993): "Cross-sectional determinants of analysts ratings of corporate disclosure", *Journal of Accounting Research*, 31 (3): 246-271.

- Leung, S. and Howwitz, B. (2004): "Director Ownership and voluntary segment disclosure: Hong Kong evidence". *Journal of International Financial Management and Accounting*, 15: 253-260.
- Lim, S., Matolcsy, Z. and Chow, D. (2007): "The association between board composition and different types of voluntary disclosure". *European Accounting Review*, 16 (3): 555-583.
- Lundholm, R. and Winkle, M. (2006): "Motives for disclosure and non-disclosure: a framework and review of the evidence". *Accounting and Business Research*, International Accounting Policy Forum, 43-48.
- Mak, Y.T., Sequeira, J.M. and Yeo, M.C. (2003): "Stock market reactions to board appointments". Working Paper, National University of Singapore.
- Meek, G, Roberts, C. and Gray, S. (1995): "Factors influencing voluntary annual report disclosures by US, UK, and Continental European multinational corporations", *Journal of International Business Studies*, Third Quarter, 555-572.
- Patelli, L. and Prencipe, A. (2007): "The relationship between voluntary disclosure and independent directors in the presence of a dominant shareholder". *European Accounting Review*. 16(1): 5-33.
- Peasnell, K. V., Pope, P. F. and Young, S. (2000): "Accrual management to meet earnings targets: UK evidence pre- and post-Cadbury", *The British Accounting Review*, 32 (4): 415-455.
- Peasnell, K. V., Pope, P. F. and Young, S. (2005): "Board monitoring and earnings management: do outside directors influence abnormal accruals?" *Journal of Business, Finance and Accounting*, 32 (7-8): 311-1346.
- Raffournier, B. (1995): "The determinants of voluntary financial disclosures by Swiss listed companies". *The European Accounting Review*, 4 (2): 261-280.
- Spencer Stuart, (2005): "Indice Spencer Stuart de Consejos de Administración".
- Xie, B., Davidson, I., Wallace, N. and DaDalt, P. (2003): "Earnings management and corporate governance: the role of the board and the audit committee". *Journal of Corporate Finance*, 9 (3): 295-316.

Wallace, R.S., Naser, K. and Mora, A. (1994): “The relationship between the comprehensiveness of corporate annual reports and firm characteristics in Spain”. *Accounting and Business Research*, 25: 41-53.

Williamson, O.E. (1984). Corporate governance. *Yale Law Journal*, 93.

**Table 1: Sample selection procedure and list of firms comprising the sample**

Panel A: Sample selection procedure

	n°
Non-financial firms listed in the Egyptian Stock Exchange in 2015	124
Not required to report consolidated financial statements	12
Reporting period different from 31st December 2015	5
Missing observations for corporate governance variables	9
Missing observations for control variables	36
Final sample	62

**Table 2: Descriptive statistics on key variables of the empirical analysis for 2015**

Panel A. Descriptive statistics on voluntary disclosure indexes

Variables	n	mean	median	std.dev	max	min
D_Index	62	0,2501	0,253	0,0866	0,480	0,067
I_H	62	0,2726	0,200	0,1757	0,800	0
I_RSC	62	0,3306	0,375	0,3320	1,000	0
I_CI	62	0,2247	0,214	0,1754	0,571	0
I_IPR	62	0,0355	0,000	0,0624	0,267	0
I_IGE	62	0,0327	0,294	0,1501	0,706	0
I_ENF	62	0,3364	0,286	0,1937	0,857	0
I_AD	62	0,1419	0,100	0,1751	0,600	0
I_NIC	62	0,8011	1,000	0,3694	1,000	0

Panel B. Descriptive statistics on corporate governance variables

Variables	n	mean	median	std.dev.	max	min	n° (%)
Board size	62	11,95	11	4,01	20	5	
N° executive directors	62	2,24	2	1,13	5	0	
N° grey directors	62	5,40	5	3,96	19	0	
N° independent directors	62	3,97	4	2,47	13	0	
% executive directors	62	0,20	0,19	0,12	0,63	0	
% grey directors	62	0,42	0,44	0,24	1	0	
% independent directors	62	0,35	0,33	0,19	0,82	0	
Part_sig	62	43,29	44,88	26,97	97,29	0	
Majority independent directors							16 (25,80%)
Majority grey directors							25 (40,3%)
Majority executive directors							2 (0,09)
Majority external directors							60 (96,7%)
President/CEO (yes/no)							44 (70,97%)

Panel C. Descriptive statistics on control variables

<b>Variables</b>	<b>n</b>	<b>mean</b>	<b>median</b>	<b>std.dev.</b>	<b>max</b>	<b>min</b>
Total assets	62	6.327.031	1.304.084	10.694.174	64.789.100	60.170
Market capitalizaton	62	4.239.967	1.547.609	8.948.129	60.810.783	37.573
Shareholders equity	62	1.436.375	393.310	2.874.395	15.262.000	29.560
Leverage (LEV)	62	1,403	0,884	1,551	7,585	0,0012
Market-to-book (MB)	62	3,340	2,30	2,815	14,876	0,835
Return on Assets (ROA)	62	0,056	0,047	0,052	0,33	-0,001
Number of analysts	54	9,79	8,77	6,92	31,25	1

**Table 3: Descriptive statistics by industry sector on voluntary disclosure indexes and key corporate governance variables**

Panel A: Voluntary disclosure indexes

<b>CNMV industry sector</b>	<b>n</b>	<b>D_Index</b>	<b>I_H</b>	<b>I_RSC</b>	<b>I_CI</b>	<b>I_IPR</b>	<b>I_IGE</b>	<b>I_ENF</b>	<b>I_AD</b>	<b>I_NIC</b>
Commerce and other services	5	0,23	0,20	0	0,10	0	0,33	0,40	0,24	0,73
Construction	4	0,31	0,40	0	0	0	0,38	0,32	0,05	0,75
Energy – water and gas	3	0,29	0,17	0,50	0,26	0,04	0,41	0,43	0	1
Energy - electricity	3	0,36	0,33	0,50	0,38	0,07	0,53	0,57	0,07	0,67
Energy - mining	1	0,20	0,50	0,00	0,00	0,07	0,24	0,29	0,0	1,00
Energy - petrol	2	0,25	0,50	0,50	0,14	0,00	0,26	0,29	0,20	0,83
Real state	4	0,23	0,43	0,38	0,16	0	0,29	0,32	0,05	0,42
Construction materials	2	0,27	0,30	0,25	0,18	0,1	0,44	0,29	0,00	1,00
Media and communication	3	0,24	0,07	0,50	0,14	0,00	0,39	0,43	0,13	0,89
Metal	3	0,24	0,40	0,17	0,17	0	0,27	0,24	0,27	1,00
Technology	4	0,28	0,20	0,50	0,29	0	0,37	0,43	0,15	1,00
Other transformation industries – beverages and tobacco	8	0,20	0,24	0	0,21	0,02	0,24	0,25	0,13	0,88
Other transformation industries - others	6	0,26	0,28	0,25	0,25	0,06	0,30	0,31	0,27	0,89
Other transformation industries - paper	4	0,25	0,33	0	0	0,00	0,32	0,36	0,10	0,75
Quemical	1	0,21	0,20	0,25	0,29	0,07	0,41	0,14	0,00	0,00
Metal transformation	4	0,23	0,33	0,13	0,30	0,03	0,29	0,18	0,10	0,75
Transport and communication - communication	1	0,37	0,00	1	1	0,07	0,47	0,57	0,20	1,00
Transport and communication – service concession	2	0,27	0,10	0	0	0,00	0,47	0,43	0,10	0,83
Transport and communication –transports	2	0,12	0,10	0	0	0,13	0,00	0,29	0,30	0,50



Panel B: Corporate Governance variables

<b>CNMV industry sector</b>	<b>n</b>	<b>%Ind</b>	<b>%Eje</b>	<b>%Dom</b>	<b>%Capital</b>	<b>Board size</b>
Commerce and other services	5	0,45	0,26	0,29	51,63	9,60
Construction	4	0,30	0,24	0,46	43,45	14,25
Energy – water and gas	3	0,33	0,10	0,47	41,86	15,67
Energy - electricity	3	0,49	0,12	0,33	27,33	16,67
Energy - mining	1	0,60	0,00	0,00	63,45	5,00
Energy - petrol		0,37	0,12	0,50	68,73	16,50
Real state	4	0,22	0,29	0,45	49,80	13,25
Construction materials	2	0,30	0,24	0,43	33,93	13,00
Media and communication	3	0,26	0,13	0,61	66,80	14,33
Metal	3	0,07	0,22	0,69	48,84	12,33
Technology	4	0,53	0,26	0,24	53,38	9,75
Other transformation industries – beverages and tobacco	8	0,43	0,22	0,30	28,87	10,88
Other transformation industries - others	6	0,28	0,24	0,42	39,41	8,33
Other transformation industries - paper	4	0,29	0,20	0,51	31,75	10,25
Quemical	1	0,67	0,17	0,17	0,00	6,00
Metal transformation	4	0,33	0,17	0,50	35,01	10,50
Transport and communication - communication	1	0,47	0,29	0,24	11,72	17,00
Transport and communication – service concession	2	0,27	0,14	0,59	59,67	14,00
Transport and communication –transports	2	0,17	0,11	0,73	68,22	16,00

**Table 4: T-test of differences in means on key voluntary disclosure variables, based on corporate governance characteristics.**

	% independent directors (%_IND)			% grey directors (%_DOM)			% executive directors (%_EJE)		
	< mean	> mean	t-stat	< mean	> mean	t-stat	< mean	> mean	t-stat
D_Index	0,2375	0,2700	-1,40*	0,2458	0,2542	-0,38	0,2593	0,2374	0,95
I_H	0,2632	0,2875	-0,52	0,2900	0,2563	0,75	0,2722	0,2731	-0,02
I_RSC	0,2829	0,4063	-1,35*	0,3083	0,3516	-0,51	0,3472	0,3077	0,44
I_CI	0,2237	0,2262	-0,05	0,2024	0,2455	-0,97	0,2500	0,1896	1,32*
I_IPR	0,0316	0,0417	-0,63	0,0289	0,0417	-0,81	0,0370	0,0333	0,23
I_IGE	0,3127	0,3505	-0,96	0,3412	0,3143	0,70	0,3333	0,3190	0,36
I_ENF	0,3083	0,3810	-1,35*	0,3048	0,3661	-1,25	0,3690	0,2912	1,56*
I_AD	0,1211	0,1750	-1,17	0,1533	0,1313	0,49	0,1278	0,1615	-0,72
I_NIC	0,7895	0,8194	-0,31	0,7778	0,8229	-0,48	0,7963	0,8077	-0,12

	Total assets			Board size (BOARD)			Ownership concentration (CCap)		
	< mean	> mean	t-stat	< mean	> mean	t-stat	< mean	> mean	t-stat
D_Index	0,2333	0,3076	-2,58###	0,2308	0,2707	-1,83#	0,2676	0,2338	1,54*
I_H	0,2646	0,3000	-0,56	0,3094	0,2333	1,74#	0,2600	0,2844	-0,54
I_RSC	0,2656	0,5536	-3,03###	0,2422	0,4250	-2,23###	0,3583	0,3047	0,63
I_CI	0,2024	0,3010	-1,75#	0,2121	0,2381	-0,58	0,2524	0,1987	1,21
I_IPR	0,0292	0,0571	-1,49	0,0250	0,0467	-1,38*	0,0533	0,0188	2,25##
I_IGE	0,3051	0,4034	-2,11###	0,3033	0,3529	-1,30*	0,3490	0,3070	1,09
I_ENF	0,3095	0,4286	-1,98#	0,2634	0,4143	-3,31###	0,3381	0,3348	0,07
I_AD	0,1542	0,1000	1,12	0,1438	0,1400	0,08	0,1667	0,1188	1,07
I_NIC	0,7986	0,8095	-0,10	0,7292	0,8778	-1,60*	0,8556	0,7500	1,13

\* 10% significant – one-tailed T-test

\*\* 5% significant – one-tailed T-test.

\*\*\* 1% significant – one-tailed T-test.

# 10% significant - two-tailed T-test

## 5% significant - two-tailed T-test.

### 1% significant - two-tailed T-test

**Table 5: Correlation analysis**

Panel A: Pearson and Spearman correlation matrix of all the voluntary disclosure variables.

	Pearson								
	D_Index	I_H	I_RSC	I_CI	I_IPR	I_IGE	I_ENF	I_AD	I_NIC
<b>D_Index</b>	1	0,0788	0,7809	0,7311	0,3182	0,7492	0,6892	0,0105	0,3349
<b>I_H</b>	0,0735	1	-0,1512	-0,0058	-0,1191	-0,1038	-0,1855	-0,1698	-0,2285
<b>I_RSC</b>	0,7989	-0,1302	1	0,4983	0,2949	0,5356	0,7092	-0,1296	0,2667
<b>I_CI</b>	0,7413	-0,0134	0,5125	1	0,0800	0,3949	0,4225	-0,1478	0,1047
<b>I_IPR</b>	0,2503	-0,1223	0,2660	0,0721	1	0,1467	0,3137	-0,1084	0,0426
<b>I_IGE</b>	0,6858	-0,1424	0,5354	0,3591	0,1292	1	0,3817	0,0085	0,1385
<b>I_ENF</b>	0,6591	-0,1982	0,6978	0,4221	0,2330	0,3452	1	-0,0637	0,2305
<b>I_AD</b>	0,1350	-0,1357	-0,0461	-0,0324	-0,1998	0,0940	0,0249	1	0,1733
<b>I_NIC</b>	0,3398	-0,1625	0,2400	0,1538	-0,0320	0,1168	0,1985	0,2737	1

D\_Index = General voluntary disclosure index, I\_H = historical information voluntary disclosure index. I\_RSC = Corporate Social Responsibility disclosure Index. I\_CI = Intellectual capital disclosure index. I\_IPR = Projected information voluntary disclosure index. I\_IGE = Background information voluntary disclosure index. I\_ENF = Non-financial information disclosure index. I\_AD = Management analysis voluntary disclosure index. I\_NIC = NIC/NIIF adoption disclosure index.

Panel B: Pearson and Spearman correlation matrix of D\_INDEX, corporate governance variables and control variables.

	Pearson											
	D_Index	MB	LASSET	LEV	ROA	BOARD	%_IND	%_DOM	%_EJE	CAP	DUALITY	
<b>Spearman</b>	<b>D_Index</b>	1	-0,0165 <i>0,8956</i>	0,3627 <i>0,0038</i>	0,1123 <i>0,3848</i>	0,0192 <i>0,8821</i>	0,2526 <i>0,0476</i>	0,2117 <i>0,0986</i>	-0,0574 <i>0,6576</i>	-0,2157 <i>0,0923</i>	0,1619 <i>0,2124</i>	-0,1885 <i>0,1423</i>
	<b>MB</b>	0,14536 <i>0,2596</i>	1	0,1333 <i>0,3017</i>	0,4209 <i>0,0007</i>	0,3097 <i>0,0143</i>	0,1980 <i>0,1229</i>	0,0229 <i>0,8600</i>	0,0218 <i>0,8665</i>	0,0009 <i>0,9944</i>	0,2704 <i>0,0335</i>	-0,2542 <i>0,0462</i>
	<b>LASSET</b>	0,3068 <i>0,0153</i>	0,3107 <i>0,0140</i>	1	0,3585 <i>0,0042</i>	-0,0597 <i>0,6450</i>	0,6698 <i>&lt;.0001</i>	0,0861 <i>0,5058</i>	0,0640 <i>0,6212</i>	-0,1985 <i>0,1219</i>	0,1778 <i>0,1704</i>	-0,0150 <i>0,9079</i>
	<b>LEV</b>	0,1963 <i>0,1263</i>	0,3451 <i>0,006</i>	0,4832 <i>&lt;.0001</i>	1	-0,3901 <i>0,0017</i>	0,0666 <i>0,6071</i>	0,0026 <i>0,9838</i>	-0,0732 <i>0,5717</i>	0,1779 <i>0,1664</i>	0,1675 <i>0,1970</i>	-0,2323 <i>0,0693</i>
	<b>ROA</b>	0,1244 <i>0,3353</i>	0,1535 <i>0,2336</i>	0,0257 <i>0,8428</i>	-0,5193 <i>&lt;.0001</i>	1	0,1400 <i>0,2779</i>	-0,0381 <i>0,7689</i>	0,1315 <i>0,3084</i>	-0,1354 <i>0,2939</i>	0,1857 <i>0,1518</i>	-0,1334 <i>0,3012</i>
	<b>BOARD</b>	0,2423 <i>0,0578</i>	0,3045 <i>0,0161</i>	0,6668 <i>&lt;.0001</i>	0,1748 <i>0,1742</i>	0,2994 <i>0,0181</i>	1	-0,2344 <i>0,0667</i>	0,3793 <i>0,0024</i>	-0,3675 <i>0,0033</i>	0,1986 <i>0,1250</i>	-0,0435 <i>0,7370</i>
	<b>%_IND</b>	0,1973 <i>0,1243</i>	0,0470 <i>0,7167</i>	0,0434 <i>0,7378</i>	-0,0799 <i>0,5371</i>	-0,0017 <i>0,9894</i>	-0,2598 <i>0,0415</i>	1	-0,8404 <i>&lt;.0001</i>	0,0071 <i>0,9561</i>	-0,3278 <i>0,0099</i>	0,0716 <i>0,5804</i>
	<b>%_DOM</b>	-0,0146 <i>0,9103</i>	-0,0112 <i>0,9314</i>	0,1097 <i>0,3962</i>	0,0064 <i>0,9606</i>	0,1542 <i>0,2315</i>	0,3935 <i>0,0016</i>	-0,8284 <i>&lt;.0001</i>	1	-0,4366 <i>0,0189</i>	0,2998 <i>0,3028</i>	-0,1330 <i>0,3028</i>
	<b>%_EJE</b>	-0,2077 <i>0,1053</i>	-0,0313 <i>0,8092</i>	-0,2225 <i>0,0822</i>	-0,0416 <i>0,7482</i>	-0,2471 <i>0,0529</i>	-0,3808 <i>0,0023</i>	0,0694 <i>0,5920</i>	-0,4306 <i>0,0005</i>	1	-0,0324 <i>0,8044</i>	0,1983 <i>0,1223</i>
	<b>CAP</b>	-0,1398 <i>0,2824</i>	0,2281 <i>0,0746</i>	0,1655 <i>0,2024</i>	-0,0218 <i>0,8676</i>	0,0552 <i>0,0673</i>	0,1729 <i>0,1826</i>	-0,2866 <i>0,0252</i>	0,2980 <i>0,0197</i>	-0,1044 <i>0,4234</i>	1	-0,1974 <i>0,1272</i>
	<b>DUALITY</b>	-0,2327 <i>0,0688</i>	-0,1628 <i>0,2061</i>	-0,0516 <i>0,6903</i>	-0,0794 <i>0,5395</i>	-0,1172 <i>0,3645</i>	-0,0419 <i>0,7465</i>	0,0607 <i>0,6394</i>	-0,1610 <i>0,2114</i>	-0,2535 <i>0,0468</i>	-0,2063 <i>0,1108</i>	1

D\_Index = General voluntary disclosure index. MB = *market-to-book* ratio. LASSET = logarithm of total assets. LEV = total debt to equity ratio. ROA = Return on assets. BOARD = board size. %\_IND = proportion of independent directors in the board. %\_DOM = proportion of grey directors in the board. %\_EJE = proportion of executive directors in the board. CAP = Ownership concentration measured as the proportion of the firm's capital owned by the main shareholders. DUALITY = dummy variable that takes value 1 when the president and CEO's responsibilities rely on the same person. Otherwise, this variable takes value 0.

**Table 6: Summary statistics from the Ordinary Least Squares regression. Stage 1 regression- relationship between the proportion of independent directors and firm specific characteristics.**

$$\%\_IND_{it} = \alpha + \beta_1 BOARD_{it} + \beta_2 CAP_{it} + \beta_3 LASSET_{it} + \beta_4 LEV_{it} + \beta_5 ROA_{it} + \beta_6 MB_{it} + \varepsilon_{it}$$

Dependent variable = %_IND				
Variables	Expected sign	Coef.	T-stat	Pr >  t
intercept		-0,21602	-0,96	0,3398
BOARD	-	-0,03012	-3,8 <sup>###</sup>	0,0004
CAP	-	-0,00244	-2,82 <sup>###</sup>	0,0067
LASSET	+	0,07181	3,57 <sup>###</sup>	0,0008
LEV	+	-0,03176	-1,47 <sup>*</sup>	0,1477
ROA	+	-0,16586	-0,3	0,7688
MB	+	0,01879	1,76 <sup>#</sup>	0,0838
Adj R- Sq	0,2465			
F-stat (p value)	0,0014			

BOARD = board size. CAP = Ownership concentration measured as the proportion of the firm's capital owned by the main shareholders. LASSET = logarithm of total assets. . LEV = total debt to equity ratio. ROA = Return on assets. MB = *market-to-book* ratio.

\* 10% significant – one-tailed T-test  
 \*\* 5% significant – one-tailed T-test.  
 \*\*\* 1% significant – one-tailed T-test.

# 10% significant - two-tailed T-test  
 ## 5% significant - two-tailed T-test.  
 ### 1% significant - two-tailed T-test

**Table 7: Summary statistics from the Two Stage Least Squares regression. Stage 2 regression - relationship between the voluntary disclosure variable and the vectors of BOARD and CONTROL variables, using the fitted value of %\_IND (%\_IND\_est)**

$$D\_INDEX_{it} / RD\_INDEX_{it} = \alpha + \beta_1 BOARD_{it} + \beta_2 \%\_IND\_est + \beta_3 DUALITY_{it} + \beta_4 CCAP_{it} + \beta_5 LASSET_{it} + \beta_6 LEV_{it} + \beta_7 ROA_{it} + \beta_8 MB_{it} + \varepsilon_{it}$$

Panel A: Dependent variable = D\_INDEX

	Model 1		Model 2		Model 3		Model 4	
	D_index		D_index		D_index		D_index	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
intercept	0,082	1,34	0,118	1,63	0,099	0,87	0,104	0,9
BOARD +	0,009	3,01 <sup>###</sup>	0,009	3,03 <sup>###</sup>	0,012	1,82 <sup>#</sup>	0,010	1,5 <sup>*</sup>
%_IND_EST +	0,275	2,64 <sup>#</sup>	0,240	2,16 <sup>#</sup>	0,358	2,14 <sup>#</sup>	0,293	1,54 <sup>*</sup>
DUALITY -	-0,042	-1,85 <sup>#</sup>	-0,045	-1,97 <sup>#</sup>	-0,045	-1,85 <sup>#</sup>	-0,047	-1,92 <sup>#</sup>
CCap -	-	-	0,027	-0,93	-	-	-0,023	-0,72
LASSET +	-	-	-	-	-0,006	-0,38	-0,002	-0,11
LEV +	-	-	-	-	0,015	1,2	0,013	1,03
ROA +	-	-	-	-	0,247	0,9	0,231	0,84
MB -/+	-	-	-	-	-0,010	-1,83 <sup>#</sup>	-0,009	-1,6 <sup>*</sup>
Adj R- Sq	0,1507		0,1487		0,1484		0,1408	
F-stat	0,0058		0,01		0,0257		0,0378	
(p value)								

Panel B: Dependent variable = RD\_INDEX

	Model 1		Model 2		Model 3		Model 4	
	RD_index		RD_index		RD_index		RD_index	
	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
intercept	1,281	0,64	2,048	0,86	1,078	0,29	1,172	0,31
BOARD +	0,238	2,56 <sup>#</sup>	0,240	2,56 <sup>#</sup>	0,295	1,39 <sup>*</sup>	0,265	1,18
%_IND_EST +	7,069	2,06 <sup>#</sup>	6,329	1,72 <sup>#</sup>	8,751	1,59 <sup>*</sup>	7,452	1,19
DUALITY -	-1,572	-2,12 <sup>#</sup>	-1,646	-2,18 <sup>#</sup>	-1,717	-2,17 <sup>#</sup>	-1,762	-2,19 <sup>#</sup>
CCap -	-	-	-0,580	-0,6	-	-	-0,460	-0,44
LASSET +	-	-	-	-	-0,057	-0,12	0,022	0,04
LEV +	-	-	-	-	0,356	0,89	0,320	0,78
ROA +	-	-	-	-	8,056	0,89	7,744	0,85
MB -/+	-	-	-	-	-0,327	-1,74 <sup>#</sup>	-0,307	-1,57 <sup>*</sup>
Adj R- Sq	0,1219		0,112		0,118		0,1051	
F-stat	0,0144		0,0287		0,051		0,0802	
(p value)								

BOARD = board size. %\_IND\_EST = proportion of independent directors on the board as estimated in the 1<sup>st</sup> stage regression. DUALITY = dummy variable (1-0) that takes value one when the president and CEO responsibilities are concentrated in the same person. CCAP = Ownership concentration measured with a dummy variable (1-0) that takes value one when the main shareholders own more than 40% of the firm.. LASSET = logarithm of total assets. LEV = total debt to equity ratio. ROA = Return on assets. MB = market-to-book ratio. D\_INDEX General voluntary disclosure index. RD\_Index corresponds to the transformation of the D\_INDEX variable in deciles. RD\_Index takes values from 1 to 10.

\* 10% significant – one-tailed T-test  
 \*\* 5% significant – one-tailed T-test.  
 \*\*\* 1% significant – one-tailed T-test.

# 10% significant - two-tailed T-test  
 ## 5% significant - two-tailed T-test.  
 ### 1% significant - two-tailed T-test

## Anex 1

### Information items

#### Panel A: Information categories

Category	N° items
Historical information	10
Corporate social responsibility	3
Intangibles and intellectual capital	14
Projected information	15
Background information	17
Non-financial information	7
Management analysis	5
NIC/NIIF adoption	3
<b>Total</b>	<b>76</b>

#### Panel B: checklist of the 76 information items related to seven areas of information

Category
<b>Historical information</b>
ROE - figure or growth percentage (YES/NO)
ROE - figure or growth percentage (additional information)
ROA - figure or growth percentage (YES/NO)
ROA - figure or growth percentage (additional information)
EPS - figure or growth percentage (YES/NO)
EPS - figure or growth percentage (additional information)
Sales - figure or growth percentage (YES/NO)
Sales - figure or growth percentage (additional information)
Price per share (PPS) figure or growth percentage (YES/NO)
Price per share (PPS) - figure or growth percentage (additional information)
<b>Corporate social responsibility</b>
GRI Indicators (YES/NO)
Description of social programmes and strategy (YES/NO)
Quantitative information on social investment (YES/NO)
<b>Intangibles / Intellectual capital</b>
Intellectual capital report (YES/NO)
Human capital: training programmes (YES/NO)
Human capital: training programmes (total investment)
Human capital: training programmes (number of programmes)
Human capital: training programmes (number or percentage of employees attending the training programmes)
Human capital: employee turnover (YES/NO)
Relational capital: customer loyalty index (YES/NO)
Relational capital: customer satisfaction index (YES/NO)
Structural Capital: quality certifications (YES/NO)
Structural Capital: quality certifications (number)
Structural Capital: Investment on Research (YES/NO)
Structural Capital: Investment on Research (figure)
Structural Capital: Investment on Development (YES/NO)
Structural Capital: Investment on Development (figure)

Panel B (continue)

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**Projected information**

Descriptive information on projected sales (YES/NO)  
Quantitative information on projected sales (YES/NO)  
Quantitative information on projected sales (additional information)  
Descriptive information on projected earnings (YES /NO)  
Quantitative information on projected earnings (YES /NO)  
Quantitative information on projected earnings (additional information)  
Descriptive information on projected R&D expenditures (YES /NO)  
Quantitative information on projected R&D expenditures (YES /NO)  
Quantitative information on projected R&D expenditures (additional information)  
Descriptive information on projected market share (YES /NO)  
Quantitative information on projected market share (YES /NO)  
Quantitative information on projected market share (additional information)  
Descriptive information on projected cash flows (YES /NO)  
Quantitative information on projected cash flows (YES /NO)  
Quantitative information on projected cash flows (additional information)

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**Background information**

Objectives – descriptive information (YES /NO)  
Objectives - quantitative information (YES /NO)  
Macroeconomic environment - descriptive information (YES /NO)  
Macroeconomic environment - quantitative information (YES /NO)  
Legal and political environment - descriptive information (YES /NO)  
Legal and political environment - quantitative information (YES /NO)  
Competitive environment - descriptive information (YES /NO)  
Competitive environment - quantitative information (YES /NO)  
Financial markets - descriptive information on the capital markets' general trend (YES/NO)  
Financial markets- quantitative information on the capital markets' general trend (YES/NO)  
Descriptive information on the company stock evolution on financial markets (YES/NO)  
Quantitative information on the company stock evolution on financial markets (YES/NO)  
Detailed information on ownership structure (YES/NO)  
Information about the management stock ownership (YES/NO)  
Detailed information on management remuneration (YES/NO)  
Information on good corporate governance practices (YES/NO)  
Information about meetings with financial analysts (YES/NO)

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**Non-financial information**

Number of employees  
Information on the company contracting policy (YES /NO)  
Information on the distribution of employees by gender (YES /NO)  
Information on the distribution of employees by age (YES /NO)  
Information on average compensation per employee (YES/NO)  
Information on number of units sold (figure or growth percentage) (YES/NO)  
Information on market share (YES/NO)

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**Management analysis**

Management analysis of changes in net sales (YES /NO)  
Management analysis of changes in the level of expenditures (YES /NO)  
Management analysis of changes in earnings (YES /NO)  
Management analysis of changes in market share (YES /NO)  
Management analysis of changes in R&D expenses (YES /NO)

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**NIC/NIIF adoption**

Descriptive information on the main effects of the adoption of NIC/NIIF (YES/NO)  
Quantitative information - reconciliation - main effects of the adoption of NIC/NIIF on shareholders' equity (YES/NO)  
Quantitative information - reconciliation - main effects of the adoption of NIC/NIIF on earnings (YES/NO)

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