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Article

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Does corporate governance affect financial communication transparency? Empirical evidence in the Tunisian context

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Abstract: The present study is focused on investigating the relationship between intentional governance mechanisms (Directors' boards, Ownership structure and audit quality) and financial communication transparency. For this purpose, a model is used and applied to Tunisian firms' sample observed over the period 2006–2013. The achieved results reveal that intentional governance mechanisms are positively related to a higher transparency level noticeable in financial communication (voluntary disclosure and quality information). In addition, empirical tests indicate that financial communication transparency is highly dependent on the board size, ownership concentration, as well as on audit quality.

Subjects: Business; Management and Accounting; Financial Accounting; Government & Non-Profit Accounting

Keywords: transparency; corporate governance; financial communication; voluntary disclosure; earning management; information

1. Introduction

Since 2002, the recurrent financial scandals affecting such renowned and well-established companies as Enron, WorldCom and Parmalat have deeply touched the economic and financial sectors worldwide. These accounting and financial scandals have shaken the investors' confidence in financial markets, resulting in a considerable loss of credibility regarding published accounting information. Internationally, several countries' regulators responded by reforming listed companies' governance practices and implementing corrective measures to regain the financial investors' confidence. Their contributions were crowned with the enactment of "Sarbanes-Oxley Act" (2002) in the USA and the Financial Security Act (2003) in France.[1]

Kachouri Ben Saad Maali

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PUBLIC INTEREST STATEMENT

The goal of our research is to introduce the relationship between financial communication and corporate governance conducted in the Tunisian context. This study was the subject of three articles: the first published: "Accounting conservatism and earning timeliness: Impact on Corporate Governance Index", the second is accepted in your journal: "Does corporate governance affect Financial communication transparency? Empirical evidence in the Tunisian context" and the third is in revision: "Causal relationship between financial communication and corporate governance in Tunisian context".

Corporate governance is primarily concerned with the development of a set of principles for the decision-making system, whereby modern companies can be effectively managed. The corporate governance concept extends also to the achievement of such core values, as transparency and equity. In this respect, the accounting and financial system appears to play an important role in balancing agency relationships (Jensen & Meckling, 1976). Its major role lies in producing credible information likely to facilitate the managers' control and the effective implementation of shareholders' rights.

In this context, one might very well wonder about the new governance system's efficiency in protecting shareholders' interests, reducing the earnings management, increasing the level of voluntary disclosure and maintaining a fair view of financial information. In this respect, the present work aims at studying the intentional governance mechanisms' impact on financial communication transparency. Noteworthy, in this regard, the intentional governance mechanisms subjects of this study are mainly: the directors' board, ownership structure and audit quality. The present work's interest is twofold, namely:

Firstly, it undertook to study the intentional governance mechanisms' effect on voluntary disclosure as analysed by Ho and Shun Wong (2001), Haniffa and Cooke (2002), Donnelly and Mulcahy (2008), Abdur (2010), as well as Chakroun and Matoussi (2012).

Secondly, it provides an examination of the intentional governance mechanisms' influence on information quality, as evaluated in respect of earning management, following the analysis works conducted by Chtourou, Bédard, and Courteau (2001), Sánchez-Ballesta and García-Meca (2009).

This present work is organized according to the following structure: Section 2 is devoted to presenting a theoretical framework and hypothesis development, highlighting the link between governance mechanisms, subject of study and financial communication transparency along with introducing the advanced hypotheses. As for, Section 3, it is designed to describe the applied methodology, the empirical model along with the variables' definitions. Finally, Section 4 involves the reached statistical results, summaries and concluding remarks.

2. Theoretical framework

The relevant literature advances several arguments that explain why some firms provide more comprehensive voluntary information than others do. Ownership structure, the board of directors and audit quality have been identified as determinants of financial communication transparency. As highlighted by, Klai and Omri, a strong debate exists as to the persistence of a relationship between corporate governance and financial information.

2.1. Directors' boards and financial communication transparency

The board constitutes a major control mechanism, exhaustively discussed on corporate governance-related research. In fact, the board's principal functions consist mainly in evaluating decisions along with controlling executives, Fama and Jensen (1983), as well as Allegrini and Greco (2013). In turn, Cheng anticipates that the board size, characteristics and composition do help greatly in influencing its roles' effectiveness.

In addition, several elaborated empirical studies are discovered to emphasize the prevalence of a significant positive relationship between the directors' board size and voluntary disclosure (Abdur, 2010; Donnelly & Mulcahy, 2008). This finding proves well the fact that a director's board of a large size is likely to increase relevant experience, promote expertise and, consequently, the level of voluntary information disclosure. In this respect, Samaha, Dahawy, Hussainey, and Stapleton (2012) report that the Egyptian-listed firms with large boards are more likely to disclose a greater deal of corporate governance information than their smaller board counterparts. More recently, Allegrini and Greco (2013) have examined 177 companies listed in the Italian Stock Exchange in 2007. They

report that larger boards usually tend to disclose more information about firms' strategic objectives than smaller ones.

As for, Chtourou et al. (2001) and Chekili (2012), they have concluded that large boards are a lot more efficient than small ones in monitoring and controlling the financial communication quality. In Mexico, Davila and Watkins, besides Ferraz et al., have found that, with regard to the Brazilian case, whenever the board size proves to be very small, the management team monitoring tends in turn to be small; so, they tend towards adopting greater discretion in receiving higher remuneration, hence a greater chance would prevail for pursuing earnings management policy. Thus, the following hypothesis can be formulated:

> Hypothesis 1: A positive relationship prevails between board size and financial communication transparency.

In turn, Forker (1992) stresses the fact that the separation between chairman functions and those of the Chief Executive Officer (CEO) helps improve the executive management performance quality and reduce the information retention margins, which would consequently lead to an improvement in disclosure information quality. Beasley and Dechow, Sloan, and Sweeney (1995) have concluded that the combined management and control functions paves the way for the formulation and release of fraudulent financial statements. Lakhal has discovered that the managers' probability of voluntary disclosure appears to increase in presence of a dual structure directors' board. In this sense, Ibrahim and Abdul Samad state that, in regard to the Malaysian context, family business proves to exhibit for less agency conflicts in the case when there is a separation between the board president's respective functions and those of the CEO.

With respect to earning management, Chtourou et al. (2001), Peasnell et al. and Ellili have noticed a positive and significant association to prevail between the combined CEO and Directors' board chairman functions and discretionary accounting adjustments. Similarly, Ianniello has been lead to conclude that power concentration in the hands of the CEO turns out to positively affect the accounting adjustments level and results in a deterioration of earning management quality. At this level, the second hypothesis can be drawn:

> Hypothesis 2: A negative relationship prevails between CEO duality and financial communication transparency.

Within the dame context, the agency theory suggests that independent boards enjoy a greater capacity in limiting managerial opportunism (Allegrini & Greco, 2013; Fama & Jensen, 1983), it also predicts that the presence of external directors helps reduce information asymmetry (Allegrini & Greco, 2013). Most empirical studies indicate mainly the persistence of a positive association between the proportion of external directors and voluntary disclosure (Cheng & Courtenay, 2006; Donnelly & Mulcahy, 2008).

More recently, Samaha et al. (2012) report that disclosure has been noticed to grow significantly among 100 Egyptian listed firms, with the existence of a greater proportion of external directors. Moreover, Ntim and Soobaroyen declare that a high percentage of external directors do prove to positively influence good corporate governance practices.

In addition, Cheng and Courtenay (2006) argue that the board independence degree is closely associated with information quality. Similarly, various other conducted studies provide empirical evidence concerning the external directors' crucial role in setting up earning management policies, documenting that a higher proportion of external directors would lead to a greater financial information quality to be issued by firms, thus reducing the earning management-related opportunities (Davidson, Goodwin-Stewart, & Kent, 2005). Hence, the next hypothesis can be put forward:

Hypothesis 3: a positive relationship persists between the outside directors' proportion and financial communication transparency.

As a matter of fact, the presence of an audit committee is closely associated with a reliable financial communication transparency, for instance, reducing the incidence of error irregularities (Ho & Shun Wong, 2001). Ntim et al. find that audit committee helps in implementing corporate governance standards, thus increasing voluntary disclosure. Indeed, Akhtaruddin, Hossain, Hossain, and Yao (2009) predict that the presence of an audit committee can lead to a noticeable reduction in information variations, by sending a signal to the market showing the company's commitment to good corporate governance practices.

A more exhaustive literature review highlights that certain studies reveal the idea that maintaining an audit committee is crucially critical for the prevention of fraud (Uzun, Szewczyk, & Varma, 2004). Besides, Davidson et al. (2005) along with Baxter and Cotter, with regard to the Australian context, have found that the presence of an audit committee has been discovered to participate significantly in reducing the earning management practices. In regard to the French context, Piot and Janin (2007) as well as Souid and Stepniewski (2010) have revealed that the presence of an audit committee within the board entices the leader to engage in earning management practices. Similarly, Chen et al. (2008), based on a sample of foreign-listed companies located in the USA, have discovered that firms usually tend to opt for the creation of such a committee in a bid to achieve the most convenient associations between stock returns and financial result. So, the fourth relevant hypothesis to test is formulated as follows:

Hypothesis 4: A negative relationship predominates between the presence of an audit committee and financial communication transparency.

2.2. Ownership structure and transparency of financial communication

Apart from the directors' board characteristics, which stand as significant factors that help greatly in influencing financial communication transparency, an examination of pertinent literature also reveals that ownership structure proves to remarkably impact voluntary disclosure and financial information quality. In addition, as an internal control mechanism, ownership structure has been discovered to be a crucial determinant of highly effective better governance practices (Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998).

Several studies have dealt with examining the relationship between ownership concentration of and voluntary disclosure of information; most of these researches have underlined the predominance of a negative relationship between ownership concentration and voluntary information disclosure (Eng & Mak, 2003). The study elaborated by Haniffa and Cooke (2002), relevant to the Malaysian context, along with the works conducted by Khlifi and Bouri (2007) and Chakroun and Matoussi (2012) regarding the Tunisian context affirm well the persistence of a negative relationship between ownership concentration and the voluntary disclosure extent.

In this context, Bos and Donker have concluded that increased ownership constitutes an effective corporate governance mechanism, useful for monitoring the management-taken accounting decisions, denoting a higher earnings quality. Similarly, they emphasize increased ownership concentration stands as an effective corporate governance mechanism that sounds crucial for monitoring the accounting decisions of an incumbent management, e.g. voluntary accounting alterations. Empirical results achieved with respect to the USA reveal well that accounting earnings information content tends to increase remarkably with the capital percentage held by administrators and managers. The fifth hypothesis to be tested can be set up as:

Hypothesis 5: A negative relationship persists between ownership concentration and financial communication transparency.

Further, to the majority shareholders, another element emerges as a critical factor that is supposed to improve corporate control efficiency, namely, the institutional investors, considered as active actors in corporate governance. Institutional investors are capable of monitoring firms and can greatly help in improving corporate governance disclosure (Aggarwal, Erel, Ferreira, & Matos, 2011; Barako, Hancock, & Izan, 2006). According to the diversity of conducted empirical studies, a positive relationship is reckoned to persist between institutional ownership and voluntary corporate disclosure (Aggarwal et al., 2011; Barako et al., 2006). In this regard, Ruiz-Mallorquí and Santana-Martín argue that institutional investors do not necessarily constitute an influential factor in promoting the transparent disclosure level.

Moreover, in a study conducted with regard to a sample composed of 23 countries, observed over the period 2003–2008, Aggarwal et al. (2011) have suggested that corporate governance practices turn out to be for more effective with respect to the firm's higher institutional ownership. Empirical studies dealing with the relationship between institutional investors and earning management suggest either a negative or non-significant association among them. As a matter of fact, the presence of higher institutional ownership is discovered to yield a positive impact on information transparency, as managers would be discouraged from undertaking earning management. Thus, the sixth hypothesis to be verified may be proposed as:

> Hypothesis 6: A positive relationship exists between institutional ownership and financial communication transparency.

2.3. Audit quality and financial communication transparency

It is worth mentioning that audit quality depends highly on two major variables, namely, the audit firm size and its reputation. In addition, the large audit firms are usually more competent, opt to encourage firms to disclose greater amounts of information. Thus, these firms usually appear to be in position to play a key role in defining disclosing policies (Raffournier, 1990), likely to lead to greater deals of disclosure strategies. In this content, both Owusu and Ansah state that external auditor plays a considerable role in enhancing the political and information disclosure practices. In addition, the large and well-established renowned audit firms usually have a great reputation to preserve and maintain, so they would tend to resort to more disclosers so as to safeguard their established positions (De Angelo & Rice, 1983) and to reduce their legal liability.

In fact, in analysing the audit quality impact on the extent of earning management, some researchers, (e.g. Beasley & Petroni, 2001) have concluded that quality auditors most often tend to reduce earnings management, thus improving the financial information quality. Worth mentioning, in this respect, Depoers (2000), who put to test the hypothesis stipulating that the disclosure level is positively correlated with the audit firm size, the attained results show that the French companies audited by firms belonging to the "Big six" appear to disclose, significantly, more information than those audited by other auditing firms. In addition, Krishnan finds that discretionary accruals (DA) in firms audited by Big six are discovered to have higher positive prospects of future profitability than those audited by non-Big six auditors. In turn, Ding and Jia add that clients of the Big six auditors tend to exhibit lower levels of absolute DA and that earnings' relevance value has noticed a significant increase. At this level, the seventh hypothesis to be tested can be posed, assuming that:

> Hypothesis 7: A positive relationship exists between audit quality and financial communication transparency.

3. Research design

This section is dedicated to expose the methodology applied to carry out the empirical part of this research. In the first stage, the research data sample will be introduced and, in a second stage, the research model is going to be thoroughly explained.

3.1. Sample selection and data

The sample subject of study is composed of 28 Tunisian companies listed in the Tunisian Stock Exchange (TSE), relevant to the non-financial sector. The study period ranges from the beginning of 2006 to the end of 2013. Thus, 28 firms and 224 observations will make up our sample construct. Our database has been collected from the financial statements available on the Tunis Stock Exchange and Financial Market Council websites (Table 1).

3.2. Measures of financial communication transparency

In this paper, financial communication transparency is evaluated by the means of financial information extent and quality. On a first step, this study will attempt to determine the extent of financial communication via the voluntary disclosure index. On a second step, the DA will be applied as a proxy of earnings management to assess the financial information quality.

3.2.1. The voluntary disclosure index

Various empirical studies have dealt with investigating a disclosure index construction, among which one can the work elaborated by Botosan (1997), which has stood as the basis for several other empirical studies. Relying on several previously conducted work studies (for instance, Patelli & Prencipe, 2007), the present study attempts to device a special voluntary disclosure index construct that rests on the Botosan index (1997) while including three information categories, namely: information on intangible assets, social and environmental information and governance information. For the sake of a better understanding of the user's needs for external financial information of annual reports in Tunisia (Table 2).

Under the voluntary disclosure index, the entirety of information items forming the index is considered equally important to the user and all of them are numerically scored on a dichotomous basis. To note, the index is scored 1 for any item disclosed in the annual report and 0 if not disclosed. The total voluntary disclosed index is then collected for each sample firm under the form of a ratio:

Table 1. Selection sample

Initial sample	77
Financial firms	(34)
Firms with insufficient data	(15)
Final sample	28
Study duration	5
Total observations	224

Table 2. Information category for a voluntary disclosure index

Information category	Number of items
Categories of information of the Botosan grid analysis (1997)	
General corporate information	16
Financial review	14
Non-financial information	13
Future prospects	10
Analysis and discussion of management	13
Categories of information added to the analysis grid Botosan (1997)	
Information on intangible assets	4
Social and environmental information	7
Governance information	6
Total	83

total disclose score to the maximum, at most, disclosure by the firm. The disclosure index for each firm is then expressed in the form of a percentage.

3.2.2. Financial information quality: earnings management (the DA)

In the present study, earnings management is defined in terms of "absence of manipulative practices". This is mainly due to the fact that the managers' intentional earnings' manipulation may well reduce the earning of usefulness earnings for the overall users. In this regard, Dechow and Schrand have presumed earnings, which are persistent and predictable, may not be of high quality if they result from earnings management. This measure consists in a first place, in estimating total accruals (TA) and in a second place, extracting from these accruals the non-discretionary ones (NDA). Put differently, this measurement looks as follows:

$$\text{Total accruals (TA)} = \text{discretionary accruals (DA)} + \text{non-discretionary accruals (NDA)}$$

To the extent:

$$\text{Discretionary accruals (DA)} = \text{total accruals (TA)} - \text{non-discretionary accruals (NDA)}$$

TA are calculated via application of the Raman and Shahrur model (2008). The latter serves to measure earnings management through adjustment of J. Jones' classical model, by adding two variables to calculate the performance (ROA) and the "Book-to-market" ratios (BM). The model turns out to look as follows:

$$\text{TA}_{it}/A_{it-1} = b_0(1/A_{it} - 1) + b_1((\text{DREV}_{it} - \text{DREC}_{it})/A_{it-1}) + b_2(\text{PPE}_{it}/A_{it-1}) + b_3\text{ROA}_{it} + b_2BM_{it} + \zeta it$$

where, for fiscal year t and firm i, TA represents the total accruals, defined as the difference between earnings and operating cash flows, A_{it-1} represents total assets in $t-1$, DREV is the change in revenues from the preceding year (REVt − REV_{t-1}), DREC is the change in net account receivables from the preceding year (REVt − REV_{t-1}) and PPE stands for the gross value of property, plant and equipment; ROA represents the return on assets of firm i in year t and BM denotes the book-to-market ratio of the firm i in year t.

As for DA, they are obtained by computing the difference between each firm's corresponding total accrual (TA) and the non-discretionary accruals (NDA):

$$\text{DA}_{ij,t} = \text{TA}_{ij,t} - \text{NDA}_{ij,t}$$

3.3. Models and variables

For the purpose of studying the relationship between financial communication transparency and intentional governance mechanisms, the below model is applied, which serves to simultaneously test the influence of the board leadership structure and its size, independent directors, institutional ownership, ownership concentration and audit quality. Each of the above-discussed control variables is included in the model (debt level and firm size). In this way, the following models are used to test the hypotheses:

$$\text{VDI}_{it} = \beta_0 + \beta_1\text{BSIZE}_{it} + \beta_2\text{CEO}_{it} + \beta_3\text{POD}_{it} + \beta_4\text{ACOM}_{it} + \beta_5\text{CONC}_{it} + \beta_6\text{INVI}_{it} + \beta_7\text{LEV}_{it} + \beta_8\text{BIG}_{it} + \beta_9\text{FSIZE} + \varepsilon_{it}$$

$$\text{QFI}_{it} = \beta_0 + \beta_1\text{BSIZE}_{it} + \beta_2\text{CEO}_{it} + \beta_3\text{POD}_{it} + \beta_4\text{ACOM}_{it} + \beta_5\text{CONC}_{it} + \beta_6\text{INVI}_{it} + \beta_7\text{LEV}_{it} + \beta_8\text{BIG}_{it} + \beta_9\text{FSIZE} + \varepsilon_{it}$$

The indices i and t correspond to the firm and the year (2006–2013).

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Table 3. Summary of variables definitions and measurements

Variable names	Measures
VDI	Voluntary disclosure index consisting of 83 items p, which takes a value 1 if each item is disclosed, and 0 otherwise; scaled to have a value between 0 and 100%
QFI(DA)	The discretionary accruals (DA) (model of Raman and Shahrur (2008))
BSIZE	Board activity is measured by the number of meetings of the board of directors
CEO	Binary variable coded 1 if there is a duality function of the CEO, 0 otherwise
POD	Dividing the number of outside directors with the total number of directors in the board
ACOM	Audit committee data will be coded (1) to indicate the existence of audit committee and (0) to indicate the non-existence
CONC	Proportions of shares held by the majority of shareholders of the company
INVI	Proportions of equities held by institutional investors
LEV	Total liabilities to total assets
BIG	Dummy variable taking the value 1 when the company is audited by at least one "Big four" and 0 otherwise
FSIEZ	Log of firm's total assets

where VDI is the voluntary disclosure index; QFI is the quality of financial information; BSIZE is the board size; CEO is the duality function of the CEO; POD is the percentage of outside directors; ACOM is the audit committee; CONC is the ownership concentration; INVI is the institutional investors; LEV is the debt level; BIG is the auditors quality; and FSIZE is the firm size.

Table 3 depicts the dependent and independent variables, their respective definitions and expected signs.

4. Results and discussion

4.1. Descriptive analysis

Table 4 reports the descriptive statistics pertaining to the entirety of variables investigated in this study. The descriptive statistics result indicates that the average voluntary disclosure index is of an order of 49.7%, with a minimum rate of 12% and a maximum rate of 78%. Hence, it appears clear that the global disclosure index, relevant to the TSE (Tunisien stock Exchange)-listed companies, is marked by noticeable significant variations. These remarkable shifts are actually reflected in the firms' sample nature and size since the listed companies are characterized with large sizes and certain publication obligations, in addition to the benefit they enjoy for publishing information in such a way as to keep their visibility and preserve transparency towards the public.

Besides, one might well notice that the reached result highlights the fact that the DA are discovered to be positive (average = 0.06). The maximum and minimum accruals recorded via this variable are, respectively, about 1.006 and −1.058. Such findings allow us to deduce that for the majority of Tunisian firms, DA appear to have a great impact on the level of published results.

Table 4 indicates well that firms of our sample are characterized by large boards, with an average size of 8.58, and with the dominance of outside directors at the board level, with an average rate of 40.9%. This might well have its explanation in the company need for further information transparency and reliability, likely to entice external directors to reinforce control even more.

Regarding ownership structure, its reveals that institutional investors hold, on average, 14.8% of the firm capital, with a maximum of 89%, whereas the rest of the companies are witnessing a lack of institutional investors (min = 0%). As for capital concentration, it displays values denoting that 31.7% of Tunisian firms are characterized by high concentration. Besides, only 43.8% of Tunisian companies appear to be audited by at least one of the "Big four". As for the control variables, the Tunisian firm size, as measured by the total assets' logarithm, has been discovered to record an average of 17.99%, whereas the debt ratio average is of the order of 47%.

4.2. Correlation analysis

To note, the Pearson correlations between independent variables are figured in Table 5. This test enables to check whether any multicollinearity problems and associations among variables do actually persist. It is worth noting that none of the correlation coefficients among independent variables proves to be greater than the threshold of 0.8. This finding, that multicollinearity does not appear, seems to be a matter of concern.

Similarly, for the sake of ensuring that the applied regression models do not actually suffer from a serious multicollinearity problem, each model pertaining tolerance and variance inflation factors (VIF) has also been computed. In this respect, Menard predicts that tolerance statistics set at below 0.2 indicate a potential multicoliniearity problem.

Table 4. Variables' descriptive statistics

Numeric variables' descriptive statistics

Variables	*N*	Mean	Min	Max	Std. Dev.
VDI	224	0.497	0.120	0.780	0.117
QFI(DA)	224	0.063	−1.058	1.006	0.157
BSIZE	224	8.580	4	12	2.173
POD	224	0.409	0	0.830	0.263
INVI	224	0.148	0	0.890	0.222
LEV	224	0.470	0.080	0.970	0.199
FSIZE	224	17.99	15.50	21.13	0.985

Dichotomous variables' descriptive statistics

	N		Variable = 1		Variable = 0
CEO	224		149		75
			66.5%		33.5%
ACOM	224		16		208
			7.1%		92.9%
CONC	224		71		153
			31.7%		68.3%
BIG	224		98		126
			43.8%		56.3%

Notes: VDI: voluntary disclosure index consisting of 83 items p, which takes a value 1 if each item is disclosed, and 0 otherwise; scaled to have a value between 0 and 100%; QFI(DA): the discretionary accruals (DA) (model of Raman and Shahrur (2008)); BSIZE: board activity is measured by the number of meetings of the board of directors; CEO: binary variable coded 1 if there is a duality function of the CEO, 0 otherwise; POD: dividing the number of outside directors with the total number of directors in the board; ACOM: audit committee data will be coded (1) to indicate the existence of audit committee and (0) to indicate the non-existence; CONC: proportions of shares held by the majority of shareholders of the company; INVI: proportions of equities held by institutional investors; LEV: total liabilities to total assets; BIG: dummy variable taking the value 1 when the company is audited by at least one "Big four" and 0 otherwise; FSIEZ: log of firm's total assets.

As a matter of fact, on testing the model via multiple regression analysis, none of the VIF confirm well that no multicollinearity problem in the model appears to persist since multicollinearity is a serious problem if the value of the variance inflation factor (VIF) is greater than 10.

4.3. Multivariate analysis

Based on panel data framework, our econometric estimates will be undertaken according to a panel cylinder capacity. In this respect, several methods are available, whereby our model can be assessed and estimated. The choice depends highly on the assumptions made in regard to the parameters. For this sake, it seems necessary to proceed with estimating these different models via distinction between the fixed model and the random effect one.

4.3.1. Fixed effect tests' results

Table 6 depicts the fixed effects results relevant to both of the models.

According to this table, the Fisher test proves to be significant at the 1% threshold with respect to both regressions, thus confirming the individual fixed effects. Accordingly, the first hypothesis turns out to accept the presence of fixed effects.

4.3.2. Random effect tests' results

Table 7 depicts the random effects results relevant to both of the models.

Table 5. Pearson correlations analysis

	VDI	QFI	BSIZE	CEO	POD	ACOM	CONC	INVI	BIG	LEV	FSIZE	VIF
VDI	1											–
QFI	−0.105	1										–
BSIZE	0.005	−0.048	1									1.451
CEO	−0.078	0.021	0.049	1								1.135
POD	−0.083	0.065	0.122	0.168*	1							1.324
ACOM	0.030	0.016	0.142	0.087	−0.040	1						1.097
CONC	0.165*	−0.06	0.080	0.056	0.233**	−0.077	1					1.262
INVI	−0.042	0.068	−0.031	−0.15*	0.151*	−0.017	0.267*	1				1.192
BIG	−0.108	0.028	−0.015*	−0.080	0.225*	0.140*	−0.19**	0.159*	1			1.431
LEV	−0.099	−0.02	0.171*	−0.076	0.193**	−0.110	0.054	0.028	−0.125	1		1.297
FSIEZ	−0.060	−0.11	0.475**	−0.077	0.133*	0.158*	0.110	0.140*	0.148*	0.335*	1	1.670

Notes: VDI: voluntary disclosure index consisting of 83 items p, which takes a value 1 if each item is disclosed, and 0 otherwise; scaled to have a value between 0 and 100%; QFI(DA): the discretionary accruals (DA) (model of Raman and Shahrur (2008)); BSIZE: board activity is measured by the number of meetings of the board of directors; CEO: binary variable coded 1 if there is a duality function of the CEO, 0 otherwise; POD: dividing the number of outside directors with the total number of directors in the board; ACOM: audit committee data will be coded (1) to indicate the existence of audit committee and (0) to indicate the non-existence; CONC: proportions of shares held by the majority shareholders of the company; INVI: proportions of equities held by institutional investors; LEV: total liabilities to total assets; BIG: dummy variable taking the value 1 when the company is audited by at least one "Big four" and 0 otherwise; FSIEZ: log of firm's total assets.

*Significance at a level lower than 10%.

**Significance at a level lower than 5%.

Table 6. Fixed effect tests

	Dependant variables	
	VDI	QFI
Fisher test	12.55*** (0.0000)	9.61*** (0.0000)

***Significance at a level lower than 1%.

This table reveals that the Breush and Pagan test appears to be noticeably significant at the 1% regarding both, confirming well the significance of random effects. Consequently, the hypothesis H1 is discovered to be accepted, namely the presence of random individual effects.

4.3.3. The Hausman tests' results

Table 8 illustrates the Hausman tests' reached results concerning both multiple regression models.

In order to distinguish the individual fixed effects from the random effects, an application of the Hausman test seems imposed and mandatory. The achieved results reveal well that the Hausman test proves to be non-significant with respect to dependent variable model VDI. Hence, the random effects' specification turn out to be recommended and crucially applicable.

4.3.4. Regression results

Table 9 depicts the regression analysis relevant to the 28 companies of this study. The attained finding shows that intentional mechanisms prove to have an important influence on financial communication transparency. So, one might well deduce that the adjustment quality relevant for both models turns out to be quite satisfactory. In fact, the probability of Chi-2 (χ^2) is discovered to be highly significant. Indeed, the models "pertinent R-squared" (R^2) values are equal to 30.6% for model 1 and 27.1% for model 2.

Actually, the reached results show well that the board size is negatively associated with voluntary disclosure and information quality. Accordingly, they can be interpreted as follows: whenever the board appears to be small and characterized by a noticeable predominance of outside directors, it can well be improved of its efficiency, thus increasing the published information level. Still this finding is not very consistent with the results researched by Abdur (2010). More does it corroborate the results attained by Bushman, Chen, Engel, and Smith (2004), affirming that a large board does help control the manager.

Regarding the variable, CEO duality, it sounds to have a negative and significant effect on financial communication transparency. Indeed, separating the board functions helps well reduce information retention margins, increase the board effectiveness and voluntary disclosure of information. In effect, this result seems to corroborate well with good governance practices. It is also consistent with the previously conducted studies of Ho and Shun Wong (2001), Haniffa and Cooke (2002), Arcay and Vázquez, as well as Cheng and Courtenay (2006).

Furthermore, the outside directors' proportion variable is discovered to have a positive and significant influence on both voluntary disclosure of information as well as on information quality. This denotes well the fact that whenever the outside directors' percentage increases by 1%, voluntary

Table 7. Random effect tests

	Dependant variables	
	VDI	**QFI**
χ^2 Test	63.52*** (0.0000)	76.45*** (0.0000)

***Significance at a level lower than 1%.

Table 8. Hausman tests

	Dependant variables	
	VDI	**QFI**
χ^2 Test	4.20*** (0.8979)	1.51*** (0.9971)

***Significance at a level lower than 1%.

Table 9. Regression results

	VDI			QFI		
	Coefficients	***z*-Statistic**	***P* > |z|**	**Coefficients**	***z*-Statistic**	***P* > |z|**
Constant	0.620*	1.96	0.050	0.277***	5.27	0.000
BSIZE	−0.026***	−4.88	0.000	0.005***	5.04	0.000
CEO	−0.069***	−2.98	0.003	0.027***	5.45	0.000
POD	0.121**	2.69	0.007	−0.035***	−4.15	0.000
ACOM	0.198***	4.29	0.000	−0.025**	−1.87	0.061
CONC	−0.047*	−1.89	0.059	0.010**	1.93	0.053
INVI	0.089*	1.77	0.076	−0.092***	−9.48	0.000
BIG	−0.051**	−2.33	0.020	0.160***	3.42	0.001
LEV	−0.040	−0.80	0.426	0.042***	3.28	0.001
FSIZE	−0.005	−0.27	0.785	−0.016***	−5.17	0.000
		N = 224			*N* = 244	
R^2		0.316			0.271	
Prob > χ^2		0.000			0.000	

Notes: VDI: voluntary disclosure index consisting of 83 items p, which takes a value 1 if each item is disclosed, and 0 otherwise; scaled to have a value between 0 and 100%; QFI(DA): the discretionary accruals (DA) (model of Raman and Shahrur (2008)); BSIZE: board activity is measured by the number of meetings of the board of directors; CEO: binary variable coded 1 if there is a duality function of the CEO, 0 otherwise; POD: dividing the number of outside directors with the total number of directors in the board; ACOM: audit committee data will be coded (1) to indicate the existence of audit committee and (0) to indicate the non-existence; CONC: proportions of shares held by the majority of shareholders of the company; INVI: proportions of equities held by institutional investors; LEV: total liabilities to total assets; BIG: dummy variable taking the value 1 when the company is audited by at least one "Big four" and 0 otherwise; FSIEZ: log of firm's total assets.

*Significance at a level lower than 10%.

**Significance at a level lower than 5%.

***Significance at a level lower than 1%.

disclosure would increase by 12%. Such a result can have its justification in the fact that the board success as an internal decision control mechanism may well be further consolidated through appointment of external members, who can provide even higher protection to minority shareholders that do not enjoy the privilege of easy access to information.

Such finding is consistent with that achieved by Chen and Jaggi (2000) and Lim et al. (2007). Yet, it does prove to be compatible with the result reached by Lakhal, which provides no significant relationship between voluntary disclosure and outside directors' percentage in the administration board. Moreover, good financial information quality should be substituted by a high outside directors' percentage. Still, this result corroborates well with the studies conducted by Fama and Fama and Jensen (1983), stating that for the manger to be effectively controlled, the board should be dominated by outside directors.

Concerning the variable, presence of audit committee, which appears to positively affect information transparency, it could be justified by the fact that the existence of a control member in the directors' board, i.e. an independent audit committee, is likely to promote the board effectiveness in controlling the scope of voluntary disclosure. Actually, this finding seems to be consistent with those achieved in the studies elaborated by Ho and Shun Wong (2001), Goodwin and Seow, Arcay and Vasquez, and Barako et al. (2006), as well as those released by Piot and Janin (2007) and Souid and Stepniewski (2010), regarding the French context.

Noteworthy, however, the attained results show that the relationship binding ownership concentration and financial communication transparency prove to be positive. They may be interpreted as follows: in case the capital appears to be concentrated, the majority of shareholders' predominance

will likely degrade the minority of shareholders' interests in accessing information. Such finding is highly likely consistent with Khlifi and Bouri (2007) and Chakroun and Matoussi (2012). It is also in line with the studies conducted by Porta et al. (1998) and Bushman et al. (2004). Reality, a higher quality of published information, is usually used to align the interests among shareholders seeking to promote effectively reliable information.

In turn, institutional ownership proves to be positively associated with financial communication transparency, a result which is clearly consistent with those published by Healy et al., Bushee and Noe and Haniffa and Cooke (2002), underling that firms with high institutional ownership are more willing to voluntarily disclose greater information. This could be justified by the fact that institutional investors are too demanding in terms of information, which positively affects the extent of released information useful for ensuring transparent communication. Similarly, in consistence with Bushman et al. (2004) published studies, it is highlighted that the institutional investors' need for sufficient and satisfactory information quality provides a better chance for minimizing low accounting manipulation practices.

Contrary to our expiations, audit quality is discovered to be negatively associated with the information transparency, which appears to be non-conforming with the presumed predictions. In effect, most previous studies, published results concerning the relationship between the quality auditor and voluntary disclosure of information, are diverse and consistent studies: for with some do actually confirm the existence of a significantly positive relationship, others elaborate work: are led to discover a non-significant.

Within the same framework, our reached result might well have its explanation the fact that some firms are audited by international reputable companies, implementing with a high level of DA undertaking. This finding does actually confirm those published by Bauwhede, relevant to the Belgian context, by Dammak, regarding the Tunisian context, and by Mard, with respect to the French context. In this regard, auditors' inefficiency may be motivated by the maintenance of friendly relations between managers and auditors.

Work highlighting the control variables along with the variable debt levels is negatively associated with financial communication transparency, harmoniously confirming the results reached by Raffournier (1990). Such finding can be justified by the fact that large companies are not interested in being visible vis-à-vis banks and the financial markets, seeing that in case of capital increase decision, they would usually resort to the incorporation of reserves.

To note, the control variable firm size is discovered to be negative and insignificant relative to the voluntary disclosure variable. This result is consistently in line with the result attained by Felo, indicting a negative effect of company size on information voluntary disclosure level. Yet, the relationship between firm size and information quality appears to be significantly positive. A plosive explanation of this finding may well reside in the fact that large firms usually at aim at disclosing reliable and accurate information, likely to help reflect the company's economic reality, in a bid to maintain and safeguard an impressively positive image.

5. Summary and conclusion

The objective targeted throughout the present study lies in demonstrating that whenever intentional governance mechanisms appear to function effectively well, financial communication transparency turns out to be high. Actually, various corporate governance mechanisms have been advanced in the literature as having an effective impact and too influential on financial statements' transparency. Worth mentioning among these mechanisms, one may, for instance, cite the presence of outside directors, board size, separation of the CEO and board chairman function, institutional ownership, presence of an audit committee, as well the fact of being audited by one the Big Four auditors' auditing firms. The achieved results appear to detonate well that the board size, board independence and ownership structure prove to account greatly for the voluntary disclosure level and financial information quality.

This paper has been intended to shed light on the determinants of financial communication transparency with respect to a sample of Tunisian-listed firms observed over the period (2006–2013). In addition, the present work also involves an examination of corporate governance mechanisms' effects on the extent of voluntary disclosure and information quality.

Noteworthy, also, it has been discovered that firms with high ownership concentration, large board size and high debt level turn out to negatively impact financial communication transparency. Indeed, companies including the highest rate of outside directors in the board, presence of an audit committee and high institutional ownership are discovered to enjoy a remarkably noticeable level of voluntary disclosure along with high a financial information quality.

Nevertheless, it's worth highlighting that the study involves certain limitations. Firstly, the study rests on a cross-sectional study with a small sample size. Secondly, only a few corporate governance variables have been applied to investigate voluntary information disclosures within the Tunisian context. As a matter of fact, further prospective research might seem imposed and worth undertaking, which should consider involving more manager characteristics-related corporate governance variables, for instance, age, remuneration, experience, etc. for the purpose of studying the extent of their potential impact on financial communication.

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Note

1. The corporate governance notion was soon to be debated in Tunisia, thanks to the work of the Arab Institute of Entrepreneurs (AIE). A few years later, convinced that governance practices increase the value of the company, AIE, in collaboration with the company's Private International Centre, has set up a project aimed is publishing a guide to governance practices for Tunisian companies. The guide, published in June 2008, aims to make the Tunisian corporate governance system transparent and intelligible.

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