

The impact of financial safety act and corporate governance on the level of financial disclosure

Case of Tunis Stock Exchange firms

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Abstract

Purpose – This research paper aims to identify and measure the contribution of the financial safety act (FSA) regulation in improving the level of financial disclosure of listed Tunisian firms. To answer the problems of the subject, the authors tried to hold accountable several determinants of the level of financial disclosure relating to the particular characteristics of the firm, and the adoption of the recommendations envisaged by the FSA, as likely to have an impact on the level of financial disclosure of Tunisian firms.

Design/methodology/approach – With a sample composed by 20 companies during the period from 2003 to 2010 (160 observations), the contribution of the FSA regulation in improving the level of financial disclosure of listed Tunisian firms was identified and measured. After that, the levels of financial disclosure before and after the FSA were compared.

Findings – The study results confirm the positive and significant effect of the FSA on the level of financial disclosure. This impact seems to appear through the improvement of the disclosure level during the years which follow the adoption of the new regulation. The results of this study also show that firms with a high level of financial disclosure are those which have an independent board of directors, auditor BIG and joint audit.

Originality/value – This paper is devoted to evaluate the impact of the FSA n°2005-96 and corporate governance on the level of financial disclosure. The empirical study relates to a sample of 20 firms listed on the Tunis Stock Exchange observed over the period 2003-2010.

Keywords Corporate governance, Financial disclosure, Financial safety act

Paper type Research paper

1. Introduction

The reducing of financial disclosure asymmetry contributes to the correct operation of the financial markets insofar as it facilitates the allowance of the resources, to adjustment of stakeholder positions, and gives a right of glance on company's policies. During past decades, financial disclosure acquired an increasing importance, at the point of making it an integral part of the large strategy of companies. However, it seems that investors lost confidence on the financial information publicly disclosed in financial statements, caused by the growing number of scandals related to disclosed financial statements not reflecting the financial standing of the company. These scandals, broadly echoed by the press, show large frauds rather than simple handling insofar as the countable principles and rules were often violated (Dumontier, 2003).



Kanodia and Lee (1998) show that the optimal allocations can be obtained as a signaling equilibrium if disclosure decisions are appropriately regulated, and this brings the disciplinary role retained by financial disclosures under debate. To determine measurements necessary for the improvement of the financial disclosure level of Tunisian companies, we refer to several academic research works that examine the determinants of financial disclosure, e.g. Paturel *et al.* (2006) in the UK and France; Lakhali (2005) in France; Xiao *et al.* (2004) in China; Marston and Polei (2004) in Germany; and Ettredge *et al.* (2002) in the USA.

The central argument of this paper is that the appearance of the financial safety act (FSA) regulation imposes on policies of restoring investors' confidence and prevents future failures of corporate governance. Referring to findings of previous research on financial reporting transparency, we will examine the possibility of improving the level of financial disclosure, including the reform on accounting standards.

This paper aims to identify and to measure the contribution of accounting regulation reform on the improvement of the financial disclosure level of listed Tunisian firms. To answer this fundamental question, we tried to hold accountable several determinants of the financial disclosure level relating to firms' characteristics and the adoption of the recommendations envisaged by the FSA.

In what follows, we present the general framework of the research related to the crisis of confidence in financial reporting quality and the contributions of the new regulations in Section 2. We develop hypotheses in Section 3. We describe the methodology in Section 4. We present the descriptive statistics and empirical results in Section 5. Finally, in Section 6, we conclude this study by emphasizing its contribution.

2. Institutional background: accounting regulatory reform in Tunisia, the financial safety act

The Tunisian Government has enacted the Act n°2005-96 in response to the failures released by the council of financial market and some scandals that affected the firms' business (e.g. BATAM [...]). This Act was created to modernize the legislation and for ensuring the market's reaction, by the higher level and transparency of financial disclosure. A tuning fork of regulation was enacted, the Sarbanes-Oxley (SOX) in the USA, the Financial Security Law of France (LSF) in France and the FSA in Tunisia, to introduce enforcement of a variety of corporate governance mechanisms, and that insisted on the strengthening of the disclosure policy and accountability of these mechanisms.

2.1 Strengthening of disclosure policy

The implementation of the FSA regulation requires that the annual report must contain the information laid down, particularly a presentation of financial statements and results, and their evolution and changes in the methods of preparation, as well as elements of the internal audit. Tunisian FSA has created a great pressure to have continuous financial disclosures for Tunisian exchange market listed firms and has set forth substantial penalties for a contravention of the rules enacted.

2.2 Strengthening of the responsibility for the bodies of direction and those of control

2.2.1 Board of directors. According to recent studies (Ploix, 2003; Bradley, 2014), several responsibilities are charged to the Board, which is assumed to fill substantially the gaps in transparency and dissemination of information that reflects the real financial

situation, i.e. all events that may affect the firm's competitive position, turnover or profitability.

In Tunisia, the Board is charged with presenting an annual report at the shareholders' meeting, and it must establish the financial statements of the company under its responsibility.

2.2.2 Reinforcement of the establishment of audit committee. Several recent studies seek to emphasize the role of monitoring compliance with accounting standards as an important element in making the financial reporting regulatory system. The audit committee is among the bodies responsible for monitoring the quality of financial reporting. The legislature has enacted the need for the creation of an audit committee composed of at least three members selected by the board of directors or the supervisory board from among their members, and they cannot be selected by the CEO.

2.2.3 Reinforcement of the independence of the auditors. Reliability and relevance of financial information depend on the quality of audit service; the recent regulatory audit has enacted a set of rules to improve the factors that may affect the independence of the auditor. Among the rules envisaged by the act is the determining condition related to the renewal of mandate and compensation of audit service.

3. Assumption of research

In the USA, the Sarbanes–Oxley (SOX) was enacted in July 2002, whose objective was to overcome the distrust that arose in cases involving CEOs, external auditors and financial analysts (Enron; Moeller *et al.*, 2004). In France, the LSF (2003) was enacted as a response to the crisis of confidence in financial reporting.

In the literature review, several studies have attempted to test the effect of these laws and recommendations on the quality of financial reporting. For example, from a sample of 28 companies listed in both the USA and Canada, Lobo and Zhou (2009) showed a decrease in earnings management after the transition to SOX. For a sample of 7,228 US firms during the period 2001 to 2004, Begley *et al.* (2009) showed an improvement in the quality of financial reporting after the adoption of the SOX, and a decrease in the creation of own private information for investors and financial analysts. The findings of this study led to the idea that the quality of financial disclosure improves after the adoption of the SOX. The FSA in Tunisia, closer to the SOX Act of 2002 in the USA and the FSA of 2003 in France, falls under the logic to fight against financial statement opacity by strengthening of financial reporting transparency.

Financial security act was enacted with the intention to encourage financial disclosure through the strengthening of disclosure policy, responsibilities of Board and the threat of severe sanctions in the case of non-compliance with rules as established by the law. First hypothesis that is tested is as follows:

H1. The FSA of 2005 has a positive association with the financial disclosure level.

Hermalin and Weisbach (2000) qualify the board as “the heart of governance”. Indeed, this control mechanism is charged with representing and defending the interests of shareholders (Fama, 1980). Several criteria were associated to the effectiveness of the control exerted by this mechanism, particularly the size of the board and director's independence. Several authors have highlighted the organization and coordination problems with a Board of large size (Lipton and Lorsch, 1992; Jensen, 1993). Indeed, an

ineffective large-sized Board stems from difficulties in communication and coordination between the Board members.

Several studies have shown that small-sized boards are more effective and generally lead to an improvement in the quality of information disclosed (Klein, 2002a). Therefore, the presence of a large number of directors makes coordination difficult and burdens the decision-making process. Mamoghli and Dhouibi (2009) find a negative effect of size of the board on the extent of voluntary disclosure in Tunisian commercial banks listed during the period 1998-2007. Also, Lakhali (2004) provide that large-sized boards can raise a risk of personal motivation and doubled coordination problems in management decisions. Hence our second hypothesis:

H2. The size of the board of directors has a negative impact on the financial disclosure level.

The British regulatory texts referred more to the term “non-executive directors”. In the USA, an administrator is limited to independence from the executive board; thus, an “independent director” is simply a director who does not have operational responsibilities in the firm (Fama, 1980). Several previous studies find a positive relationship between the proportion of independent directors on the board of directors and the risk of financial fraud (Sweeney *et al.*, 1996). Indeed, the complicity with CEOs can emerge when the board is dominated by inside directors.

The study seeks to identify the importance of board independence as a mechanism to reduce managers’ discretion and opportunism. In this regard, Ploix (2003) shows that the presence of outside directors improves the evaluation of the firm’s performance. In Tunisia, Mezghani and Ellouze (2011), based on a sample of 58 companies (listed and unlisted) observed for two years (2003 and 2004), discuss the impact of certain characteristics of the board of directors on the quality financial reporting. The authors found that the presence of independent directors on the board seems to have a positive impact on the quality of financial reporting. Hence, our hypothesis:

H3. The presence of independent directors in the board of directors has a positive impact on the financial disclosure level.

An audit committee generally works in collaboration with the auditors, to improve the financial disclosure level. The creation of the audit committee, whose role is to control the financial disclosure process and manage relations between the company and external auditor, contributes toward reducing information asymmetry by strengthening the relationship between directors and external auditors. Klein (2002b) noted that the audit committee pressurized CEOs to act in the interest of the company. In Tunisia, the creation of the audit committee has been many attempts to codify the early 1990s. This effort to codify good governance practices has increased after financial scandals that affected Tunisian economy (BATAM case [...]).

Tunisian FSA recommended the establishment of an audit committee in firms that meet conditions set by law decree. Hamrouni and Lakhali (2010) examined a sample of 97 French companies in the SBF 120 index and showed a positive relationship between the existence of an audit committee and financial information quality; the authors confirmed results found by previous studies, such as those of Healy and Palepu (2001) and Mamoghli and Dhouibi (2009). Hypothesis that is tested is as follows:

H4. The existence of an audit committee has a positive impact on the financial disclosure level.

Under agency theory, an external audit was considered as a tool to limit the accounting manipulations of CEOs and reduce agency costs. A competent and independent auditor is able to detect the elements of fraud without being affected by the opportunism of managers. Several studies show that the firm's size is positively associated to the audit service quality (Simunic *et al.*, 2009; Piot and Janin, 2004).

These studies have differentiated the quality auditor, as he belonged to one of the "big eight" (in the 80s) that became "Big Four" today. Piot and Janin (2004) state that content of financial statements certified by the auditors "Big" ensures investor confidence and improves the financial disclosure level. Hence, our hypothesis is:

H5. The membership of the listeners to an international network (BIG-4) has a positive impact on the financial disclosure level.

To reinforce auditors' independence and improve their services, some firms require the existence of a joint audit. In Tunisia, the requirement to charge a joint audit is related to the satisfaction of conditions set by law decree. In addition, to prevent familiarity between auditors and the firm being audited, a systematic rotation of associated individuals in charge of the audit services was introduced by the law n°2005-96. Bennecib (2004) found that a joint audit improves the control of audit profession and thus secures the financial interests of investors. We test the following assumption:

H6. The joint audit has a positive impact on the financial disclosure level.

4. Methodology of research

4.1 The sample

Our initial sample consists of 41 companies listed on the Tunisian Stock Exchange (TSE); we eliminate from the initial sample 21 financial firms (bank and insurance companies) for specific requirements of financial disclosure (Naser *et al.*, 2002). Our sample is composed of 20 companies during the period from 2003 to 2010 (160 observations) (Table I).

4.2 Measurements of the variables

4.2.1 Dependent variable. Several approaches are available to develop a scoring scheme for the measurement of financial disclosure level, and usually both a weighted index and an unweighted disclosure index have been used by researchers.

Table I.
Distribution of the
sample by type of
industry

Industry	Final sample (%)
Consumer goods	4 (20)
Trade	3 (15)
Telecommunication	1 (5)
Industrials	9 (45)
Real estate	1 (5)
Oil and gas	2 (10)
Total	20 (100)

Cooke (1991) and Hossain *et al.* (1994) have adopted a dichotomous procedure in which an item scores 1 if the item is disclosed and 0 otherwise; this approach is conventionally termed the unweighted approach. A checklist of items was prepared, based on information disclosed in annual reports of firms and that adopted by Eng and Mak (2003). To give an adequate spread of scores, there should be sufficient variability of disclosure (Eng and Mak, 2003). This list was further reviewed to ensure that the financial disclosed items are relevant to the financial disclosure level.

It was noted that these authors' findings are based on the index adopted by Lang and Lundholm (1996), arranged by the International Federation of Financial Analysts to give scores to companies according to their degrees of disclosure. In the Tunisian context, the index of disclosure of Eng and Mak (2003) was validated by several studies (Regaieg and Fdhil, 2006).

After establishing the checklist of items, a scoring sheet was developed to assess the financial disclosure level, a score awarded for each item in the voluntary disclosure of the annual reports of companies, and a global measure of disclosure is determined by taking the total points of the index for each company according to the scale set out in the Appendix.

To avoid subjectivity, we consider all disclosed items in the checklist to be of equal importance, despite the fact that information content can vary substantially from one item to another. Then, we assign a value of 1 when a given item is disclosed and 0 otherwise. The level of financial disclosure (DLEVEL) for each company is the unweighted sum of the scores of all the items of the index divided by the maximum possible score.

The method of computing the DLEVEL for each company can be expressed as follows:

$$DLEVEL_{it} = \sum_{i=0}^n \frac{score_{it}}{score\ max}$$

Where:

$DLEVEL_{it}$ = It is the measurement of the financial disclosure level for the firm i for each year t .

$score_{it}$ = It corresponds to the whole of points granted to the firm i for the categories of information.

$score\ max$ = The maximum score was determined by Eng and Mak (2003) to be 84, according to the list of the scale.

4.2.2 Explanatory variables

- *POSTREG*: The variable of interest post-regulation (POSTREG) is measured by a binary variable which takes value of 1 during the period after the change of regulation and value 0 for the period before – the change of regulation (Cohen *et al.*, 2005, 2008; Lobo and Zhou, 2006, 2009; Naser *et al.*, 2002; El-Gazzar *et al.*, 2009).
- *Board of directors*: Three measurements will be considered in our study, namely, size of the board (BSIZE), measured by the number of directors on the board of directors (Yermack, 1996; Adams and Mehran, 2002; Klein, 2002b); the

independent director (OUTSD), several researchers have addressed the influence of the percentage of outside director on the board of directors and they found a positive association between the independence of directors and the level of financial disclosure (Bhagat and Black, 1999); and audit committee (ACOM), measured by a dummy variable equal to 1 if the company has an internal audit committee and 0 otherwise.

- *The external audit:* Two measurements for audit quality will be considered in our study; the audit firm reputation (BIG) is proxied using a binary variable that equals to 1 if the firm's accounts are certified by at least one BIG-4 accounting firm and 0 otherwise. The variable joint audit will be designated by JAUDT, and is measured by a binary variable that takes the value of 1 if the firm is audited by two audit firms and 0 otherwise.

We rely on previous literature and include several control variables from firm characteristics: the firm size, indicated by (FSIZE) measured by the linear logarithm of total assets (Godard, 2002); leverage (DEBT), measured by the ratio (debt with short- and long-term)/(stockholders' equity) (Piot, 2001; Fernandez and Arrondo, 2005); and the profitability of the firm, indicated by (ROA), measured by return on assets (Chen *et al.*, 2006; Ashbaugh-Skaife *et al.*, 2006; Piot, 2001).

The following model summarizes the approach to be adopted to test the assumptions developed above:

$$\begin{aligned} DLEVEL_{it} = & \alpha_0 + \alpha_1 POSTREG_{it} + \alpha_2 BSIZE_{it} + \alpha_3 OUTSD_{it} \\ & + \alpha_4 ACOM_{it} + \alpha_5 BIG_{it} + \alpha_6 JAUDT_{it} + \alpha_7 FSIZE_{it} \\ & + \alpha_8 END_{it} + \alpha_9 ROA_{it} + \epsilon_{it} \end{aligned}$$

Where:

- DLEVEL_{it} = It is the measurement of financial disclosure level for the firm i for each year t.
- POSTREG = Dummy variable takes value of 1 during the period after change of regulation and value 0 for the period before change of regulation.
- BFSIZE = The number of directors on the board.
- OUTSD = Percentage of non-executive directors on the board equals to the number of outside directors to the total number of directors on the board.
- ACOM = Dummy variable equal to 1 if the company has an internal audit committee and 0 otherwise.
- BIG = Dummy variable equal to 1 if auditor is one of the BIG auditing firms and 0 otherwise.
- JAUDT = Dummy variable takes the value of 1 if the firm is audited by two audit firms and 0 otherwise.
- FSIZE = Logarithm of total assets.
- DEBT = The ratio (debt with short and long-term)/(stockholders' equity).
- ROA = The economic profitability (Table II).

Variables	Measurement	Data source	
Financial disclosure level	Level index	Index of disclosure of Eng and Mak (2003)	
Post-regulation	Which takes value 1 during the period post-change of regulation and value 0 for the period pre-change of regulation	–	
SIZE of the board	Measured by the number of directors on the board	Annual report	
The independent director	Percentage of outside director on the board of directors	Annual report	
Audit committee	Variable equal to 1 if the company has an internal audit committee and 0 otherwise	Annual report	
The audit firm reputation	Takes the value of 1 if the firm is audited by a BIG-4 auditor and 0 otherwise	Annual report	
The joint audit	Takes the value of 1 if the firm is audited by two audit firms and 0 otherwise	Annual report	
Leverage	The ratio (debt with short- and long-term)/(stockholders' equity)	Annual report	Table II.
Firm size	The linear logarithm of total assets	Annual report	Variable
Firm profitability	Return on assets	Annual report	measurement and data source

5. Results and discussion

A first look at the values of variables used in the Panel A of [Table III](#) shows an average board size of 7.92, with a maximum of 12 members (the maximum number of directors serving in the board of directors that can be acceptable under Tunisian law) and with presence of high proportion of independent directors on the board, representing 48 per cent of the total number of members.

Most of the companies (mean value of 40 per cent) have created audit committees after the enactment of SFA 2005, which mandates the creation of an audit committee of listed companies satisfying the requirements. With regard to external auditing, we find that 39 per cent of the sample firms were not audited by a BIG-4 accounting firm, and 42.5 per cent of them have nominated joint auditors.

In Panel B, preliminary data analysis presents a test to check the absence of a multicollinearity problem between the variables. In fact, examining the matrix of Pearson correlation shows that no critical correlation can be identified from this table, including independent variables. Indeed, according to [Farrar and Glauber \(1967\)](#), a serious problem of collinearity between the independent variables included in the model is verified with a correlation coefficients reach 0.8 or 0.9. We thus apply the multivariate regressions to our model without fearing the existence of a serious multicollinearity problem between the exogenous variables included.

Panel A of [Table IV](#) presents the dispersion of disclosure level of our overall sample in the pre-reform and post-reform periods. The findings reported in Panel A show that the reform is associated with an increase in the mean and median of financial disclosure level; indeed, 74 of 100 observations of the post-reform period have a disclosure level higher than the median of the global sample, and just six observations that belong to the pre-reform period have values greater than the disclosure level median of the overall sample.

Variable	Mean	SD	Minimum	Maximum					
<i>Panel A: Descriptive statistics</i>									
DLEVEL	0.41	0.0765695	0.26	0.62					
POSTREG	0.625	0.4856429	0	1					
BSIZE	7.91875	1.922956	5	12					
OUTSD	0.4800146	0.1873898	0	0.857					
ACOM	0.4	0.4914361	0	1					
BIG	0.39375	0.4901145	0	1					
JAUDT	0.425	0.4958951	0	1					
FSIZE	7.696304	0.4511928	6.06	8.49					
DEBT	0.5256718	0.1763937	0.21	0.8812072					
ROA	0.0860235	0.1037741	-0.31	0.61					
	POSTREG	BSIZE	OUTSD	ACOM	BIG	JAUDT	FSIZE	DEBT	ROA
<i>Panel B: Correlation matrix</i>									
POSTREG	1.00								
BSIZE	0.09	1.00							
OUTSD	0.02	0.09	1.00						
ACOM	0.55	0.17	0.09	1.00					
BIG	0.47	0.27	-0.05	0.54	1.00				
JAUDT	0.35	0.19	0.012	0.49	0.58	1.00			
FSIZE	0.18	-0.08	-0.03	0.11	0.14	0.17	1.00		
DEBT	-0.16	-0.19	-0.14	-0.02	-0.05	0.02	0.03	1.00	
ROA	0.28	0.19	-0.021	0.17	0.24	0.25	0.06	-0.27	1.00

Notes: This table presents descriptive statistics for sample firms (dependent, independent and control). Panel A reports the frequency of dependent and independent variables DLEVEL measured by total of items for this company/maximum possible of items disclosed by this company, POSTREG: dummy variable takes value 1 during the period post-change of regulation and value 0 for the period pre-change of regulation; BSIZE: number of directors on the board; OUTSD: percentage of non-executive directors on the board equal to the number of outside directors to the total number of directors on the board; ACOM: dummy variable equal to 1 if the company has an internal audit committee and 0 otherwise; BIG: dummy variable 1 if auditor is one of the BIG auditing firms, 0 otherwise; JAUDT: dummy variable takes the value 1 if the firm is audited by two audit firms, 0 otherwise; FSIZE: logarithm of total assets; DEBT: (debt with short- and long-term)/(stockholders' equity); ROA: the economic profitability. Panel B presents coefficient of correlation between independent variables, where *, ** and *** indicate significance at the 0.01, 0.05 and 0.10 levels, respectively

Table III.
Summary statistics
for the financial
disclosure level

The results of our study are consistent with those found in previous studies and support the hypotheses previously issued. Indeed, the adoption of the FSA has a positive association with the financial disclosure level of Tunisian listed firms. In addition, our results corroborate with previous research that proves the positive effect of SOX in the US context (Ewert and Wagenhofer, 2005; Begley *et al.*, 2009). Indeed, the coefficient associated to the variable POSTREG $T = 5.40$ with a significance level of 1 per cent is consistent with the first assumption.

There is some evidence of a significant improvement in the disclosure level associated to significant evolution in explanatory variables during the post-reform period. These evolutions are primarily driven by the important changes introduced by the adoption of the FSA regulation in Tunisia, particularly the improvement mainly

	No. of observation		Pre-reform				Post-reform			
<i>Panel A: Greater than the median</i>										
No	80		54				26			
Yes	80		6				74			
	DLLEVEL	BSIZE	OUTSD	ACOM	BIG	JAUDT	FSIZE	DEBT	ROA	
<i>Panel B: Result of comparison means; two-sample T test with equal variances</i>										
Pre-reform	0.347	7.7	0.4747	0.05	0.1	0.2	7.5901	0.5614	0.0481	
Post-reform	0.4478	8.05	0.4831	0.61	0.57	0.56	7.7600	0.5042	0.1088	
difference	0.1008	-0.35	-0.0083	-0.56	-0.47	-0.36	-0.1698	0.0571	-0.0606	
T	-10.4510	-1.1154	-0.272	-8.3515	-6.6151	-4.7357	-2.3381	2.004	-3.7198	
p-value	0.0000*	0.2664	0.7854	0.0000*	0.0000*	0.0000*	0.0206**	0.0468**	0.0003*	
F	0.9338	1.0969	1.0713	0.2010	0.3697	0.6538	1.0605	1.0180	0.7925	
p-value	0.7847	0.6763	0.7523	0.0000	0.0001	0.0778	0.7857	0.9234	0.3339	

Notes: Table III presents the greater than the median for the dependent variable from the pre-reform and the post-reform periods, and the results of the comparison means of the dependent variable DLEVEL measured by total of items for this company/maximum possible of items disclosed by this company, and independents variables POSTREG: dummy variable takes value 1 during the period post-change of regulation and value 0 for the period pre-change of regulation; BSIZE: number of directors on the board; OUTSD: percentage of non-executive directors on the board equal to the number of outside directors to the total number of directors on the board; ACOM: dummy variable equal to 1 if the company has an internal audit committee and 0 otherwise; BIG: dummy variable 1 if auditor is one of the big auditing firms, 0 otherwise; JAUDT: dummy variable takes the value 1 if the firm is audited by two audit firms, 0 otherwise; FSIZE: logarithm of total assets; DEBT: (debt with short- and long-term)/(stockholders' equity); ROA: the economic profitability; *, ** and *** indicate significance at the 0.01, 0.05 and 0.10 levels, respectively

Table IV. Summary statistics for disclosure level dispersion and result of comparison means

affected the variable of interest DLEVEL and many independents variables; ACOM, BIG, JAUDT and ROA at a significance level of 0.01, and FSIZE and DEBT at a significance level of 0.05.

In the remaining section, we will conduct a multivariate analysis taking into account the simultaneous effect of all variables. The results show a significant explanatory power of the model ($R^2 = 0.5883$), and we found that 58.83 per cent of the variation in the dependent variable is explained by the explanatory variables; this significance was also proved by Fisher's statistics with a value of $F = 23.81$ at 0.01 level of significance.

Eventually, study findings showed there is no significant relationship between the level of financial disclosure and the board size, and this result is contrary to that expected and inconsistent with the theoretical statements, despite the negative effect on the financial disclosure level ($T = -1.62$ and $p = 0.107$). Yermack (1996) recommends to keep a reduced board size because it is more efficient. In fact, the difficulties of coordination between the members of the boards with large sizes make the process of decision-making heavier, which will give opportunity for executives to behave opportunistically. In the same context, Loukil and Triki (2008) also reached the opposite result in the assumptions and claimed that the size of the board has a positive effect on the level of disclosure in the annual reports of Tunisian firms.

As could be expected, the results show that the coefficient related to the presence of independent directors in the board supports the hypothesis expected. Indeed, the statistics $T = 1.76$ with a level of significance $p = 0.080$ was reported to support the

results of previous studies that have proven that a high proportion of independent directors on the board improves the quality/extent of financial reporting (Jaggi and Low, 2000). Contrary to the assumption that stimulates a positive association between the creation of an audit committee and financial disclosure level of Tunisian companies, we find a positive sign but no significant effect ($T = 1.37$ and $p = 0.172$).

This analysis shows that there is a statistically significant coefficient concerning the variable "BIG"; in fact, the findings in Table III confirm the expected hypothesis and the results of previous studies (Piot and Janin, 2004), and show that the membership of an international network auditors (BIG) has a positive impact on the financial disclosure level ($T = 2.41$) at 5 per cent level of significance, $p = 0.017$.

As observed by Benneceb (2004), Table V demonstrates that there is a positive association between a joint audit and the securing of investors' interests that can improve the level of financial disclosure. In fact, the coefficient associated to the variable joint audit shows a significant effect on the level of financial disclosure of companies in our sample ($T = 3.20$ and $p = 0.002$).

Concerning the control variables, the generated results show a positive relationship between firm size and financial return and the level of financial disclosure in annual reports, where their coefficients are $T = 2.47$ and $p = 0.015$ and $T = 1.33$ and $p = 0.185$, respectively. These results imply that these variables contribute to improve the level of financial disclosure of listed Tunisian firms and encourage managers to frequently provide more transparent information. A sign conforming to the expected level of leverage, the most indebted companies have less cash considering the debt repayment ($T = -2.67$ and $p = 0.009$). Our result supported the sign expected, firms with high level of debt rely on less disclosure because they cannot cover their costs exclusively (Cormier *et al.*, 2004).

6. Conclusion

In this study, we investigated the financial disclosure level of firms listed on the TSE in the pre-reform and post-reform FSA. First, we found evidence that identify an

Variables	Predicted sign	Coefficient	Standard error	<i>t</i>	<i>p</i> > <i>t</i>
POSTREG	+	0.0573637	0.0106266	5.40	0.000*
BSIZE	-	-0.0036464	0.0022459	-1.62	0.107
OUTSD	+	0.0388117	0.0220414	1.76	0.080***
ACOM	+	0.0151847	0.0110549	1.37	0.172
BIG	+	0.0272997	0.0113077	2.41	0.017**
JAUDT	+	0.0333665	0.0104341	3.20	0.002*
FSIZE	+	0.0226281	0.0091792	2.47	0.015**
DEBT	-	-0.065522	0.0245774	-2.67	0.009*
ROA	+	0.0569146	0.0427397	1.33	0.185
R^2	0.5883				
Adjusted R^2	0.5636				
$F(9,150)$	23.81				
Prob > F	0.0000				

Table V.

Results of regression **Note:** *, ** and *** indicate significance at the 0.01, 0.05 and 0.10 levels, respectively

improvement in the level of financial disclosure due to the adoption of FSA measurement of corporate governance strengthening. Then, the results supported a positive relationship expected between the level of independent directors in the board, auditor BIG and the presence of a joint audit and level of financial disclosure.

The principal results can provide that the financial disclosure level has improved after the implementation of rules enacted by the FSA. Finally, our results show that firms that have a high level of debt or board size ownership suffer from a low level of disclosure or even opacity of financial reporting. Our study led to the following results: the new rules of governance introduced by the FSA seem to have achieved the desired objective, namely, to strengthen the level of financial reporting of Tunisian firms. This study allows us to see that the regulations could be a solution during crisis situations, either by the strength of its binding arrangements or by the effect of the circumstances surrounding its adoption. Like any research task, this one presents some limitations.

While the method of content analysis is used to analyze large volumes of data, and to compare the results generated, it suffers from a lack of standardization due to the subjectivity of the process followed to measure the financial disclosure level. The sample comprises the firms dimensioned with the TSE that have more strongly reacted to the new regulations and which have, especially, agreed to obey the FSA provisions. But we think that a study of the effectiveness of a regulation and even of a whole of standards in a given context should take account of political and legal social specificities of each country's economy.

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Further reading

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	Score
(S) Strategic information	
(S-1) General corporate information: Score	
Brief history of company	
Organizational structure/chart	
General description of business/activities	
Principal products	
Principal markets	
(S-2) Corporate strategy: Score	
Statement of corporate goals or objectives	
Current strategy	
Impact of strategy on current results	
Future strategy	
Impact of strategy on future results	
(N) Key non-financial information	
(F) Financial information	
(S-3) Management discussion and analysis: Score	
Review of operations	
Competitive environment	
Significant events of the year	
Change in sales/profits	
Change in cost of goods sold	
Change in expenses	
Change in inventory level	
Change in market share	
(S-4) Future prospects: Score	
New developments	
Forecast of sales/profit	
Assumptions underlying the forecast	
Order book or backlog information	
(S-5) Other useful strategic information: Score	
Sub-total (A)	
(N-1) Employee information: Score	
Number of employees	
Compensation per employee	
Value-added per employee	
Productivity indicator	
(N-2) Other useful non-financial disclosure: Score	
Sub-total (B)	
(F-1) Performance indicators (not from financial statements): Score	
Historical figures for last five years or more (or as long as company's formation)	
Turnover	
Profit	
Shareholders_ funds	
Total assets	
Earnings per share	

Table AI.
List of items used to
evaluate the financial
disclosure level

(continued)

(S) Strategic information

Score

Impact of
financial
safety act

(F-2) Financial ratios: Score

Return on shareholders_ funds (ROA) 1

Return on assets

Gearing ratio

Liquidity ratio

Other useful ratios:

(F-3) Projected information: Score

Cash flow forecast

Capital expenditures and/or R&D expenditures forecast

Earnings forecast

(F-4) Foreign currency information: Score

Impact of foreign exchange fluctuations on current results

Foreign currency exposure management description

Major exchange rates used in the accounts

(F-5) Other useful financial information: Score

Sub-total (C)

Total (Company DScore)

633

Note: The disclosure score sheet was previously published in Eng and Teo (1999) and Eng *et al.* (2001)

Table AI.

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