Societal Information Disclosure and The Cost of Equity: The Case of Tunisian Companies

By Marjène Rabah Gana, Mejda Dakhlaoui

Lille School of Management Research Center

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Marjène RABAH GANA\textsuperscript{α}, Mejda DAKHLAOUI\textsuperscript{Ω}

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1. Introduction

The notion of sustainable development or corporate social responsibility integrates the social dimension and the environmental responsibility into the current management of the firm. The consideration of the societal dimension (social and environmental engagement of the firm) makes the firm voluntarily more attentive to the satisfaction and to the realization of the well-being of all its partners rather than to its profit maximization. The commitment of the company in such a strategy fits within the good practices of corporate governance, because it allows the firm to gain in legitimacy and to enhance its economic growth. Therefore, responding to the needs of customers, paying the suppliers in short deadlines, creating jobs, respecting the rights of the workers, assuring a good working atmosphere, reducing the polluting emissions fit within the corporate societal responsibility of the company (CSR) and help it to reach performance and sustainability. The theory of legitimacy explains the CSR behavior. This theory was initially advanced by Hogner (1982) who concludes that the publication of social information is a response to the society’s expectations on corporate behavior. Therefore firms respect their social contracts with stakeholders. The company, while pursuing its economic objectives, must justify its activities and its consequences otherwise it might see its contract breaking (Savage et al., 1999). According to Cormier et al. (2001), the extent of societal disclosure differs from one country to another according to legal, socio-political, cultural and financial constraints. Therefore, it seems interesting to study the societal dimension that characterizes firms operating in an emerging market, such as Tunisia. Our goal is twofold: on one hand, to identify the profile of Tunisian firms that disclose more societal information and on the other hand, to understand how the disclosure of this information affects the cost of accessing to the capital market. The Tunisian accounting system is based on standards consistent with those of the International Accounting Standards Board without giving details about information to provide in the management report. But, the conceptual framework of the Tunisian accounting system states that other financial and non-financial information, whose publication is likely to make information more useful, could be communicated. The annual report guide of the Tunisian firms established by the Arab Institute of Business Managers expects that the firm should include in its annual report a section describing the social and environmental data and the actions taken about societal responsibility. The rest of the article is organized as follows. The next two sections present the theoretical settings and some empirical results concerning the societal disclosure determinants and its impact on the cost of capital. Section 4 presents the data and the methodology followed by the discussion of the results, in section 5. Finally, we conclude in section 6.

II. Societal Disclosure Determinants

The empirical researches show several determinants of the societal information disclosure behavior. According to Patten (1991), societal disclosure is higher in sensitive industries. Industrial firms with an environmental impact such as those in the mining and oil extraction, voluntarily choose to provide environmental information in order to reassure stakeholders and to cope with threats posed by non-compliance with regulations. Kolk et al. (2001) note a significant difference in the behavior of financial institutions and other firms. Other studies emphasize...
that the societal disclosure behavior depends on the type of corporate ownership. In this regard, the study of Cormier and Gordon (2001) concludes that public companies disclose more social and environmental information than private firms, since they face greater pressures from their partners. Cormier and Magnan (1999, 2003) and Ben Rhouma and Cormier (2007) find a positive relationship between firm size and the effort that it provides in social communication. Larger firms are subject to most important external pressures and must thus disclose much non-financial information to reassure their partners. Lang and Lundholm (1993) add that the voluntary disclosure of information is greater in larger companies, given the economies of scale in the production costs of such information.

The tendency of companies to disclose societal information also depends on their capital requirements. Thus, Cormier and Magnan (1999) show that the access to capital is facilitated by social and environmental commitment and disclosure of the company. They emphasize that a high level of debt leads firms to disclose less non-financial information. However, Richardson and Welker (2001) find a positive relationship between leverage and societal disclosure index. Roberts (1992) and Leftwich et al. (1981) consider that debt encourages the company to disclose societal information in order to satisfy the expectations of its creditors and facilitate the monitoring and control of its managers. Cormier and Magnan (1999) also argue that firms whose return on assets is high disclose more environmental information, because they have more resources.

In addition, the literature looks at the relationship between ownership structure and disclosure level. Referring to the agency theory, companies with dispersed capital undergo higher agency costs. The disclosure of financial or non-financial information is then presented as a mechanism to limit these costs. Empirical studies show a positive relationship between the dispersion of ownership and information disclosure. Chau and Gray (2002) find this relationship in Hong Kong and Singapore. Makhija and Patton (2004) find the same result on the Czech market. The work of Ben Rhouma and Cormier (2007) interested in studying the effects of board characteristics and ownership concentration on societal communication of French listed companies concludes that the independence of the board positively affects societal reporting. However, a negative relationship is identified between the ownership concentration and the societal disclosure index.

### III. Impact Of Societal Disclosure On The Cost Of Capital

According to the positive accounting theory and the contractual theories of the firm\(^1\), the firm is considered as a nexus of contracts. From this perspective, the societal disclosure would reduce contract costs. It reduces the information asymmetry between the different partners of the company. This indirectly contributes to lower its financing costs (Core, 2001). Fombrun et al. (2000) underline that firms engaged in CSR vision can negotiate their contracts with their partners on better terms, allowing them to reduce their cost of capital. These companies invest in reputational capital, strengthen their competitive advantage and minimize the risks from the alienation of key stakeholders. Verrecchia (1990) cites the signaling theory to explain the voluntary disclosure behavior of firms. The hope of legitimizing the activities of firms is interpreted as a positive signal that maximizes the value of the firm and minimizes its cost of capital.

According to Haggard et al. (2008), the disclosure of specific private information could however make the firm lose its competitive advantage as the societal strategies undertaken by the company may be imitated by its competitors. Therefore, the societal commitment of the company is perceived as an additional cost. This idea is also the translation of the liberal neoclassical economists’ view, according to which managers must act in the only purpose of maximizing shareholders wealth (Friedman, 1970). The company’s CSR commitment is in this sense, viewed as a cost that reduces shareholders wealth. The economic analysis of the competitive market defends, for its part, the absence of any relationship between financial indicators and CSR. Indeed, the laws of general equilibrium make the profits generated by the societal commitment of the company neutralized by its costs (McWilliams and Siegel, 2001).

According to Ullmann (1985), the relationship between CSR and financial performance is complex and the existence of any relationship between these two variables is fortuitous. According to Barnett and Salomon (2006), this relationship is nonlinear. Most of the empirical studies demonstrate a positive relationship between information disclosure and financial performance and a negative relationship with the cost of capital (Botosan, 1997; Botosan and Plummer, 2002; Graham et al., 2005). Such a firm attracts more the attention of financial analysts as it provide them specific information which enables them to reduce the cost of collecting and treating the information and hence minimize the firm information asymmetry. More recently, the results of Cormier et al. (2009) show information disclosure concerning the social capital of Canadian companies reduces information asymmetry. Richardson and Welker (2001) test the relationship between the cost

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\(^1\) These consist of the instrumental theory of stakeholders (Donaldson and Preston, 1995) and the agency theory (Jensen and Meckling, 1976).
of equity and social and environmental disclosure for a sample of Canadian firms. They find, however, a significant positive relationship between the level of societal disclosure and the cost of equity. They attribute their result to the problem of endogeneity between disclosure and firm characteristics which wasn’t taken into consideration. Other authors, like Seifert et al. (2003, 2004), don’t find any significant relationship.

**IV. Data and Methodology**

*a) Data*

In order to collect societal information disclosed by Tunisian companies, we use their annual reports. We choose to collect the information disclosed on a period from 2001 to 2005. The study is based on a sample of 36 Tunisian companies listed on the Tunis Stock Exchange and operating in different sectors. The accounting information and the governance characteristics are collected from reports and financial statements available on the website of the Tunis Stock Exchange, on the websites of companies, from the financial market council and from brokerage firms.

*b) Disclosure score measure*

Based on the analysis of the content of annual reports, we calculate for each firm and for each year a societal information disclosure score. We refer to the items describing societal disclosure as they appear in the study of Richardson and Welker (2001). The authors identify ten categories of societal information, those concerning human resources, products, services and consumers, community, environment, energy resources, government, suppliers, shareholders, competitors and a category for miscellaneous items. A value of 1, 2 or 3 is given to each item:

- Value = 1 if the information is not disclosed,
- Value = 2 if the information is described briefly,
- Value = 3 if the information is disclosed in details and is quantified.

The societal disclosure score, noted $\text{SCORE}_{i,t}$, is calculated as the ratio between the overall disclosure score and the maximum disclosure score in our sample. This method is inspired from Botosan (1997).

The ratio is specified as follows:

$$\text{SCORE}_{i,t} = \frac{\sum_{j=1}^{10} X^i_{j,t}}{\sum_{j=1}^{10} X^i_{j,t}}$$

Where $X^i_{j,t}$ is the value given to the item $j$ in the year $t$ for the firm $i$.

2 We have based our choice of these 36 firms on data availability.

3 The miscellaneous category includes any other type of societal information such as the relationship with the companies of the group, the information system or the score given by rating agencies.

4 The maximum score of disclosure is 25.

**c) Explanatory variables**

The explanatory variables and the expected relations based on the previous developed theory are next presented. They are defined as follows:

- **Ownership status (STAT):** This variable defines whether the ownership of the company is private or public. It is measured by a dummy variable taking the value 1 when the Tunisian government is a majority shareholder and 0 otherwise. In concordance with the results of Cormier and Gordon (2001), a positive relationship is expected.

- **The size (SIZE):** Following Chalmers and Godfrey (2004), it is measured by the natural logarithm of accounting assets. It is supposed to be positively associated with societal disclosure index (Branco and Rodrigues, 2008).

- **The firm’s type (TYPE):** This variable distinguishes between financial and non-financial companies. Based on the results of the studies of Kolk et al. (2001) and Peeters (2003), we expect that non-financial firms disclose more information about societal issues. This variable therefore takes the value 1 if the firm has a non-financial activity and 0 otherwise.

- **Financial performance (ROE):** We measure financial performance by the return on equity calculated as the ratio between net profit and book value of equity. Cormier and Gordon (2001) document a negative relationship between ROE and societal disclosure.

- **Leverage (LEV):** We measure leverage by the debt to equity ratio. While studies of Cormier and Magnan (1999) and Oxbay (2003, 2009) find a negative relationship, Roberts (1992) and Richardsson and Welker (2001) point out a positive relationship.

- **Ownership concentration (OWNC):** According to the study of Roberts (1992), this variable is measured by the percentage of shares owned by investors holding 5% or more of the shares. The findings of Ho and Wong (2001) and Ben Rhouma and Cormier (2007) lead us to suppose that the more the ownership of the company is dispersed, the more it discloses information related to its societal commitment.

**d) Models**

We present the following regression models which allow us, first, to analyze the determinants of societal disclosure (model 2) and, second, to study the relationship between the disclosure level and the cost of equity (models 3 and 5).

The first model is expressed as follows:

$$\text{SCORE}_{i,t} = a_0 + a_1 \text{STAT}_{i,t} + a_2 \text{SIZE}_{i,t} + a_3 \text{TYPE}_{i,t} + a_4 \text{ROE}_{i,t} + a_5 \text{LEV}_{i,t} + a_6 \text{OWNC}_{i,t} + \mu_{i,t}$$

$\mu_{i,t}$
The index $i$ represents the firm and $t$ indicates the year. The $a_i (i = 1, \ldots, 6)$ are the coefficients of the explanatory variables of the societal disclosure score. 

The explanatory variables are defined above. $\mu$ is the residual term.

In order to test empirically the relationship between societal disclosure score and the cost of equity (COE), we estimate the following model:

$$ COE_{it+1} = x_0 + x_1 \text{SCORE}_{it} + \pi_{it} $$

(3)

$\pi$ is the residual term.

The cost of equity of each firm $i$ in year $t$ is calculated from the Gordon-Shapiro (1956) model:

$$ COE_{it} = D_{it+1}/V_{it} + g $$

(4)

Where:

$COE_{it}$: the cost of equity of the firm $i$ in $t$.

$D_{it+1}$: the dividend paid by the firm $i$ in $t+1$.

$V_{it}$: the market value of the share of the firm $i$ in $t$.

$g$: the growth rate of the dividend yield estimated as the dividend growth over the previous year.

Model (3) tests the impact of the societal disclosure score on the cost of equity. In order to have unbiased estimators, the hypothesis of the exogeneity of the variable SCORE is examined through the test of Nakamura Nakamura5.

Finally, and similar to Barnett and Salomon (2006), we test the presence of a potential nonlinear relationship between the cost of capital and the societal disclosure score, using the following quadratic regression model:

$$ COE_{it} = x_0 + x_1 \text{SCORE}_{it} + x_2 (\text{SCORE}_{it})^2 + \pi_{it} $$

(5)

Where $\text{SCORE}^2$ is the square of the variable SCORE and $\pi$ is the residual term.

The regression model (2) is estimated on panel data, assuming the individual effect is random. Regression models (3) and (5) are estimated using ordinary least squares method on pooled data, since the hypothesis of the absence of individual effects is accepted.

V. RESULTS AND DISCUSSION

a) Descriptive analysis

In order to test the reliability of our disclosure score, we calculate the Cronbach’s alpha. This coefficient reflects the internal consistency of the index. The score of societal disclosure has a Cronbach alpha of 0.6 which is within the interval of limit values. Table 1 shows some descriptive statistics of quantitative and qualitative variables used in our study.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCORE</td>
<td>0.76</td>
<td>0.09</td>
<td>0.52</td>
<td>1</td>
</tr>
<tr>
<td>COE</td>
<td>0.09</td>
<td>0.18</td>
<td>0.00</td>
<td>1.59</td>
</tr>
<tr>
<td>SIZE</td>
<td>18.78</td>
<td>1.75</td>
<td>16.32</td>
<td>22.2</td>
</tr>
<tr>
<td>ROE</td>
<td>0.02</td>
<td>0.93</td>
<td>-12.2</td>
<td>1.69</td>
</tr>
<tr>
<td>LEV</td>
<td>1.102</td>
<td>1.86</td>
<td>-8.48</td>
<td>17.26</td>
</tr>
<tr>
<td>OWNC</td>
<td>0.84</td>
<td>0.17</td>
<td>0.25</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 1: Descriptive statistics

Panel a: Descriptive statistics of quantitative variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT</td>
<td>0</td>
<td>79</td>
<td>43.89</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>101</td>
<td>56.11</td>
</tr>
<tr>
<td>TYPE</td>
<td>0</td>
<td>70</td>
<td>38.89</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>110</td>
<td>61.11</td>
</tr>
</tbody>
</table>

STAT = dummy variable equals 1 if the government is a majority shareholder in the firm; TYPE = dummy variable equals 1 if the company has a non-financial activity.

The examination of descriptive statistics in panel a’ shows that the average score of societal disclosure is 0.76 with a standard deviation of 0.09. We also note that on average 85% of shares are held by investors possessing 5% or more of the firm’s shares. Finally, Tunisian firms in our sample show an average cost of equity of 9% with a standard deviation of 0.18. Companies seem to have further differences in their size and financial leverage. Panel ‘b’ presents the descriptive statistics of the qualitative variables. The results show that 56% of companies in our sample are public and 61% are non-financial businesses. These two variables can influence the disclosure practices of societal information.

It is also relevant to examine the evolution of the score over time. The examination of the results of table 2 shows that the societal disclosure score has slightly improved over the years. It moved from 0.72 in 2001 to 0.79 in 2005.

For more details, refer to Kpodar (2007).
Table 2: Disclosure score evolution

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>0.72</td>
<td>0.094</td>
</tr>
<tr>
<td>2002</td>
<td>0.74</td>
<td>0.089</td>
</tr>
<tr>
<td>2003</td>
<td>0.76</td>
<td>0.094</td>
</tr>
<tr>
<td>2004</td>
<td>0.78</td>
<td>0.083</td>
</tr>
<tr>
<td>2005</td>
<td>0.79</td>
<td>0.084</td>
</tr>
</tbody>
</table>

**SCORE** = societal information disclosure measure.

b) Determinants of the societal disclosure score

We try, in the following, to identify the determinants of corporate societal disclosure of Tunisian companies by estimating the equation (2)\(^6\).

The results presented in table 3 show that only SIZE and TYPE variables are significant. Specifically, it seems that larger and non-financial firms disclose more societal information. The size effect confirms the results of Branco and Rodrigues (2008). Larger companies, being subject to greater external pressures and harder regulation, need to disclose social and environmental information to reassure their partners and to legitimize their activities. Regarding the sector effect, it confirms the conclusions reached by Kolk et al. (2001) and Peeters (2003). Tunisian banks seem to disclose less societal information, presumably because they give more importance to communicate about financial risks in comparison to social and environmental risks.

STAT = dummy variable equals 1 if the government is a majority shareholder in the firm; SIZE = natural logarithm of accounting assets; TYPE = dummy variable equals 1 if the company has a non-financial activity; ROE = return on equity; LEV = debt to equity ratio; OWNC = the percentage of shares owned by investors holding 5% or more of the shares. *** Significant at 1%.

c) Relationship between societal disclosure score and cost of equity

In order to determine the relationship between the disclosure of societal information and the cost of equity in the Tunisian context, we present and interpret hereafter the results obtained from models (3) and (5) estimations.

Table 4: Effect of disclosure on the cost of equity

<table>
<thead>
<tr>
<th>Panel a: Linear relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Coefficient</td>
</tr>
<tr>
<td>t-Student</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel b: Nonlinear relationship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Coefficient</td>
</tr>
<tr>
<td>t-Student</td>
</tr>
</tbody>
</table>

**SCORE** = societal information disclosure measure.

* significant at 10%.

Before testing the regression model (3), we verified the exogeneity of the variable **SCORE** according to the approach of Nakamura Nakamura\(^7\). The results obtained from estimating regression model (3) are represented in panel ‘a’ of table 4. They show a positive relationship between societal commitment of the firm and its future cost of capital. This relationship is not significant. We recall the finding of McWilliams and Siegel (2001) which formulates the hypothesis of a competitive market according to which general equilibrium laws of the market cancel the costs and benefits generated by CSR commitment to explain the absence of any relationship between societal disclosure score and the cost of equity. Other authors such as Ullmann (1985) and Barnett and Salomon (2006) explain this result by the complexity of the relationship between the two variables mentioned above. That’s why we try to test the nonlinear form of equation (3). The results

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\(^6\) We check the absence of any problem of multicollinearity between the explanatory variables by calculating the VIF coefficients.

\(^7\) These results are available upon request. They support the hypothesis of exogeneity of the variable **SCORE**.
presented in panel ‘b’ of table 4 show a significant nonlinear relationship between COE_{t+1} and SCORE. The relationship is negative in a first time and positive in a second time. The coefficients related to SCORE and SCORE^2 are respectively negative and positive and are significantly different from zero at 10% level. To sum up, it seems from the above analysis that the societal disclosure significantly affects the company’s future cost of capital. Specifically, the relationship between these two variables is nonlinear. A low level of societal disclosure is sufficient to reduce the future cost of capital of the firm as it makes it more credible and enhances its reputation in an environment where overall societal commitment is not embedded in the culture of Tunisian companies. This allows the company to legitimize its behavior and to reassure its partners, which makes it enjoy a lower cost of equity. However, for a high level of disclosure, societal disclosure positively affects the future cost of equity. This can be explained by the fact that an important societal commitment generates high costs that reduce shareholders wealth. The companies which are more generous in terms of societal disclosure could also correspond to companies that are not really committed to the CSR approach.

VI. Conclusion

This research aims to analyze the determinants of the behavior of Tunisian companies regarding the disclosure of societal information and to understand the effect of their societal commitment on their cost of equity. The study, conducted on a sample of 36 companies listed on Tunisian stock exchange over the period 2001 to 2005, highlights an average disclosure score of 76% which has slightly improved over the years.

In addition, two variables stand out as possibly explaining the propensity of Tunisian companies to disclose social and environmental information. These variables are the firms size and their activity sector. Specifically, large companies and those involved in sectors other than the financial one, have a high score of societal disclosure. Moreover, the current societal disclosure of the company influences significantly its future cost of capital. More precisely, the relationship between these two variables is nonlinear. A low level of societal disclosure is sufficient to reduce the cost of capital of the company, while for a high level of disclosure, the future cost of capital increases. Our study presents some contributions. First, it participates to the discussion on CSR and is among the few studies having addressed this issue in the Tunisian context. The significant nonlinear relationship found between the disclosure score and the future cost of equity should be reflected sometimes in a discount and sometimes in a premium in the shareholders required return. This is, in our view, the major practical contribution of our study.

This research has some limits, including small size and short horizon. It has considered the social and environmental information disclosed only in annual reports, while other reporting media are used by companies such as websites and the press. Other variables that can explain the societal process of the company could be used as well as other methods of calculating the future cost of equity. Finally, the technique of piecewise regression might improve the scope of the results of this study because it can identify precisely the threshold effect. All these limits could lead to possible future research.

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