

THE EFFECT OF VOLUNTARY DISCLOSURE QUALITY ON TUNISIAN STOCK RETURN VOLATILITY: THE MODERATING ROLE OF OWNERSHIP STRUCTURE

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ABSTRACT

In this article, we investigate the moderating role of ownership structure on the relationship between the quality of voluntary financial disclosure and share price volatility of non-financial companies listed on the Tunis Stock Exchange. The sample of 411 annual reports of non-financial companies listed on the Tunis Stock Exchange is studied and analyzed from 2010 to 2019. GLS method is used. Our findings demonstrate that the impact of voluntary disclosure quality on stock price volatility is statistically significantly negative after incorporating ownership structure as a moderate variable in our empirical model, and further that the positive influence of institutional ownership on stock price volatility is mitigated through its indirect link with voluntary disclosure quality. Our investigation contributes in several ways. We are studying the disclosure quality in a frontier market, in which investor confidence has been seriously impacted following the 2011 revolution. We focus in this respect on the Tunisian stock market, known for its culture of withholding information, as Tunisian companies do a low tendency to voluntarily disclose such information. Additionally, we contribute to the current research literature on voluntary disclosure through examining the moderating role of ownership structure on the relationship between voluntary disclosure and stock return volatility in a frontier market.

Keywords: *Voluntary disclosure quality, stock price volatility, signaling theory, moderating role of ownership structure, frontier market, Tunisian stock market.*

JEL Classification– *D83, G12, G23, M41, G14, G30*

INTRODUCTION

The lack of transparency between companies and their different stakeholders, such as investors, is perceived as a major problem. This is why voluntary disclosure has emerged as an indispensable tool for helping companies respond to the challenges of sustainable investment. In particular, voluntary disclosure offers the opportunity to help decrease information asymmetry (Suharsono et al., 2020).

The question of the quality of voluntary disclosure of information is crucial, as inappropriate or partial information would be worse than no information at all. It is this question

of the quality of voluntary disclosure that we have focused on in this research, with reference to financial theories such as agency theory and signaling theory.

Agency theory states that minimizing conflicts of interest between managers and shareholders requires the implementation of control and supervision mechanisms. Ownership structure is one of the mechanisms that can minimize abusive behavior on the part of managers and, consequently, increase the quality of voluntary disclosure of financial information. The impact of ownership structure on the quality of voluntary disclosure is one of the most controversial and widely explored areas of research in finance and accounting.

Signaling theory has also emphasized the importance of voluntary disclosure of financial information for different decision-makers. Triyono and Hartano (2000) show that investors' reaction to disclosed information significantly affects upward or downward stock trading activity, as well as the price formation process and stock price volatility.

On this note, a number of prior research articles (Hussainey & Walker, 2009; Coluccia et al., 2017; Azrak et al., 2021; Chen et al., 2022) investigated the relationship between the quality of voluntary disclosure and stock price volatility. In particular, disclosure quality might be instrumental in enhancing stock market decision-making and in raising future earnings forecasts. The reason for this might well be that volatility is an important measure of the information asymmetry that company executives are trying to minimize by disclosing more information.

Hence, new debates took place in Tunisia after the revolution to strengthen information transparency and disclosure quality. This study aims to examine the moderating role of ownership structure on the relationship between voluntary financial disclosure quality and share price volatility of non-financial companies listed on the Tunis Stock Exchange.

We make many valuable contributions to our study. We focus on the quality of disclosure in a frontier market, in which investors' confidence was severely affected by the 2011 revolution. In particular, we concentrate on the Tunisian stock market, known for its culture of withholding information, as companies in Tunisia do not voluntarily disclose such information. Moreover, we contribute to the literature on voluntary disclosure by exploring the moderating role of ownership structure on the relationship between the quality of voluntary financial disclosure and share price volatility of non-financial firms listed on the Tunis Stock Exchange.

The following is the structure of the paper. In Section 2, the literature review and hypothesis development are presented. Section 3 outlines the research methodology. In Section 4, the research results are reported. Finally, section 5 provides the concluding remarks.

2- LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Voluntary disclosure in the Tunisian market

Tunisia's emerging capital market was created in 1969. In this developing country, the economic environment has undergone considerable evolution in the past few years. While financial disclosure is an important field of regulation, one that helps company managers to assess management efficiency, to improve their corporate image and to estimate the profitability of their own investments, but a large number of Tunisian companies are still not disclosing enough information in their annual reports. The Ahmadi and Bouri (2019) findings show that the auditors' membership of an international audit network, the "Big 4", enhances the information disclosed voluntarily in the Tunisian market.

Voluntary disclosure quality and share price volatility

Several previous studies have shown a negative relationship between the quality of financial disclosure and stock price volatility. There are several reasons for this negative relationship. High-quality voluntary disclosure reduces information asymmetry in the market, thereby lowering stock price volatility. In addition, if companies regularly disclose information to the market, the impact of new information on their performance may diminish, leading to less price variation. Voluntary disclosure of good quality leads to transparency in the market, and consequently the valuation of firms will be more consensual for investors, which could lead to a reduction in volatility. The idea that disclosure quality and transparency can reduce share price volatility may encourage companies to disclose more information.

The microstructure theory of financial markets shows that massive disclosure of market information can reduce information asymmetry and lead to price variations that depend on changes in investor demand for shares (Diamond and Verrecchia (1991)). Voluntary disclosure can also reduce the heterogeneity of investors' beliefs about the true value of a company, and consequently reduce share price volatility.

Azrak et al. (2021) find that the provision of additional market information would only slightly increase share price volatility and would therefore not have an economically significant impact on share price volatility in the Gulf Cooperation Council (GCC) countries. Kanakriyah (2016) noted a significant impact of voluntary disclosure on accounting practices in Jordan. Chen et al (2022) have found that the negative relationship between corporate social responsibility (CSR) disclosure and stock return volatility is more accentuated for companies with more information asymmetry, polluting industries and high CSR scores.

Ownership structure and the quality of voluntary disclosure

The relationship between ownership structure and the quality of voluntary disclosure has received a great deal of attention in recent years and is undoubtedly one of the most widely explored areas of research in accounting and finance. Some previous studies in this field have demonstrated the significance of this relationship, while others have not produced conclusive results.

Samaha et al (2012) investigate the impact of a comprehensive set of corporate governance attributes on the degree of voluntary disclosure in Egypt, finding that the degree of voluntary disclosure is lower for companies with a duality position and higher ownership concentration and increases with the proportion of independent directors on the board and company size.

Donnelly and Mulcahy (2008) show that voluntary disclosure increases with the number of non-executive directors on the board, and that companies with a non-executive chairman make more voluntary disclosures than other companies. Furthermore, their results show the absence of a significant relationship between the degree of voluntary disclosure and ownership structure.

The moderating role of ownership structure

Healy, Hutton and Palepu (1999) find that an increase in the quality of voluntary disclosure due to higher institutional ownership has a significant effect on stock price volatility. Nofsinger and Sias (1999) find that greater institutional ownership is associated with higher stock price volatility. It would therefore be relevant to study the relationship between price volatility and ownership structure, in order to fully understand the transition from the impact of

ownership structure on the quality of voluntary disclosure to the impact of the quality of voluntary disclosure on price volatility.

Similarly, Bushee and Noe (2000) find that institutions with a large amount of ownership have several reasons to require higher quality of disclosure as a way to offset monitoring costs. At a first stage, as disclosure increases, the impact on the bank's stock price volatility is negative due to lower information asymmetry. They conclude that the smoother behavior of stock prices decreases the cost of capital.

Conflicts of interest are more likely to destroy its independence, and the information obtained by the market may have hidden deviation (Firth et al. (2015)). Analysts may selectively disclose information for personal interests and lack constraints on honest behavior, resulting in inadequate or even biased market information. This will increase information asymmetry, and the company's stock price volatility will be higher.

3- RESEARCH METHODOLOGY

This section explains the sample and data, the regression model and, lastly, the variables measured.

3.1 Sample and data

Our study is empirically based on a sample of all Tunisian non-financial firms quoted on the Tunisian stock market observed over the period 2010-2019. For those listed after 02/01/2010, the data period is from the date of listing to 31/12/2019. The preliminary selected sample comprises all Tunis Stock Exchange listed companies as at December 31, 2019 (81 firms). Financial companies and those for which certain data were not available were eliminated. In the final analysis, we kept a sample of 411 observations (48 firms). The collected data that our empirical study investigates were taken from the annual reports and financial statements of the selected companies, the annual reports of the Tunisian stock exchange, the listing history and the share guide, with an annual frequency during the period 2010-2019.

3.2. Regression model

First of all, to test the impact of the quality of voluntary disclosure on the volatility of the share price of companies listed on the Tunisian stock market, we estimate, in panel data, the following model:

$$VOLAT_{it} = \lambda_0 + \lambda_1 DIV_{it} + \lambda_2 CSIZE_{it} + \lambda_3 Qtob_{it} + \lambda_4 LEVG_{it} + \varepsilon_{it} \quad (1)$$

Secondly, to examine the moderating role played by the ownership structure on this relationship, we use panel data to estimate the following model:

$$VOLAT_{it} = \lambda_0 + \lambda_1 DIV_{it} + \lambda_2 DIV_{it} * INST_{it} + \lambda_3 DIV_{it} * MANG_{it} + \lambda_4 DIV_{it} * FRG_{it} + \lambda_5 CSIZE_{it} + \lambda_6 Qtob_{it} + \lambda_7 LEVG_{it} + \varepsilon_{it} \quad (2)$$

Where:

$VOLAT_{it}$ is volatility of stock price (i) in t (year t).

DIV_{it} is a score measuring voluntary disclosure quality of firm (i) in t.

FRG, MANG and INST represent the percentages of foreign, managerial, and institutional ownership, respectively.

CSIZE_{it} is size of firm (i) in t.

Qtob_{it} is Q-tobin indicator of firm (i) in t.

LEV_G_{it} is the debt ratio of firm (i) in t.

ε_{it} is the error term of the model.

3.3 Variable Measurement

This paragraph introduces the dependent variable, the independent and moderating variables and the control variables.

3.3.1 Dependent variable: Stock price volatility

Our measure of stock price volatility (VOLAT) is the annualized standard deviation of returns, calculated using daily stock returns. We first calculated the standard deviation of daily returns as follows:

$$\sigma(x) = \sqrt{v(x)} = \sqrt{\frac{\sum_{t=0}^n (X_t - \bar{x})^2}{n}} \quad (3)$$

$$\bar{x} = \frac{\sum_{t=0}^n X_t}{n} \quad (4)$$

Where v is stock price variance. X_t is stock price variation at time t , and n is the total number of observations.

The calculated standard deviation is then multiplied by the square root of the number of trading days (252) to obtain an annualized standard deviation.

3.3.2. Independent and moderating variables:

Our independent variable is the score measuring voluntary disclosure quality. This score is calculated following the same approach adopted by Katmon et al. (2019) and Boshnak (2021). Then, we calculate a score for each firm in our sample using the item method.

To this end, we first establish a preliminary list of 136 items as initial indicators of disclosure. Then, we select the relevant items from this list to determine the final disclosure index based on accounting standards. Finally, we eliminated 17 mandatory disclosure items from the initial list and therefore the final list consisted of 119 items.

Assignment of scores to each of these 119 items and the calculation of the final voluntary disclosure score for each company in our sample is done according to the following procedure: On the one hand, we assign 1 if the company discloses an item of the list, otherwise 0. On the other hand, and for the forecast items, we assign 2 for the punctual estimations; we attribute 1 for the estimations by interval, and finally 0 for the non-disclosure of the forecast information. Then, the raw score is equal to the total of the scores of the company for all the items. Then, the final score is calculated by the sum of the total relative score of the firm subdivided by the maximum score of the whole sample and then multiplied by 1/5, as follows:

$$DIV = \frac{RSCOR_i}{MAXSCOR} * 20\% \quad (5)$$

Where:

DIV_i is the voluntary disclosure index of firm (i), $RSCOR_i$ is the individual score of company (i) and $MAXSCOR$ is the maximum score of the whole sample.

Our moderating variables are foreign ownership, managerial ownership, and institutional ownership. Table 1 details the measurements of these variables for each of the companies in our sample.

Table 1	
MODERATING VARIABLES MEASUREMENTS	
VARIABLES	MEASUREMENTS
Foreign ownership (FGR)	Total number of shares owned by foreign investors divided by number of shares outstanding.
Managerial ownership (MANG)	Total number of shares owned by the chief executive officer and members of the executive board divided by number of shares outstanding.
Institutional ownership (INST)	Total number of shares owned by banks, insurance companies, other financial organizations and public institutions divided by number of shares outstanding (Lee et al, 2018).

3.3.3 Control variables:

We have three control variables: firm size, Q Tobin, and leverage. Where the firm size (CSIZE) is measured by the natural logarithm of total assets. The Q-Tobin (Qtob) is the market capitalization divided by total assets. Finally, Leverage (LEVG) is measured by the total financial debt divided by total equity and liabilities.

4- RESEARCH RESULTS

In this section, we provide descriptive statistics and regression results.

4.1 Descriptive statistics

Table 2 below presents the descriptive statistics (Mean, Median, Minimum, Maximum, Standard deviation, Kurtosis, Skewness) of the different annual series of the studied variables during the 2010-2019 period. We found that volatility of prices of the firms quoted on the Tunisian stock market is between the two extreme values of 137.5% (Maximum) and 4.3% (Minimum), or a fluctuation of around an averaged value of 29.684%. We also found that voluntary disclosure quality of Tunisian companies listed on the Tunis Stock Exchange fluctuates between 0.2 and 0.084, this variability is centered on the average of 0.141. The examination of Table 2 also shows that the average of the foreign ownership in the companies of our sample is 3.817% with a maximum of 59.110% and a minimum of 0%. As shown in Table 2, on average, managerial ownership in our sample firms is 59.777% with a maximum of 99.990% and a minimum of 0%. Table 2 shows also that the percentage of institutional ownership in non-financial firms listed on the Tunisian stock market varies between two extreme values namely

91.670% (Maximum) and 0% (Minimum), that is to say variability around an average value of 45.787%.

	Mean	Median	Minimum	Maximum	Standard Deviation	Kurtosis	Skewness
VOLAT	29,684%	27.7%	4,3%	137,5%	0.137	20.998	3.321
CSIZE	18,226	18.171	15,359	22,840	1,057	3.422	0.278
LEVG	57,419%	50.20%	0,08%	434,04%	0.538	23.669	3.9
Qtob	1,284	0.867	0,011	18,031	1,421	51.794	5.149
DIV	0,141	0.143	0,084	0,2	0,021	3.976	0.193
FGR	3,817%	0	0,000%	59,110%	0.12189	16.272	3.766
INST	45.787%	44.84%	0,000%	91.670%	0.28577	1.644	-0.208
MANG	59,777%	65.3%	0,000%	99,990%	0.22124	3.972	-1.140

4.2 Regression results

In the following section, we first provide regression results for the impact of voluntary disclosure quality on stock price volatility, and then regression results that test the moderating role of ownership structure on this relationship.

4.2.1 Impact of voluntary disclosure quality on stock price volatility

We experimentally investigate the impact of the quality of voluntary financial disclosure on stock price volatility by estimation of the coefficients of Model 1 in panel data. Table 3 below summarizes the estimated results of a fixed-effects specification.

		Coefficients	P-value
DIV		-1.22059	0.035**
LEVG		-0.0739416	0.002***
Qtob		0.0007887	0.891
CSIZE		-0.0813449	0.001***
Constant		1.992618	0.000 ***
R-square	Within	0.0621	
	Between	0.0040	
** : Significant at the 5% level		***Significant at the 1% level	

The findings of the model(1) indicate that the coefficient of the DIV variable is negatively correlated (-1.22059) and is statistically significant at the usual 5% threshold (p-value=0.035), which means that the quality of voluntary financial information has a significant negative impact on the price volatility of non-financial companies listed on the Tunisian stock market. There may be multiple explanations for this impact. In fact, voluntary quality disclosure reduces information asymmetry in the market and, hence, share price volatility. If companies regularly disclose information to the market, the impact of new information on their performance may diminish, leading to less price variation. In this way, the quality of voluntary information disclosure creates transparency in the market and, consequently, the company's valuation will be more consensual for investors, which in turn may reduce share price volatility.

4.2.2. The moderating role of ownership structure

To deepen our empirical analysis of the impact of the quality of voluntary financial disclosure on the price volatility of securities listed on the Tunisian stock market, we added ownership structure as a moderator variable of this relationship.

TABLE 4		
THE IMPACT OF VOLUNTARY DISCLOSURE QUALITY ON TUNISIAN STOCK RETURN VOLATILITY: THE MODERATING ROLE OF OWNERSHIP STRUCTURE		
	Coefficients	P-value
DIV	-0.3595049	0.343
DIV*INST	0.4414764	0.033**
DIV*MANG	0.2662939	0.309
DIV*FGR	-0.171698	0.790
LEVG	0.0222684	0.153
Qtob	-0.004166	0.437
CSIZE	-0.0209338	0.015**
Constant	0.670829	0.000 ***
R square	Within	0.0000
	Between	0.3115
** : Significant at the 5% level		***Significant at the 1% level

The examination of table 4 shows that the impact of the quality of voluntary financial disclosure on price volatility remains significantly negative even after the addition of the moderating variables measuring ownership structure in model (2). Our results also show a positive relationship between the moderating effect of institutional ownership and price volatility, implying that increasing institutional ownership in firms listed on the Tunisian stock market could increase price volatility, as shown by Sias (1996), Dennis and Strickland (2002), Xu and Malkiel (2003). However, this effect of institutional ownership on volatility seems to be attenuated by its indirect link with the quality of voluntary disclosure of financial information.

The results also show that there is no significance of the moderating effect of managerial and foreign ownership on the relationship between voluntary disclosure and volatility.

CONCLUSION

This paper investigates the relationship between the quality of voluntary disclosure and share price volatility in Tunisia, considering the moderating role of ownership structure. The results support our conjecture that there is a negative correlation between the quality of voluntary disclosure and share price volatility based on a sample of 411 annual reports of non-financial companies listed on the Tunisian stock exchange observed over the period 2010-2019. The significance of this negative impact is mainly due to the increase in the level and quality of voluntary disclosure, which reduces information asymmetry in the market and the anticipated risks to which companies are exposed, leading to a stabilization of stock prices and a reduction in volatility.

We also find that the impact of voluntary disclosure quality on stock price volatility is significantly negative after incorporating ownership structure into our empirical model as a moderated variable, and that the positive effect of institutional property on stock price volatility is moderated by its indirect relationship with voluntary disclosure quality.

This article contributes to the existing literature on voluntary disclosure by exploring the three-way link between voluntary disclosure, ownership structure and price volatility in the Tunisian stock market. The practical implications of our study are relevant to managers, investors and researchers. In this regard, these findings may guide managers in their decision making. In addition, investors are interested in firms with a higher percentage of institutional shareholding, as this type of shareholding enhances the quality of voluntary disclosure and therefore lowers share price volatility.

This study's limitation is that we used as our sample only non-financial companies listed on the Tunisian stock market, which may restrict the generalizability of the findings. As a consequence, this paper may provide future researchers with new lines of investigation. For illustration, potential future research may explore the effect of corporate social responsibility disclosure in particular on volatility and could highlight the significance of the role of institutional investors.

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