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IS VOLUNTARY DISCLOSURE VALUE RELEVANT? EVIDENCE FROM ITALIAN LISTED COMPANIES

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ABSTRACT

The paper aims to assess the level of voluntary disclosure in companies listed on the Italian Stock Exchange and understand the relationship between the quality of voluntary disclosure and market value of Italian listed companies.Voluntary disclosure refers to the discretionary release of financial and non-financial information, which companies are not obliged to disclose by accounting standard setting bodies. In particular, this paper analyzes the effect that disclosure of voluntary information could have on the stock market value of Italian listed companies. To do this, 203 annual reports of Italian listed companies for the year 2012 were analyzed. A voluntary disclosure index index is created to measure the extent of disclosure. The index is used in an ordinary least squares model, as a dependent variable, to understand relationships between the above-mentioned determinants. The disclosure score is composed mainly of 38 items per firm.A total of 7,714 items were collected and analyzed.Results show the level of voluntary disclosure provided by Italian listed companies in their 2012 annual reports positively and significantly affect the value relevance of Italian listed companies.

JEL: M41

KEYWORDS: Voluntary Disclosure, Value Relevance

INTRODUCTION

Voluntary disclosure refers to the discretionary release of financial and non-financial information, which companies are not obliged to disclose by accounting standard setting bodies. The provision of additional information, not specifically required by law, is becoming increasingly important. This pratcies can make a firm more competitive and provides significant transparency to stakeholders. Meek (1995) defines voluntary disclosure as "free choices on the part of company managements to provide accounting and other information deemed relevant to the decision needs of users of their annual reports.".

In Italy, the disclosure of financial and nonfinancial information,for listed companies,is regulated by different legislative sources (IAS/IFRS; Legislative Decree no. 58/1998; Legislative Decree no. 127/1991; Legislative Decree no. 231/2001; Legislative Decree no. 38/2005, 262/2005; Legislative Decree 32/2007; Consob Regulations and Italian Stock Exchange regulations). All elements required by laws are classified as mandatory disclosure. It is possible to classify mandatory disclosure tools on the basis of recurrence time for which they are used (Zambon, 2011) in three main categories: initial information tools, periodic reporting tools and episodic information tools.

The first category includes the listing admission's prospectuses (Consob resolution no. 19971 of 14 May 1999). The mandatory reporting disclosure is aimed at fulfilling legislative needs and protecting some categories of stakeholders. This reporting is realized through the preparation of certain mandatory documents (separate and consolidated financial statements, management reports, interim reports, statutory auditor reports, external auditor reports, corporate governance and ownership reports, letters to shareholders, and minutes of meetings). Episodic information tools are documents that disclose qualitative

and quantitative information, in a mandatory way, following the occurrence of extraordinary corporate transactions (mergers, demergers and disposals; increases and reductions in capital; conversions of operation shares; treasury share transactions; related party transactions; issuances of bonds; amendments to certificates of incorporation; and other relevant facts). All other instruments that a company adopts discretionarily, in order to convey more information, can be considered voluntary disclosure tools.

The need for information disclosure, in voluntary ways, is explored by the accounting literature through different theories. Researchers and scholars argue, "disclosure is a complex phenomenon that cannot be explained by only one theory" (Adrem, 1999; Cormier et al., 2005, Bazine and Viral, 2011).

One of these accounting theories that can help us in understanding the role of voluntary disclosure in accounting and capital market-related research is signaling theory. This theory explains the reason why firms have an incentive to report information in a voluntary way to capital markets. Voluntary disclosure is required to compete successfully in risk capital markets. Insiders know more about the firm's situation and future plans than investors. Investors, in order to protect themselves, offer a lower price. The firm's value can be increased when the company reports a high level of voluntary information that increase the credibility perceived by investors. This in turn reduces the uncertainty for potential investors.

According to signaling theory, management can provide additional information to reduce information asymmetry (Spence, 1973; Alvarez et al. 2008) and signal to outsiders that the company is achieving better performance than competitors (Miller, 2002). Investors make decisions based on information provided by firms (Abhayawansa and Abeysekera, 2009), which underscores how the credibility of information spread is essential to reduce information asymmetry (Hughes, 1986).

Firms with higher performance (economical, financial, and social) are more inclined to provide higher information to signal to external environments their excellence and differentiate themselves from other competitors (Akerlof, 1970). By that reasoning, we inferr that lower-performance companies will be more inclined to silence even if this alternative cannot be the ideal solution. The market could interpret this silence as a negative signal (Ross, 1979; Milgrom, 1981). Firms may be affected by bad reputation by not also communicating (to different stakeholders) unfavorable news in an acceptable timeframe (Skinner, 1994).

Disclosing information in a voluntary way can provide benefits, such as the decrease of information asymmetry and the related cost of capital (Jensen and Meckling, 1976) or reduction of investor uncertainty, but it may also involve incurring direct costs (for example, legal costs, audit costs, data collections and disclosure costs etc.) and indirect costs (property costs or expenses arising from competitive disadvantages that are created if the information is used by competitors) (Maulz and May, 1978; Grey et al., 1984; Cooke, 1989; Lev, 1992). For this reason, management must choose whether to provide additional information, not required in a mandatory way, and the level of details to provide. With regard to to listed companies, as we will see, the disclosure of voluntary information can affect the stock market, thereby influencing stock values. To understand this phenomenon, in the present research, a value relevance approach will be used.

Value relevance is a term used in accounting studies to identify research that analyzes the impact of accounting measures on the market value of certain firms. These models are based on the use of market value predictive models. In the accounting literature, there are many definitions of value relevance that reflect the different aspects and different perspectives analyzed. For example, Hellström (2006) defined value relevance as "the ability of financial statement information to capture or summarize information that affects share values." This definition underlines a perspective of the analysis that assumes the efficient market hypothesis (Fama, 1970) and a related capacity of market value to react to accounting performance information.

Many studies use the value relevance approach to understand the ability of accounting value to predict market values. There are different classification of these studies (see, for example, the classification provided by Hellström, 2006; Holthausen and Watts, 2001; Beaver, 2002; Beisland, 2009) and also different econometrical models used (for example, Price Model and Returns Model [Ohlson, 1995; Easton and Harris, 1991]).

Unlike the majority of the studies conducted on this topic, the aim of this paper is not to understand the value relevance of book value, but the additional value relevance realized by companies that provide additional voluntary disclosure. There are few studies in the international literature that provide this evidence worldwide. In the next section, a few experimental studies on this topic are explored. The remainder of the paper is organized as follows. The next section discusses the literature and hypotheses. The data and sample construction are then discussed, followed by a discussion of the results. The last section provides some concluding remarks.

LITERATURE REVIEW

Most value-relevance studies are focused the potential of accounting data to influence stock returns. Over the past decade researchers' attention has begun to focus on the potential impact that the degree of additional disclosures provided in the annual report could have on financial markets. In fact, based on efficient markets assumptions (Fama, 1970), as well as other accounting theories (in particular signaling theory), several studies in reference to this topic were conducted.

The increase of information in annual reports can create value for different stakeholders that can evaluate their choices, even for investment, with a higher degree of accuracy (Lang et al., 2003).
Although the issue of value relevance of voluntary disclosure has not been analyzed by scholars with the same intensity of the value relevance of accounting information, below we summarize the main existing studies on the subject.

In 2002, some research regarding the value relevance of voluntary disclosure was conducted by authors such as Lundholm and Myers (2002) and Gelb and Zarowin (2002). Both focused their attention on U.S. companies using statistical techniques of univariate and multivariate analysis in a period between 1980 and 1994. To detect the level of voluntary disclosure, they did not use ad hoc indexes. Instead they used the voluntary disclosure score provided by the Association for Investment Management and Research (AIMR), and they provided evidence that the level of voluntary disclosure can positively impact stock exchange values.

Lang et al. (2003) analyzed a sample of 4,859 listed companies (belonging to 28 different countries),some of which are listed on a single market and others in more than one regulated markets (cross-listed). They examined data for the year 1996 using a disclosure score, which indicated the disclosure of voluntary information, obtained from the I/B/E/S database. They note that companies listed on more than one market are subject to better and more accurate assessments by financial analysts than those listed on a single market. Since the quality of analysis of information related to the environment positively impacts the values of equity, the authors argue that cross-listed companies, convey a greater level of information, and are thus able to increase the value of their shares.

Silva and Alves (2004) investigated the value relevance of voluntary disclosure transmitted via the websites of 150 listed companies in 2002 listed in Argentina, Brazil and Mexico. They emphasize a link to positive and significant correlation between the level of disclosure and the values market. Studies point out that this relationship also depends on the sector and the size of companies analyzed and that country of origin does not affect the level of value relevance observed.

Abdolmohammadi (2005) examined a sample of 58 U.S. Fortune 500 firms to understand how information related to intellectual capital in annual reports impacts market prices. The investigation, emphasized how the disclosure of intellectual capital is higher in companies operating in sectors classified as belonging to the "new economy" (such as information technology, services, etc.). He used multivariate analyses and found a significant positive association between the level of disclosure of intellectual capital and market values.

This evidence is not supported by Murray et al. (2006),who conducted a similar study on a sample of 660 listed companies covering the years 1988-1997 in the United Kingdom. The present research aims to identify and understand possible correlation between the level of social and environmental disclosure and market values of the companies analyzed. The analysis of 152 listed companies (in the period between 1996 and 2000) on the Copenhagen Stock Exchange conducted by Banghoj and Plenborg (2008) indicated that the level of voluntary disclosure of information is not value relevant.

Different conclusions are drawn from the research of Hassan et al. (2009). The research sample consisted of 272 listed Egyptian companies over the period1995 to 2002. The authors,using univariate and multivariate statistical tools for analysis, found evidence that voluntary disclosure is value relevant, even if the statistical tests do not confirm the significance of the values obtained. The authors point out that the latter supports the view that there are complex interactions of several factors in determining the correlation between voluntary disclosure and firm value.

Gordon et al. (2010) analyzed the role of information regarding the security company used in determining stock values. They examine a sample of 1,641 U.S. companies. The research shows how this type of information provided voluntarily by companies has a positive impact on market values.

The information related to environmental aspects and Corporate Social Responsibility (CSR) of Canadian companies is the object of a study by Cormier et al. (2011). The authors, making use of multivariate 2SLS and using a sample of 137 Canadian companies listed in 2005, emphasized that disclosure of information related to the environment and CSR play an important role in reducing information asymmetry in financial markets. This finding confirms the capacity of the same to be value relevant.Anam et al. (2011) confirmed the value relevance of intellectual capital information by providing empirical evidence from a sample of 186 Malaysian listed companies between 2002 and 2006. In Kuwait, the level of value relevance of voluntary disclosure has been analyzed by Alfaraih and Alanezi (2011). They use the Returns Price Model,to study the phenomenon of 117 listed companies in 2007, highlighting the inability of voluntary disclosure to explain market values.

Unlike the study mentioned above, other authors (Uyar and Kilic, 2011; Al-Akra and Ali, 2012) used methods derived from the Ohlson Model to confirm the value relevance of voluntary disclosure of listed companies in Turkey (129 listed companies analyzed in 2010) and in Jordan (243 listed companies analyzed between 1996 and 2004).

To provide an overview of the main studies on the value relevance of voluntary disclosure, Table 1 summarizes the literature from the main studies conducted on this topic. Column (1) reports the author(s) name and year of publication, column (2) the country context, column (3) the sample period, column (4) the number of firms analyzed, column (5) the methodology adopted in order to conduct the analysis, and finally column (6) features the main findings provided by the authors.

Table 1: Value Relevance of Voluntary Disclosure: The Extant Literature

Authors	Country	Period	Number of Firms	Methodology	Results
Lundholmand Myers (2002)	USA	1980-1994	4,478	Univariate and multivariate analysis (disclosure score provided by AIMR)	The voluntary disclosure level is value relevant
Gelb and Zarowin (2002)	USA	1980-1993	821	Univariate and multivariate analysis(disclosure score provided by AIMR)	The voluntary disclosure level is value relevant
Lang et al. (2003)	28 Countries	1996	4,859	Univariate and multivariate analysis(disclosure score provided by IBES)	Cross-listed companies obtain better evaluation from analyst and higher market values on the related Stock Exchange
Silva and Alves (2004)	Argentina, Brazil and Mexico	2002	150	Multivariate analysis	Size and sectors affect the level of value relevance of voluntary disclosure information. Countries doesn't affect the value relevance level
Abdolmohammadi (2005)	USA	1993-1997	58	Univariate and multivariate analysis	The voluntary disclosure level of intellectual capital information is value relevant
Murray et al. (2006)	U.K.	1988-1997	660	Univariate and multivariate analysis	There are no significant evidences of the impact of environmental disclosure on the value relevance level
BanghojandPlenborg (2008)	Denmark	1996-2000	152	Univariate and multivariate analysis(Collins model)	The voluntary disclosure level is value relevant
Hassan et al. (2009)	Egypt	1995-2002	272	Univariate and multivariate	The voluntary disclosure level is value relevant (not significance)
Gordon et al. (2010)	USA	n.a.	1,641	Ohlson Model	The voluntary disclosure level is value relevant
Cormier et al. (2011)	Canada	2005	137	Multivariate analysis2SLS	The voluntary environmental and CSR disclosure level reduce information asymmetries with financial markets
Anam et al. (2011)	Malaysia	2002-2006	186	Ohlson Model	The voluntary disclosure level of intellectual capital is value relevant
AlfaraihandAlanezi (2011)	Kuwait	2007	117	Price Model (Ohlson Model) and Returns Model	The voluntary disclosure level is value relevant
Uyar and Kilic (2011)	Turkey	2010	129	Ohlson Model	The voluntary disclosure level is value relevant
Al-Akra and Ali (2012)	Giordan	1996-2004	243	Ohlson Model	The voluntary disclosure level is value relevant

This table summarizes the literature review of the main studies conducted on the value relevance of voluntary disclosure

HYPOTHESIS DEVELOPMENT

The aim of this research is to identify the capacity of voluntary disclosure to increase the value relevance of Italian listed companies.To conduct this study, the following hypothesis was developed:

H1: Value relevance is positively affected by the amount of voluntary information provided by listed companies.

The increase of voluntary disclosure in the annual report can create value for different stakeholders. With a greater degree of information, stakeholders can evaluate their choices with a higher degree of accuracy (Lang et al., 2003). The higher amount of information withheld may therefore provide greater confidence in investors that are reflected in equity market values, as demonstrated by empirical evidence emerging from previous studies (Lundholm and Myers, 2002; Gelb and Zarowin, 2002; Abdolmohammadi, 2005; Al-Akra and Ali, 2012; Uyar and Kilic, 2011; Anam et al., 2011; Cormier et al., 2011; Gordon et al., 2010).

DATA AND METHODOLOGY

To assess the relationship between voluntary disclosure and firm value, in this study 203 annual reports of Italian listed companies were analyzed. This research includes the main companies listed on the Italian Stock Exchange as of December 31,2012. The annual reports are available on the Italian Stock Exchange website. Annual reports are usually considered the main source of information as well as the key channel of communication with external users of information. The research is limited to a single year (2012), because, according to Botosan (1997), firms keep a quite stable strategy of disclosure over time.

The sample composition is shown in Table 2, which reports the number of annual reports analyzed, the number of voluntary disclosure item observed (per firm) and the total of the voluntary disclosure items collected.

Table 2: Number of Annual Reports and Items Analyzed

Stock Index	Number of Firms Analyzed	Voluntary Disclosure Items Observed Per Firm	Voluntary Disclosure Items Observed
FTSE MIB	40	38	1,520
FTSE Mid Cap	50	38	1,900
FTSE Small Cap	94	38	3,572
FTSE Micro Cap	19	38	722
Total	**203**		**7,714**

This table shows the number of annual reports analyzed, the number of voluntary disclosure item observed and the total of the voluntary disclosure items collected

This paper analyzes the level of value relevance of voluntary disclosures provided by Italian listed companies in the annual report and examines if the level of voluntary disclosure is able to influence the stock prices of the companies analyzed. To do this, we made use of certain multivariate linear regression models based on the OLS model of Ohlson (Ohlson, 1995). The model generally adopted for this type of analysis is the Price Regression Model (PRM) defined as follows:

$$MV_{it} = \alpha_0 + \beta_1 BV_{it} + \beta_2 NI_{it} + \varepsilon_{it} \quad (1)$$

where:

MV_{it} is the market value of the equity collected on the 4th month after closing year date;
B_{it} is the book value of the equity; and
NI_{it} is the net income of equity.

In the present study, I used multiple linear regression models, which, starting from the reference method generally adopted (PRM) put emphasis on the differences between the model as formulated above, as well as a second model that also considers the level of voluntary disclosure provided by the company being analyzed. In doing so, the model assumes the following formulation:

$$MV_{it} = \alpha_0 + \beta_1 BV_{it} + \beta_2 NI_{it} + \beta_3 VDI_{it} + \varepsilon_{it} \quad (2)$$

where, as previously described, a third independent variable is added to the multivariate model representating the level of voluntary disclosure (VDI). The composition of the variable will be explained in the next paragraph.

The main problem with the two OLS models described above is they are affected by the scale effects problem that emerges after the analysis of a sample dimensionally heterogeneous (Easton and Sommers, 2003; Wu and Xu, 2008). This problem can be mitigated by scaling all variables by the value of the prior

year capitalization as suggested by some authors (Easton, 1998; Brown et al., 1999; Cahan, 2000; Aboody et al., 2002; Lang et al., 2006; Barth et al, 2008). This operation was performed on all variables, both dependent and independent, to take into account the problem of heteroskedasticity (Ali and Hwang, 2000). For this reason, the models explained before were transformed from (M1) and (M2) to (M3) and (M4) as specified below:

$$\frac{MV_{it}}{MV_{i(t-1)}} = \alpha_0 \frac{1}{MV_{i(t-1)}} + \beta_1 \frac{BV_{it}}{MV_{i(t-1)}} + \beta_2 \frac{NI_{it}}{MV_{i(t-1)}} + \varepsilon_{it} \quad (3)$$

$$\frac{MV_{it}}{MV_{i(t-1)}} = \alpha_0 \frac{1}{MV_{i(t-1)}} + \beta_1 \frac{BV_{it}}{MV_{i(t-1)}} + \beta_2 \frac{NI_{it}}{MV_{i(t-1)}} + \beta_3 \frac{VDI_{it}}{MV_{i(t-1)}} + \varepsilon_{it} \quad (4)$$

To compare the two models and understand whether the addition of a third explanatory variable (VDI) significantly impacts the explained variance of the model, R2, it was necessary to conduct the Wald test and F-test, as was a nested model approach. The incremental F-test is used to test the null hypothesis, that H_0: $\beta_3 = 0$. The nested model is superior, in terms of explained variance, to the full model. The F-test is specified as follows (Stock and Watson, 2007):

$$F = \frac{(RSS_1 - RSS_2)/(k_2 - k_1)}{RSS_2/(n - k_2 - 1)} \quad (5)$$

Where:

RSS1 = residual sum of squares of the nested model,
RSS2 = residual sum of squares of the full model,
k1 = number of estimated coefficients (including constant) for the restricted model,
k2 = number of estimated coefficients (including constant) for the unrestricted model,
n = total number of observations.

The methodology used to assess the level of disclosure is content analysis is based on the qualitative study of vocabulary used in company documents to understand the content and the standardization of the documents. It is a methodology that is spreading dramatically in studies of Financial Accounting (Beattie, 2005).In particular, Krippendorff (1980) defines content analysis as "a set of procedures to collect and organize information in a standardized format that allows the analyst to undertake inferential analysis on the characteristics and meaning of the recorded information".

Content Analysis is a preparatory step to assess a disclosure index, that is a measure representing the level of information provided by the company (voluntary or mandatory). The measure is calculated on the basis of specific elements observed based on one or more specific sources of information. The first issue, therefore, in order to define the disclosure index which will represent disclosure quality, is found in elements to be considered for creating the index.

To create an index that represents the level of voluntary information disclosed by companies, items were observed in accordance with the most-used items observed in voluntary disclosure research (Meek et al., 1995; Botosan, 1997; Haniffa and Cooke, 2001; Chau and Gray, 2002; Eng and Mak, 2003; Huafang and Jianguo, 2007). The data below represents the main aspect of voluntary disclosure information observed, to create the voluntary disclosure index. The items selected and included in the index are reported in Table 3.

Table 3: Items Analyzed in Voluntary Disclosure Index (VDI)

Category	Items
A. PERFORMANCE INDICATORS	A.1. ROE
	A.2.ROA
	A.3. ROS
	A.4. DPS
	A.5. Debt Sustainability
	A.6. PTBV
B. FIRM BACKGROUND	B.1. History
	B.2. Organisational Structure
	B.3. Business
	B.4. Main products/services
	B.5. Main markets
	B.6. Competitive environment
C. FORWARD-LOOKING INFORMATION	C.1. Expected Market Share
	C.2. Expected Cash flow
	C.3. Expected Investment
	C.4. Expected Net Income
	C.5. ExpectedRevenues
D. HUMAN RESOURCE	D.1. Number of Employees
	D.2. Training
	D.3. Recruitment Policies
	D.4. HR functions
	D.5. HR geographic distribution
	D.6. HR Welfare policies
E. RESEARCH & DEVELOPMENT	E.1. R&D Projects
	E.2. R&D Resources
	E.3. R&D Policies
	E.4. R&D Activities Deployment
	E.5. Patents
F. STOCK EXCHANGE INFORMATION	F.1. Share volume
	F.2. Share Value
	F.3. Share distribution
	F.4. Share FLI
G. SEGMENTAL REPORTING	G.1. Sectorial Market share
	G.2. Business line Production
	G.3. Business line Costs
H. OTHERS	H.1. Social impact of economic performance
	H.2. Environmental policies
	H.3. ISO Certification

This table shows the number the items selected and included in the disclosure score

The index includes 8 categories of voluntary disclosure elements (performance indicators, firm background, forward-looking information, human resource information, research and development elements, stock exchange information, segment reporting and others).

To differentiate the information presented in annual reports, a different score was assigned to arrange the index:2 points if an item was reported in qualitative and quantitative terms,1 point if the item was reported in qualitative terms,0 point if the item was absent. The model is unweighted because all items are important in the same way and information repeated is considered as information presented only one time (consistently with other authors such as Giner, 1997; Oliveira et al., 2006; Raffournier, 1995).The items are hand-collected because software-based searches are not robust and are not able to capture accurately narrative disclosure such as manual analysis (Beattie and Thomson, 2007).

The Voluntary Disclosure Index (VDI) is expressed as:

$$VDI = \frac{\sum_{i=1}^{n} \mathrm{di}}{\mathrm{m}} \qquad (6)$$

Where:

d_i is a variable that could assume the following values according to the following circumstances:$d_i = 0$ if the item is not disclosed, $d_i = 1$ if the item is disclose in qualitative terms. $d_i = 2$ if the item is disclose in qualitative and quantitative terms

m is the maximum number of elements that a firm may disclose in reference to a voluntary disclosure framework provided in Table 6. This variable is important in order to consider what a firm can effectively disclose in its report (i.e., a firm without ISO certification could not give information about this kind of element).

RESULTS AND DISCUSSION

Table 4 reports descriptive statistics for the variables included in the regression model. Means, medians, standard deviation, variance and 95% confidence interval are provided.

Table 4: Descriptive Statistics

	Stock Index	N	Mean	Std. Dev.	95% Confidence Interval		Median	Variance
Voluntary disclosure Index (VDI)	FTSE MIB	40	0.39	0.13	0.35	0.43	0.35	0.02
	FTSE Italia Mid Cap	50	0.38	0.11	0.35	0.41	0.36	0.01
	FTSE Italia Small Cap	94	0.32	0.12	0.29	0.34	0.32	0.01
	FTSE Italia Micro Cap	19	0.23	0.06	0.20	0.26	0.22	0.00
Equity	FTSE MIB	40	8,095,543	14,355,981	3,504,278	12,686,809	3,225,300	206,094,000,000
	FTSE Italia Mid Cap	50	2,530,547	9,902,350	-283,670	5,3443763	150,373	98,056,000,000
	FTSE Italia Small Cap	94	388,982	817,908	221,458	556,506	119,739	668,000,000
	FTSE Italia Micro Cap	19	144,576	181,764	56,969	232,184	70,810	33,000,000
Net Income	FTSE MIB	40	276,665	1,231,283	-117,118	670,449	139,719	1,516,000,000
	FTSE Italia Mid Cap	50	15,089	296,559	-69,192	99,370	790	87,947,000,000
	FTSE Italia Small Cap	94	-27,916	146,338	-57,889	2,057	115	21,415,000,000
	FTSE Italia Micro Cap	19	-19,320	79012	-57,403	18,763	-2,251	6,242,000,000
Capitalization	FTSE MIB	40	7.753.576	11.431.174	4.097.709	11.409.443	3.356.264	130.672,000,000
	FTSE Italia Mid Cap	50	742.809	465.811	610.427	875.191	686.888	217,000,000
	FTSE Italia Small Cap	94	63.247	50.514	52.900	73.593	52.625	2,551,000,000
	FTSE Italia Micro Cap	19	95.826	113.814	40.969	150.682	40.442	12,953,000,000

This table reports descriptive statistics for the variables included in the regression model

As we notice from Table 5, there is a positive and significant correlation Pearson correlation coefficients between the market value variable and the VDI using the univariate approach.

To better understand the value relevance of voluntary disclosure, M3 and M4 (as described in the previous paragraph) were run., The researchers tried to compare them through the nested model (M3 nested in M4).

The results of the analysis are summarized in Table 6), which shows not only the evidence found by the analysis of two distinct models, but also by a third, nested, model. The purpose of the model, expressed in the table as M3 nested in M4, is to shed light on the increase or decrease in goodness of fit of variance explained and significance of model M4 from model M3. In other words, with the nested template, we can understand if the OLS regression that incorporates the variable inherent in the level of voluntary disclosure (M4) is better in explaining the phenomenon of value relevance than the model which considers only equity and profit of the year as independent variable (M3).

Table 5: Correlation Coefficients (Pearson)

PearsonCoefficients (r)	VDI	Net Income	Market Value	Equity
VDI	**1**	0.064	0.248**	0.090
Net Income	0.064	**1**	-0.008	0.537**
Market Value	0.248**	-0.008	**1**	0.113
Equity	0.090	0.537**	0.113	**1**

*This table reports the correlation coefficients between the market value variable and the VDI. *significant at 0.01 level (2-tails),** significant at 0.05 level (2-tails)*

The nested OLS model above shows how by inserting a third variable, the significance of the model increases in all the indexes observed, with the exception of companies included in the FTSE Micro Cap. For these firms it is not possible to reject the null hypothesis of the coefficient object of observation (H0: $\beta 3 = 0$). For the other companies, the incremental F-test and its p-value, point out how the rejection of the null hypothesis is equal to 0.01 level for FTSE MIB and FTSE Mid companies and is equal to 0.1 for Small Cap. This denotes a high degree of significance of the model M4 that includes the voluntary disclosure variable as a proxy of value relevance). It is also possible to notice how, after the inclusion of the variable concerning the level of disclosure, the variance explained (R2) increases, emphasizing a higher goodness of fit for model M4 than M3.The statistical observations that emerge underline that the level of voluntary disclosure impacts, in a positive and significant way, determination of the phenomenon of value relevance in Italian listed companies.

Table 6: Results of OLS Regression Models (M3, M4 and M3 Nested in M4)

	Model	β_1	β_2	β_3	*N*	R^2	*F* (H_0: $\beta_i = 0$)	*F*	*Pr>F*	ΔR^2	H_0: $\beta_3 = 0$
	M3	0.0249	-0.0183	-	40	0.0046	1.089				
FTSE MIB	M4	0.0017	0.0243	0.1972***	40	0.2143	4.545***				
	M3 nested in M4							10.875***	0.0022	0.2097	Rejected at 0.01 level
	M3	0.0092	0.01247	-	50	0.0013	0.9664				
FTSE Mid Cap	M4	0.0069	0.3464	3.857***	50	0.1361	3.573**				
	M3 nested in M4							8.479***	0.0055	0.1348	Rejected at 0.01 level
	M3	0.0081***	0.0710	-	94	0.0920	5.711***				
FTSE Small Cap	M4	0.0068***	0.061	9.171*	94	0.1161	5.073***				
	M3 nested in M4							3.485*	0.0652	0.0241	Rejected at 0.1 level
	M3	0.0233**	-0.0193	-	19	0.2832	4.556**				
FTSE Micro Cap	M4	0.0250*	-0.0278	-0.0094	19	0.2623	3.133*				
	M3 nested in M4							0.5469	0.471	-0.0209	Accepted

*The table reports the M3 and M4 OLS nested models that underscore that the level of voluntary disclosure impacts in a positive and significant way the determination of the value relevance in Italian listed companies.*** p-value < 0.01 ** p-value < 0.05 * p-value < 0.1*

CONCLUSIONS

The discretionary release of financial and non-financial information that companies are not obliged to disclose by accounting standard setting bodies is a spotlight topic in accounting literature. Many empirical studies have been conducted to assess the level of voluntary disclosure worldwide and to understand the effect that certain firm-specific determinants could have on it. The majority of them use weighted and unweighted disclosure scores to explain disclosure quality. These are ad-hoc created indexes, created by researchers to observe some specific disclosure aspects.

In the research presented here, the quality of voluntary disclosure is assessed in reference to Italian listed companies in 2012. To do this, annual reports of Italian listed companies were analyzed, and 7,714 voluntary disclosure items were observed to create the DScore. This DScore was used in an OLS regression model, derived from the Ohlson Model, as an independent variable to understand the value relevance of voluntary disclosure. The results show that a higher level of voluntary disclosure impacts the stock market value in a positive and significant way. This evidence is consistent with the signaling theory, according to which voluntary disclosure is necessary to compete successfully in the market for venture capital. Insiders have more knowledge of the actual situation of the company and their future plans relative to investors, so the latter protect themselves by offering a lower price for the shares, having a lower level of information.

The value of the company increases, however, in cases where the company voluntary provides additional information. This further information enhances the credibility of firms, and reduce the uncertainty for potential investors. As shown in the empirical analysis, and in accordance with the signaling theory, management can provide more information to reduce information asymmetry and reassure markets (Spence, 1973; Alvarez et al., 2008). Some previous studies confirm the findings shown in this research in reference to the Italian context (Lundholm and Myers, 2002; Gelb and Zarowin, 2002; Abdolmohammadi, 2005; Al-Akra and Ali, 2012; Uyar and Kilic, 2011; Anam et al., 2011; Cormier et al., 2011; Gordon et al., 2010).

The research presented here could be extended to other countries or examined at a different time point to address the limitation of this study. This topic, particularly over the last decade, has been of great interest to accounting researchers. The quality of information, however, is not always easily and immediately understood. Different methods are used with a view to measuring information quality. Future research on this topic could use different methodologies in different legislative contexts.

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