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FOREWORD

The Annual Conference of the EuroMed Academy of Business aims to provide a unique international forum to facilitate the exchange of cutting-edge information through multidisciplinary presentations on examining and building new theory and business models for success through management innovation.

It is acknowledged that the conference has established itself as one of the major conferences of its kind in the EuroMed region, in terms of size, quality of content, and standing of attendees. Many of the papers presented contribute significantly to the business knowledge base.

The conference attracts hundreds of leading scholars from leading universities and principal executives and politicians from all over the world with the participation or intervention of Presidents, Prime Ministers, Ministers, Company CEOs, Presidents of Chambers, and other leading figures.

This year the conference attracted over 220 people from over 50 different countries. Academics, practitioners, researchers and Doctoral students throughout the world submitted original papers for conference presentation and for publication in this Book. All papers and abstracts were double blind reviewed. The result of these efforts produced empirical, conceptual and methodological papers and abstracts involving all functional areas of business.

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Many people and organizations are responsible for the successful outcome of the 9th Annual Conference of the EuroMed Academy of Business.

Special thanks go to the Conference Co-Chairs Dr. Katarzyna Śledziewska and Dr. Renata Gabryelczyk, the Conference Organising Committee, the DELab and the University of Warsaw, in Poland, for accomplishing an excellent job.

It is acknowledged that a successful conference could not be possible without the special co-operation and care of the Track Chairs and Reviewers for reviewing the many papers that were submitted to this conference. Special thanks to the Session Chairs and Paper Discussants for taking the extra time to make this conference a real success.

The last but not the least important acknowledgment goes to all those who submitted and presented their work at the conference. Their valuable research has highly contributed to the continuous success of the conference.

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THE CORRELATION BETWEEN VOLATILITY AND VOLUNTARY DISCLOSURE OF FIRMS IN A MULTISTAKEHOLDER APPROACH.

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ABSTRACT

Purpose: Firstly, the aim of our paper is to analyze the relationship between the volatility business industries, measured by standard deviation, and the level of disclosure with reference to the many corporate stakeholders of a representative sample of listed companies.

In particular, we have verified the disclosure about the following stakeholders: customers, suppliers, competitors, institutions, environment, community, human capital and corporate governance and financial lenders.

For each stakeholder, we have selected a list of disclosure items and we determined an index comparing the number of items disclosed by the company to the maximum number of items identified.

Secondly, we tried to highlight the trend over time of the stakeholders' related disclosure, with reference to the years 2006, 2009 and 2012.

Design/methodology/approach: As for the first contribute (analyzing the level of disclosure with reference to the eight corporate stakeholders of listed companies), unlike previous works put in the mainflow "voluntary disclosure literature". Moreover, our study does not dwell only on the analysis of mandatory annual documents but on all corporate documents: annual and consolidated financial statements, management, sustainability and corporate governance reports.

Originality/value: To our knowledge, this is the first study that compute all the stakeholders identified at the same time, by following the "broad" approach of the Stakeholder Theory, that identifies a large number of corporate stakeholders.

Keywords: *Risk, Stakeholder theory, company disclosure, listed company.*

1 INTRODUCTION

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The present study aims to verify the relationship between volatility (Campbell et al., 2001) and voluntary disclosure with reference to Italian companies, in a multi-stakeholder perspective. Economic theory suggests a number of reasons why an increase in disclosure should reduce stock volatility. First, a commonly cited benefit of disclosure is that by mitigating uncertainty, disclosure may reduce the magnitude of the impact of news about a firm's performance, which would reduce stock price volatility (Lang and Lundholm 1993; Bushee and Noe 2000). Second, simple theories of market microstructure theory suggest that by increasing the amount of public information, disclosure is likely to reduce information asymmetries in the market that result in pronounced price changes in response to changes in demand for the stock (Diamond and Verrecchia1991).

There are various factors which influence stock price volatility. Previous research documented that disclosure (Titas Rudra 2010), firm's size,(Chang & Dong 2006) debt-equity,(Bushee & Noe 2000) book to market value (Kothari 2009), return on net worth,(Rubin & Smith 2009) firm's age,(Rubin & Smith 2009) and trading volume (Eric Girard, Mohammed Omran2009) influence stock price volatility. Of all the factors disclosures play a key role on volatility. A full disclosure of information avoids confusion and helps investors to take decisions. Ambiguity in information or no information often leads to decisions which may not prove to be correct.

Research interest in the field of voluntary disclosure dates back to the early 1970s, stemming from the debate between social responsibility and social accounting (Gray and Stone, 1994; Azzone *et al.*, 1996).

The literature in the field of voluntary disclosure, although plentiful and varied, has never used a multi- stakeholder approach. Previous researches do not provide a quantitative analyzing of the disclosure about the different categories of stakeholders.

Firstly, the aim of our paper is to analyze the level of disclosure with reference to the many corporate stakeholders of a representative sample of listed companies. To this aim, for each company, we have built a specific disclosure index for every stakeholders selected and then we have estimated a general disclosure index.

The first contribution provided by our work is to realize, for the first time on the basis of our k nowledge, a specific quantitative analysis on voluntary disclosure in Italian firms. With reference to Italy, does not exist in the literature any quantitative research that has studied the voluntary disclosure in such a wide period and for all the non-financial companies listed in Milan Stock Exchange.

Moreover (second contribution), unlike previous researches, put in the mainflow "voluntary disclosure literature", our study has extended this analysis to all the informative documents of the

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entities. For this purpose, we have analyzed the individual, the consolidated financial reports (with a specific reference to the supplementary notes and notes to the financial annual report), the report on management, the sustainability report and the report on corporate governance, if present.

The remainder of the paper is structured as follows. In paragraph 2 is placed the literature review of voluntary disclosure and stakeholder theory. The paragraph 3 describes the research design, with the sample selection and the estimation of disclosure indicators. In paragraph 4 we will analyse the determinants that affect the volatility of business industry. Next, we will specify the sample examined and the methods of calculating the volatility, including defining the explanatory variables and presenting the econometric model (estimation and model data). We will then provide the results obtained in descriptive terms in terms of bivariate and multivariate analysis. Finally, the last paragraph includes the conclusions.

2 STAKEHOLDER THEORY AND VOLUNTARY DISCLOSURE: LITERATURE REVIEW

Research interest in the field of voluntary disclosure dates back to the early 1970s and is still growing. Voluntary disclosure concerns all non financial information, relate to social, environmental and governance issues. The literature in the field of voluntary disclosure, although plentiful and varied, has never used a multi-stakeholder approach. Prior researches esamined the total voluntary disclosure in different countries (Nuova Zelanda, Messico, Nigeria, Svezia, Giappone, Malaysia, Spagna, Svizzera, Regno Unito, USA, Repubblica Ceca, Francia, Cina, Giordania, Italia, Kenia, Canada, Qatar), without a multistakeholder perspective. According to legitimacy theory, the literature has shown that voluntary disclosure is an important tool of legitimacy (Schipper, 1991; Roberts, 1992; Degan *et al*, 2002; Cho, C.H. and Patten, D.M. 2007; Dumay *et al*, 2015). Indeed, there is a positive relationship between the level of voluntary disclosure and firm size: large companies tend to provide more information in order to meet the needs of its stakeholders and gain greater social legitimacy.

As we said, the aim of our paper is to build a disclosure index that describes the nature, quality and extent of the information provided by each company in the sample with respect to each class of stakeholders. About how to classify and retrieve items of the disclosure, we used a multi-stakeholder approach, integrating stakeholder categories traditionally adopted.

In literature, there are many definitions for "stakeholder", all of which related to the concept of "interest" and "subject to whom they are addressed the attention of management". In this paper, we use the term "stakeholder", according to a definition now shared, for any person or group

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that is considered critical recipient of the business as it affects, or is affected by, the achievement of the objectives of the business organization (Freeman, 1984).

According to Preston (1990), the stakeholder concept originated in the thirties, in the practice of analysts and managers of companies, and has developed at an academic level in the debate on "stakeholder management". In 1932, General Electric identified its four major groups of "stakeholders": shareholders; employees, customers and the general public. In 1947, Johnson & Johnson identified stakeholder groups "strictly business" for any company: customers, employees, managers and shareholders. In 1950 Sears identified, in order of importance and for each company, the following stakeholders: customers, employees, communities and stockholders. In 1958 Dill also considers the category of competitors. In 1963 the Stanford Research Institute summarized the following main classes of stakeholders: shareholders; employees; customers; suppliers; creditors; collectivity.

The systematization of the stakeholder theory is due to Freeman and the authors of "stakeholder management" (Donaldson and Preston, 1995). Freeman (1984) defines "stakeholders" all the actors that influence or are influenced by the company. He, summarizing the previous contributions, classifies them as follows (see also Salomon, 1993; Freeman and Reed, 1983; Williamson, 1985): shareholders and management; customers; employees; suppliers; governments; competitors; trade associations; environmentalists; community; media; any interest group (SIG - Special Interest Group). According to the author, the first four classes are defined "internal stakeholders" and others "external stakeholders". Regardless of the distinction, the existence of stakeholders precedes the company and of its economic activity (RE Freeman, Evan WM, 1990, pp. 337-359). Subjects who matter are all those who are considered always stakeholders, regardless of the perception of the organization. Later this position, based an ethical foundation, was partially modified by Freeman and mitigated in a paper with Evan (1990) in which he provides a more "neutral" definition of stakeholders and reduces the classes to the followings: suppliers, customers, employees, stockholders and the local community (including the management, understood as an agent of these groups).

According to the classification proposed by Clarkson (1995), it's possible to distinguish the following categories of stakeholders (see also Donaldson and Preston, 1995, p. 69): shareholders and investors (including banks); employees; customers; suppliers; governments; community; media; trade associations; political groups; any interest group (SIG - Special Interest Group). The first six classes of stakeholders are defined as primary, because they provide inputs to businesses; the others are defined as secondary, as suffering from the business activity.

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Freeman gave rise the broad stakeholder theory (broad classification of stakeholders). The maximum extension of the broad stakeholder theory includes also environment and the Earth in general as stakeholders, considered as "non-human stakeholders" (Stead and Stead, 1992; Starik, 1994; Jacobs, 1997; Phillips and Reichart, 2000; Driscoll and Starik, 2004).

On the other hand, some authors restrict the definition of stakeholders, adopting a "narrow stakeholder theory". They consider stakeholders only those individuals who in their own business come into close contact with the company. They do not deny, that is, the existence of other interests but place them in the background compared to the former. According to Campbell and Alexander (1997) stakeholders to consider the activity of enterprise are represented by the following classes: suppliers, employees, shareholders and customers. Mahon (2002) also considers other stakeholders that are, however, outline the main stakeholders, especially governments, the media and interest groups, who can choose whether or not to make contact with the company. According this theory, if you can choose to enter or not in the sphere of business are not properly stakeholders.

Table 1: categories of stakeholders in the literature review

Author	Categories of Stakeholder
1932 General Electric	Shareholders, employees, customers and general public
1947 J&J	Customers, employees, managers, shareholders
1950 Sears	Customers, employees, communities and stockholders
Dill (1958)	Customers, employees, communities and stockholders, competitors
SRI (1963)	Shareholders, employees, customers, suppliers, creditors, collectivity
Freeman e Reed (1983); Freeman (1984); Freeman &Evan (1990); Salomon (1993); Williamson (1985)	Shareholders, managers, customers, employees, suppliers, government, competitors, associations; SIG - Special interest group
Freeman & Evan (1990)	Suppliers, customers, employees, stockholders, managers, local community
Clarkson (1995); Donaldson & Preston (1995)	Shareholders, investors (including banks), employees, customers, suppliers, government, communities, media, associations, political groups, SIG
Campbell & Alexsander (1997); Mahon (2002)	Suppliers, employees, shareholders, customers
Starik (1994); Jacobs (1997); Phillips & Reichart (1997); Starik (2004)	Shareholders, managers, investors, customers, employees, suppliers, government, competitors, associations, SIG, environment
Friedman (1970); Porter (1985); Tirole (2001); Jensen (2002)	Shareholders, institutional and financial investors, managers

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The rejection of the theoretical foundations of Freeman, according to a narrow stakeholder management, is due to the objective function of enterprises, namely the increasing in the medium to long-term of company market value: the only people who are facing the business activity are those that are "contained" into the business, which are fundamental parts of businesses because they provided the main factors of production (capital) and because "they risk something". In summary, according narrow stakeholder theory, stakeholder management and balancing of many interests conflicted with the aims of maximizing corporate value. Or rather, the balancing of many interests can take place if and only if it produces value primarily for business owners (Friedman, 1970; Porter, 1985; Tirole, 2001; Jensen, 2002). According to these authors, the actors that influence the company's activities are mainly shareholders, lenders and managers (as agents of these entities), or those who have earned capital (or credit risk). Essentially stakeholders are those who risk their investment and that the shareholders and financial institutions. The following table includes a summary of those observations.

Taking up and synthesizing the above that, and adopting the broad approach, in this paper we refer to the following stakeholders:

- Customers.
- Suppliers.
- Competitors.
- Institutions: institutions are part of the public administration, political groups, trade unions, the government and the state in general.
- Environment: it is understood not only as the associations of environmental protection but as a subject recipient of the business.
- Community: we refer to the community in general, with particular reference to the community in which the activity is pursued, the associations with which it comes into contact the company and any special interest group (public utility or cultural) that each firm believes to influence or from which it is believed affected. In the present stakeholders also includes the relationships with the media.
- Human capital and Corporate Governance: as part of this class we intend to cover any person internal company activities which are mainly employees and corporate governance.
- Financial lenders: lenders intend to shareholders and those who contribute capital (typically banks and financial institutions).

3 RESEARCH DESIGN

3.1 Sample selection

We have selected a sample of firms that were listed on the Milan stock exchange on December 31, 2006, December 31, 2009 and December 31, 2012. To create the sample, we started from the total of firms listed as part of the Milan stock exchange in 2006. We then excluded firms listed after December 31, 2006 and those delisted during the period January 1, 2007 to December 31, 2012. After applying our rules, we obtained a sample of 144 firms and calculated the disclosure indicators in 2006, 2009 and 2012 for each.

3.2 Disclosure indicators

The disclosure index most commonly used in international studies is calculated by comparing the number of items of disclosure applied by individual companies to the total number of applicable items (Hope, 1979; Robbins and Austin, 1986; Wallace et al., 1994; Wallace and Naser, 1995; Meek et al., 1995; Cooke, 1996; Inchausti, 1997; Cammferman and Cooke, 2002).

For each stakeholder, our disclosure index is obtained by scaling a company's number of disclosure items to its total number of available items:

$$0 \le I_j = \frac{\sum_{i=1}^{n} x_i}{n} \le 1$$

The variable n is the number of items concerning the specific stakeholder; x_i is the i-element of disclosure disclosed by the j-company (elements vary from 1 to n).

Thus, for example, if 10 elements (items) must be taken into consideration for the disclosure and company X highlights only three, the index value of disclosure for that particular company is equal to 0.3 (= 3/10).

From the above, it follows that the first step in calculating the index is to determine how many items must be disclosed. As we said, we considered 8 stakeholder, for each we have selected specific items. The number of items is different for each stakeholder as representing in the following table.

Table 2: number of items for each stakeholder

Stakeholder	N° items
Customers	15
Suppliers	9
Competitors	3
Institutions	10
Environment	31
Community	11
Human capital and corporate governance	25
Financial Lenders	22
Totale	126

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The disclosure items have been found in the following documents:

- guidelines of the Global Reporting Iniziative (GRI);
- ESG guideline approved by European Federation of Financial Analysts Societies (EFFAS);
- guidelines developed under CSR-SC project, prepared by the Ministry of Labour and Social Policy at the Italian Presidency of the European Union.

This resulted in identification of 126 items that, according to the sources indicated, should be included in the various corporate documents to give more complete voluntary information about social, environment and governance issues.

We then verified the presence of the items in all documents (financial statements and consolidated financial statements, management report, sustainability report and corporate governance report) from each company.

In order to estimate the disclosure index for each stakeholder, we assigned scores to each item in relation to the quality of information present in the documents examined by distinguishing between:

- *detailed information*: information is expressed in a clear, comprehensive and systematic way about various items of interest, a score of 1;
- *generic information*: information is provided in an inaccurate and incomplete way about the items and as such does not allow a systematic understanding of the phenomenon, a score of 0.5;
- *no mention*: neither qualitative nor quantitative information is available about the items, a score of 0.

In substance, for each item the minimum score assigned is equal to 0 if the item is not present, and the maximum score is equal to 1 if the item is present and described in a detailed way. With reference to the general disclosure index, the minimum score is equal to 0, if the company doesn't give any information, and the maximum score is equal to 126, if the company gives detailed information about all the items.

In literature, researches generally applied a content analysis. We didn't do a content analysis. We matched the words and sentences in the documents and identified for each text whether or not the item was mentioned. An advantage of this manual approach over a computer-aided content analysis is that humans can better judge the meaning of words and phrases within a context. A disadvantage is that a manual approach is less cost-effective and flexible. In addition, human raters can make mistakes and are prone to researcher bias (Krippendorff, 2004). To avoid reliability problems, a team of three researchers built the score. The authors defined the list of items, and three research assistants conducted the analysis on the documents. After training was provided to the assistants by the authors, a preliminary check was performed on a sample of three annual documents.

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4 ANALYSIS.

The sample selection strategy adopted in the previous section was instrumental in the selection of a fixed sample of 144 companies listed on the Milan Stock Exchange for the years 2006, 2009 and 2012. The sample was divided into industry sectors according to the classification of the Italian Stock Exchange. The number of companies belonging to the sector and the relative percentage are shown in Table 3.

Table 3: sample composition

Sectors	# firms	%
Auto/ Prts&Equip.	9	6,25%
Building&Construct	12	8,33%
Chemical	3	2,08%
Commerce	2	1,39%
Fashion and home products	18	12,50%
Food and beverages	6	4,17%
Health	5	3,47%
Hi-tech	18	12,50%
Industrial products and services	29	20,14%
Media	10	6,94%
Oil & Gas	7	4,86%
Public Utilities	11	7,64%
Real Estate	6	4,17%
Telecommunication	3	2,08%
Travel and leisure	5	3,47%
Total	144	100,00%

In this paper we want to relate the Industry volatility to a set of explanatory variables. In the remainder of this section, we will indicate which variables we have chosen for the purposes of our analysis, explaining the reasons behind this choice. In addition, for each variable choice, we will present the hypotheses that we will test in subsequent statistical analyses.

4.1 The dependent variable

The dependent variable is represented by stock volatility of Italian firms (standard deviation). It has been calculated using the average of the standard deviation of individual firms in a given industry. Standard deviation is calculated on firm's weekly equity returns for years 2006, 2009 and 2012.

4.2 The independent variables

The independent variables, at the industrial sector level, in our analysis are the following:

- Business Industry (BI);
- Return on Investment (ROI);
- Unrecorded intangible assets (Q_Tobin);
- Leverage (Lev);
- Size (Ln_Assets);
- Financial crisis (dt);
- Disclosure index (I_Discl).

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4.2.1 Business Industry

With reference to the business industry, we adopted a binary variable that takes the value of 1 if the firm belongs to an industry sensitive to the environment and the value zero otherwise. Sectors were identified using information taken from the Borsa Italiana database. Consistent with the classification proposed by Salama et al. (2012), we considered the following sensitive sectors: energy supply, paper and pulp, extraction and mining, contracting, chemicals, aerospace and defence, steel and auto parts, medical and telecom equipment and food processing.

4.2.2 Return on Investment

Profitability was measured by the return on investment calculated by dividing operational income by capital invested (Clarkson et al., 2011; Dawkins and Fraas, 2009). It has been calculated using the average of the ROI of individual firms in a given industry.

4.2.3 Unrecorded intangible assets

The Q indicator is considered as a proxy of unrecorded intangible assets (Laitner, Stolyarov, 2003). This id defined by dividing the sum of market equity and total liabilities by total assets (Smithers, Wright, 2002). It has been calculated using the average of the Q of individual firms in a given industry.

4.2.4 Leverage

Leverage was measured using the ratio of total financial debt to total capital.

4.2.5 Size

Regarding the size of the company, in line with the main studies on the subject (Anmad et al., 2003; Brammer and Pavelin, 2008; Clarkson et al., 2008; Cormier et al., 2005; Dawdins and Fraas, 2011; Galani et al., 2011; Monteiro and Guzman, 2010; Anbumozhy and Liu, 2009; Mukherjee et al., 2010; Stanny, 2013; Wang et al., 2012; Zarzesky, 1996; Zeng et al., 2012; Zorio, 2012), we used the natural logarithm of the total assets.

4.2.6 Financial crisis

Regarding the Financial crisis, we introduced a dichotomous variable that takes the value of 0 if is the year pre-crisis (2006) on and the value of 1 if the years are 2009 and 2012.

4.2.7 Disclosure Index

The disclosure index most commonly used in international studies is calculated by comparing the number of items of disclosure applied by individual companies to the total number of applicable items (Hope, 1979; Robbins and Austin, 1986; Wallace, 1987; Wallace et al., 1994; Wallace and Naser, 1995; Meek et al., 1995; Cooke, 1996; Inchausti, 1997; Cammferman and Cooke, 2002). The peculiarity of our study is that the disclosure is examined according to a multi-stakeholder approach.

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4.3 *Descriptive statistics*

Table 4 shows the main descriptive statistics for all firms calculated in the three years of the survey for the nine indices analyzed. More specifically, mean, median, minimum and maximum values, standard deviation, skewness and kurtosis were calculated.

Table 4: descriptive statistics

2006	BI	DEV_STD	DT	I_COM	I_COMP	I_CUST	_DISCLOSUR	I_ENV
Mean	0.266667	1.057.780	0.000000	0.037628	0.055586	0.155040	0.133109	0.046923
Median	0.000000	0.805965	0.000000	0.010000	0.027778	0.143103	0.120370	0.011667
Maximum	1.000.000	3.224.143	0.000000	0.210000	0.197273	0.281818	0.279040	0.239091
Minimum	0.000000	0.149665	0.000000	0.000000	0.000000	0.065000	0.071429	0.000000
Std. Dev.	0.457738	0.824750	0.000000	0.055668	0.066913	0.058301	0.055625	0.069116
Skewness	1.055.290	1.485.303	NA	2.177.621	0.885139	0.581879	1.373.686	1.639.333
Kurtosis	2.113.636	4.343.424	NA	7.240.565	2.299.483	2.721.336	4.252.349	4.924.383
	I_FIN	I_HC_GOV	I_IST	I_SUPPL	LEVERAGE	LNASSETS	Q_TOBIN	ROI
Mean	0.262817	0.173499	0.121987	0.107983	2.810.377	1.448.738	3.116.252	6.411.708
Median	0.252222	0.165000	0.115556	0.106667	2.698.706	1.418.105	1.460.478	6.257.500
Maximum	0.394286	0.308182	0.290000	0.228182	4.687.833	1.720.346	1.666.981	1.505.200
Minimum	0.178000	0.084000	0.066000	0.048000	1.985.600	1.254.685	1.038.578	2.081.250
Std. Dev.	0.066677	0.067233	0.053747	0.045230	7.422.955	1.482.843	4.106.551	3.449.336
Skewness	0.560899	0.539732	2.101.826	1.066.361	1.119.239	0.515908	2.711.063	0.814012
Kurtosis	2.202.091	2.575.070	7.553.067	4.311.569	3.805.411	2.127.214	9.236.177	3.656.611
2009	BI	DEV_STD	DT	I_COM	I_COMP	I_CUST	_DISCLOSUR	I_ENV
Mean	0.266667	1.217.207	1.000.000	0.050074	0.065483	0.163840	0.158337	0.073228
Median	0.000000	0.850262	1.000.000	0.028000	0.034000	0.150000	0.143849	0.035556
Maximum	1.000.000	4.134.276	1.000.000	0.201818	0.242727	0.288182	0.311328	0.285455
Minimum	0.000000	0.299318	1.000.000	0.000000	0.000000	0.070000	0.092063	0.006667
Std. Dev.	0.457738	1.149.509	0.000000	0.055405	0.072758	0.060112	0.063598	0.085739
Skewness	1.055.290	1.476.376	NA	1.424.314	1.003.699	0.589969	1.272.809	1.358.653
Kurtosis	2.113.636	4.063.434	NA	4.624.529	3.193.464	2.648.635	3.678.354	3.692.720
	I_FIN	I_HC_GOV	I_IST	I_SUPPL	LEVERAGE	LNASSETS	Q_TOBIN	ROI
Mean	0.298477	0.208003	0.153467	0.120302	3.255.211	1.461.843	1.429.443	1.329.385
Median	0.278333	0.208333	0.148333	0.118276	3.177.500	1.420.665	1.217.692	1.960.000
Maximum	0.454286	0.375714	0.337273	0.282727	6.032.667	1.716.280	3.745.528	1.047.400
Minimum	0.194000	0.098000	0.093000	0.048000	1.792.667	1.236.766	0.822957	-6.048.824
Std. Dev.	0.077164	0.072568	0.063528	0.059277	1.026.304	1.510.215	0.760025	3.892.240
Skewness	0.617709	0.621920	1.686.154	1.242.684	1.199.697	0.450548	2.174.545	0.124655
Kurtosis	2.492.867	3.210.064	5.684.589	4.725.092	4.676.620	2.086.998	6.954.404	3.981.578
2012	BI	DEV_STD	DT	I_COM	I_COMP	I_CUST	_DISCLOSUR	I_ENV
Mean	0.266667	0.614056	1.000.000	0.130524	0.087919	0.287441	0.260035	0.137451
Median	0.000000	0.487302	1.000.000	0.099636	0.100000	0.299667	0.230529	0.081201
Maximum	1.000.000	1.872.727	1.000.000	0.479339	0.199722	0.481818	0.499278	0.508798
Minimum	0.000000	0.125538	1.000.000	0.000000	0.000000	0.137778	0.155492	0.010753
Std. Dev.	0.457738	0.508694	0.000000	0.133952	0.065586	0.091500	0.097208	0.142874
Skawness	1.055.290	1.235.547	NA	1.442.761	0.195065	0.445484	1.290.679	1.439.570
Kurtosis	2.113.636	3.571.876	NA	4.209.557	1.866.003	2.769.772	3.723.561	4.116.508
	I_FIN	I_HC_GOV	I_IST	I_SUPPL	LEVERAGE	LNASSETS	Q_TOBIN	ROI
Mean	0.451847	0.349813	0.229790	0.200510	3.488.323	1.466.661	1.140.975	-2.532.346
Median	0.431818	0.310345	0.195000	0.188889	3.214.250	1.409.053	1.112.296	1.565.000
Maximum	0.613636	0.585714	0.531818	0.373016	7.113.833	1.710.587	1.731.831	4.765.000
Minimum	0.276000	0.166667	0.116667	0.129259	1.725.333	1.244.595	0.760897	-3.102.500
Std. Dev.	0.095473	0.125548	0.118971	0.069535	1.340.393	1.509.549	0.280673	1.005.523
Skewness	-0.045819	0.464867	1.434.662	1.204.079	1.350.984	0.497681	0.852503	-1.911.533
Kurtosis	2.233.441	2.225.381	4.078.673	3.826.952	4.637.180	2.037.461	3.161.795	5.635.492

I_COM=index- Comunity; **I_COMPT**=index -Competitors; **I_CUST**=index-Costumers **I_ENV**=index-Environment; **I_FIN**=index-Financial Lenders; **I_ISTT**= index-Institutions; **I_SUPPL**=index-Suppliers; I_UC_GOV= index- Human capital and corporate governance; **IDISCL**=index-Disclosure

Interestingly overall the disclosure index (IDISCL) took much higher average values in 2012 than in 2009 and 2006. The disclosure level however was still short of the possible maximum value of the index(= 1). More specifically, average indices were respectively equal to 0.13 in 2006, 0.16 in 2009 and 0.25 in 2012.

In the observed period 2006-2012 the indexes with the greatest growth are "Financial lenders"(I_FIN), "Human capital and governance" (I_HC_CG) and "Customers"(I_CUST). The first runs from a value of 0,28 in 2006 to a value of 0,43 in 2012; the second runs, in the same period, from a value of 0,17 to a value of 0,34 and the third runs, in the same period, from a value of 0,15 to a value of 0,29. Instead the indicators with less marked growth are: "Institutions" (I_IST) and "Suppliers" (I_Sup), with values ranging, in the same period, from 0,12 to 0,22 for the first index, and values ranging from 0,11

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to 0,20 for the second. Indexes whit modest growth are: "Environment" (I_ENV) and "Community" (I_COM) with values ranging from 0,04 to 0,12 for the first and values ranging from 0,03 to 0,12 for the second. The index with almost flat growth is "Competitors"(I_COMP) with values ranging from 0,04 in 2006 to 0,08 in 2012.

4.4 Model and method of estimation

Before carrying out the regressions, we verified the possible multicollinearity between explanatory variables using the VIF (*variance inflation factor*). In addition, we used the robust standard error clustered at the firm level (HAC). The regressions were performed using the OLS model. The Breusch- Pagan test attested that this model is preferable to the random effects panel model, and the Hausman test attested that the panel model was preferable to random effects with regard to the fixed-effects panel model.

To test the hypotheses, we performed a multivariate analysis by relating the indices of total disclosure with the explanatory variables identified above.

The regression can therefore be summarised in the following multivariate model:

$$\text{Std. Dev} = \alpha + \beta_1 \text{LNA} + \beta_2 \text{BI} + \beta_3 \text{ROI} + \beta_4 \text{L} + \beta_5 \text{Q} + \beta_6 \text{dt} + \beta_7 \text{I\_Disc} + \epsilon \; [1]$$

Table 5 shows the results of the regression performed.

Table 5: multiple regression - total disclosure index: results

Dependend variable	Standard deviation		
	Coeff	p-value	
const	1,01365	0,4856	
Q_Tobin	0,206962	<0,0001	***
i_Disclosure	−2,37832	0,0341	**
LnAssets	0,0418163	0,7072	
Leverage	0,0222826	0,0418	**
dt	0,333754	0,26	
BI	−0,294757	0,103	
ROI	−0,0288877	0,0776	*
R-squared	0,405374		
Adjusted R-squared	0,392877		
P-value(F)	2,31E-07		
Akaike	108,4541		

* Statistically significant at the 10 percent level.
** Statistically significant at the 5 percent level.
*** Statistically significant at the 1 percent level.

The goodness of fit of the proposed model is presented in Table 5. The regression returns a quite high r^2 value = 0.405, adjr^2 = 0,392). In addition, the small difference between the r^2 and adj r^2 values demonstrates the adequacy of the number of explanatory variables considered. Lastly, still on a general level, it should be noted that the P-values (F) attest the significance of the models as a whole (i.e., all variables simultaneously).

The model confirm that disclosure index has a strong negative effect on the volatility.

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Subsequently it was examined what type of stakeholders disclosure affects volatility, according to the previous model [1] but instead of using the general disclosure index we're going to check what kind of disclosure related to the single stakeholder has effect on volatility. To this aim we performed 8 regressions only changing the variable to disclosure that changed according to the selected stakeholders. For example, for customers:

$$\text{Std. Dev} = \alpha + \beta_1 \text{LNA} + \beta_2 \text{BI} + \beta_3 \text{ROI} + \beta_4 \text{L} + \beta_5 \text{Q} + \beta_6 \text{dt} + \beta_7 \text{I\_Cust} + \epsilon$$

The results of 8 regressions are summarized in the table n. 6

Table 6: multiple regression for each stakeholder disclosure index: results

	Coeff	p-value			Coeff	p-value	
const	0,973831	0,4412		const	1,1799	0,3163	
Q_Tobin	0,203137	<0,0001	***	Q_Tobin	0,205903	<0,0001	***
LnAssets	0,0656927	0,5252		LnAssets	0,0412999	0,6502	
Leverage	0,026372	0,018	**	Leverage	0,0242583	0,0301	**
dt	0,398296	0,1339		dt	0,31036	0,2865	
BI	−0,336896	0,0544	*	BI	−0,338935	0,0854	*
ROI	−0,0276227	0,0713	*	ROI	−0,033646	0,04	**
i_Cust	−3,17784	0,0026	***	i_Suppl	−3,46566	0,0112	**
	Coeff	p-value			Coeff	p-value	
const	0,454153	0,8066		const	0,778003	0,5108	
Q_Tobin	0,208894	<0,0001	***	Q_Tobin	0,207844	4,6735	***
LnAssets	0,060588	0,6463		LnAssets	0,0378969	0,3461	
Leverage	0,0215312	0,0562	*	Leverage	0,0217097	−2,0244	*
dt	0,298204	0,3166		dt	0,312773	1,0768	
BI	−0,275741	0,1127		BI	−0,30999	−1,8707	*
ROI	−0,0240374	0,0953	*	ROI	−0,0222298	−1,5859	
i_Env	−1,96797	0,0657	*	i_Comu	−2,16923	−2,3790	**
	Coeff	p-value			Coeff	p-value	
const	1,02193	0,5074		const	1,47461	0,36	
Q_Tobin	0,202141	<0,0001	***	Q_Tobin	0,211298	<0,0001	***
LnAssets	0,0308528	0,7866		LnAssets	−0,00359769	0,9759	
Leverage	0,0235012	0,0401	**	Leverage	0,0222244	0,0641	*
dt	0,255596	0,4109		dt	0,271749	0,3506	
BI	−0,176632	0,3856		BI	−0,302774	0,0729	*
ROI	−0,0239405	0,0681	*	ROI	−0,0262118	0,0879	*
i_Comp	−3,23784	0,048	**	i_Ist	−1,22781	0,2463	
	Coeff	p-value			Coeff	p-value	
const	1,61759	1,1952		const	1,82402	0,157	
Q_Tobin	0,209472	4,7138	***	Q_Tobin	0,212175	<0,0001	***
LnAssets	−0,00798444	−0,0792		LnAssets	−0,00836752	0,9331	
Leverage	0,0229974	−2,0182	*	Leverage	0,0226262	0,0431	**
dt	0,305385	1,0372		dt	0,287483	0,2958	
BI	−0,251923	−1,3277		BI	−0,243528	0,2115	
ROI	−0,0274377	−1,7331	*	ROI	−0,0354695	0,0493	**
i_HC_CG	−1,19594	−1,5661		i_Fin	−1,43812	0,0409	**

The table shows that the stakeholder that has a strong impact on volatility is Costumers, while the disclosure of Suppliers, Community, Competitors and Financial lenders have a moderate effect on volatility. The stakeholder environment disclosure has a low impact on volatility. Finally Institutions and Human Capital and Corporate Governance they seem to have no effect on volatility.

5 CONCLUSIONS

The present study aims to verify the voluntary disclosure with reference to Italian companies, in a multi-stakeholder perspective. In particular, we have examined the documentation of all non-

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financial firms listed in Milan Stock Exchange in 2006, 2009 and 2012, in order to verify, not only the level, but also the evolution throughout time of the voluntary disclosure.

For this purpose, we have verified the disclosure about the following: customers, suppliers, competitors, institutions, environment, community, human capital and corporate governance and financial lenders. The disclosure index like other indexes have all a growing trend, the only index that has a very limited growth is that of competitors. If the analysis focuses on the sectors with the best scores, they are: Public Utilities, Oil & Gas and Auto/ Parts & Equipment. These sectors are those that have developed, before others, non-financial reporting. Outside investors may view information disclosure as useful because it can influence their investment decisions. The evidence presented in this paper suggests that information disclosure may be useful to the market. Controlling for a number of other factors, such as the size and risk of the industry, we find that industry that discloses more information on key items of disclosure show lower measures of stock volatility than do industry that discloses less information. In our paper, moreover also verify what kind information affect the volatility, in particular we have ascertained that Costumers, Suppliers, Community, Competitors and Financial lenders and Environment disclusure have a moderate effect on volatility while Institutions and Human Capital and Corporate Governance they seem to have no effect on volatility.

In conclusion, we must emphasize that our paper is not without its limitations. As we said, we didn't do a content analysis, but we used a manual approach and we matched the words and sentences in the documents and identified for each text whether or not the item was mentioned. An advantage of this manual approach over a computer-aided content analysis is that humans can better judge the meaning of words and phrases within a context. A disadvantage is that a manual approach is less cost-effective and flexible. In addition, human raters can make mistakes and are prone to researcher bias (Krippendorff, 2004). To avoid reliability problems, a team of three researchers built the score. The authors defined the list of items, and three research assistants conducted the analysis on the documents. After training was provided to the assistants by the authors, a preliminary check was performed on a sample of three annual documents.

Furthermore, it's important to point out that this paper is just the first step of our project. Future developments will be to study the determinants of the disclosure, in order to verify which drivers and the relationship between the voluntary disclosure released and the companies' characteristics, in a multi-stakeholder perspective. Il could also be interesting if the disclosure about the different stakeholder has the same or different explicative variables.

We also will extend our analysis to other countries, in order to formulate comparisons and to understand if the companies, operating in different countries, adopt a different behaviour.

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