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CORPORATE DISCLOSURE: AN ANALYSIS OF DIFFERENT CHANNELS

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*A coloro che
hanno pazienza*

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ABSTRACT

The main objective of this work is to increase the knowledge about corporate disclosure policies through the analysis of two external subjects that may affect the flow of information from companies to the other members of the capital market: press and competitors.

Since financial reporting contains several decision-useful information for resources allocation it can be considered the main means that connects corporate with a wide range of stakeholders. Therefore, firms must identify the features of the users of financial reports, classify their focal needs and disclose information that may hold all the four qualitative characteristics (*relevance, faithful representation, comparability and understandability*) under the two pervasive constraints (*materiality and benefits that justify the costs*)

However, not all the stakeholders have the knowledge and capabilities to efficiently allocate their resources through the assessment of the information disclosed. Consequently, they need information intermediaries that provides new and/or useful information to them. For example, press analyses, aggregates and opportunely communicates information to a wide public with a sufficient degree of credibility. For this reasons, press can be considered as an important information intermediary. However, evidence on the role of press in reducing information asymmetries are few and controversial. In particular, relations between press coverage and corporate disclosure are unclear. In chapter 2 it is argued that journalist pay attention on both firm with higher disclosure quality, which diffuse more credible information, and company with poor disclosure quality that may be more attractive for readers. Using AIRM disclosure scores and structural equation models, press results associated with

more information asymmetries. The cause of this result might be the fact that journalists dedicate more attention to those firms with poor performance or high potential growth. In addition, there is a sort of substitution between official corporate disclosure and press coverage.

On one hand, high disclosure standards are generally associated with a potential loss of competitive advantages; on the other hand, theoretical and empirical evidences showed that, *ceteris paribus*, those firms with better disclosure have higher stock liquidity, lower cost of capital and more intermediation. In other words, the benefits-cost constrain is pivotal in the determination of disclosure level. Since competitors enter in both member of the constrain it seem that the role of competitors is crucial. Beside competitive advantages and the potential benefits, mimicking processes may induce managers to strongly use competitors information. Using AIMR disclosure scores, structural equation models and the identification of industry- leadership in disclosure and in size, in chapter 3 several evidences of the relations between competitors are presented. On one side, managers are induce to follow the behaviours of the leader in disclosure in order to maintain disclosure benefits; on the other, it seems that both firms with good and poor disclosure quality converge to a sort of industry practise. Moreover, while there is no evidence of free-riding, there are strong evidence of both information and reputational herding.

As argued in chapter 4, this work might be interesting for firms, investment analysts and investors. In addition, both press coverage and analysis of competitors disclosure policies may be strategically used by firms in order to achieve more benefits.

PREFAZIONE

Il principale obiettivo di questo lavoro è quello di contribuire ad una maggiore comprensione delle politiche di comunicazione delle imprese attraverso l'analisi di due soggetti esterni che influenzano il flusso di informazioni dalle aziende agli altri membri del mercato dei capitali: la stampa e i concorrenti.

Poiché il bilancio contiene numerose informazioni utili ai fini di una migliore allocazione delle risorse, è considerato il principale mezzo di connessione tra l'impresa e tutti i numerosi stakeholder. Pertanto, le aziende devono identificare le caratteristiche degli utilizzatori dei propri report finanziari, classificare i loro bisogni e diffondere informazioni di qualità (*rilevanti, rappresentative, confrontabili e comprensibili*) sotto i due vincoli di *materialità e rapporto costi benefici*.

Nonostante ciò, non tutti gli stakeholder hanno le conoscenze e le capacità di allocare efficientemente le proprie risorse attraverso la valutazione delle informazioni comunicate dall'impresa. Di conseguenza, hanno bisogno di intermediari informativi che gli forniscano informazioni nuove e/o utili. Per esempio, la stampa analizza, aggrega e comunica tempestivamente, con un sufficiente grado di credibilità, le informazioni ad un pubblico molto vasto. Per questi motivi, la stampa può essere considerato un improntante intermediario informativo. D'altra parte, le evidenze sul ruolo della stampa nel ridurre le asimmetrie informative sono limitate e controverse. In particolare, le relazioni tra stampa e comunicazione non sono chiare. Nel capitolo 2 è argomentato perché i giornalisti prestano attenzione sia alle aziende che hanno una buona qualità di comunicazione, pertanto con informazioni più credibili, sia a quelle di scarsa qualità comunicativa, che generalmente sono più accattivanti. Utilizzando i punteggi dell'AIMR e modelli ad equazioni strutturali, risulta che

una maggiore copertura della stampa è associata ad un livello di asimmetrie informative più elevato. La causa di ciò potrebbe risiedere nel fatto che i giornalisti dedicano molta attenzione alle aziende caratterizzate da basse performance o ad alto potenziale di crescita. In aggiunta, è presente un meccanismo di sostituzione tra comunicazione ufficiale e stampa.

Mentre da un lato, alti standard di comunicazione sono generalmente associati a un potenziale perdita di vantaggi competitivi; dall'altro, evidenze teoriche ed empiriche mostrano come, a parità di condizioni, le imprese con una migliore comunicazione ottengono una maggiore liquidità, un costo del capitale più basso e più copertura da parte degli intermediari. Con altre parole, il vincolo costi-benefici è cruciale nella determinazione del livello di comunicazione. Poiché i concorrenti sono presenti in ambo i fattori del vincolo essi dovrebbero avere un ruolo cruciale nella politiche di comunicazione. Oltre ai vantaggi competitivi ed ai benefici potenziali, processi di imitazione possono indurre i manager ad utilizzare fortemente le informazioni dei propri concorrenti. Utilizzando i punteggi dell'AIMR, modelli ad equazioni strutturali e identificando un leader di settore in base alla qualità della comunicazione ed alle dimensioni, nel capitolo 3 sono presentate diverse relazioni tra concorrenti. Da un lato, alcuni manager sono indotti a seguire il comportamento del leader in comunicazione al fine di mantenere i benefici generati dalla comunicazione; dall'altro, sembra che sia imprese caratterizzate da una buona disclosure che quelle con scarsa qualità comunicativa convergano a una sorta di pratica di settore. In aggiunta, nonostante non ci siano evidenze di free-riding, ci sono evidenze molto forti sia di imitazione delle informazioni che del comportamento dei manager più famosi.

Come discusso nel capitolo 4, sia imprese sia altri agenti del mercato possono essere interessati ai risultati di questo lavoro. In aggiunta, sia la

stampa, sia l'analisi delle politiche di comunicazione dei concorrenti, possono essere strategicamente usate al fine di ottenere maggiori benefici.

CORPORATE DISCLOSURE

THE ROLE OF BUSINESS REPORTING

The intense activities of accounting standard setters underline the importance of financial reporting in providing useful information to external users and increasing the quality of such information. The Financial Accounting Foundation, which controls the Financial Accounting Board (FASB), emphasizes the objective of financial reporting in their mission statement: *“Establish financial accounting and reporting standards, through an independent and open process, resulting in financial reports that provide decision-useful information”*¹. On the same vein, the International Accounting Standard Board (IASB) highlights the need of high quality disclosure. In fact, *“the IASB is committed to developing, in the public interest, a single set of high quality, understandable and enforceable global accounting standards that require transparent and comparable information in general purpose financial statements”*².

Although both the boards have already developed their own conceptual framework - see *Statement of Financial Accounting Concepts No. 1* (FASB, November, 1978) and *Statements of Financial Accounting Concepts No. 2* (FASB, May, 1980) for the FASB and *Framework for the Preparation and Presentation of Financial Statements* (IASB, July, 1989) for the IASB- globalization of capital markets³ has induced the two boards to start a joint project with the goal of

¹ www.fasb.org

² see section *ABOUT US* at www.iasb.org

³ In Healy and Palepu (2001) four forces that may influence the evolution of financial reporting are discussed. First, *rapid technological innovations* might imply a lack of explanation power of financial reporting in knowledge-intensive industries (e.g. the extremely high difference between market and book value for several companies and the accountability of intangible resources) and may produce new disclosure channels (e.g. conference call on line and information collector like EDGAR – the SEC’s Electronic Data Gathering and Retrieval system- and LEXIS/NEXIS) that increase timeliness and diffusion of information (Wallman, 1996).

setting out a unique framework. The draft *“Preliminary Views on an Improved Conceptual Framework for Financial Reporting”* (IASB, 2006a) (DP)⁴ can be considered as the first step of the harmonization process of accounting standards.

From chapter 1, *“The Objective of Financial Reporting”* emerges that the goal of financial reporting, *“providing information that is useful to present and potential investors and creditors and others in making investment, credit, and similar resource allocation decisions”* (DP, S1 and OB2), is based on the needs and interests of different types of users⁵. Although the boards emphasize that a plurality of potential users exists (see DP, OB6-OB9 and paragraph 1.1.1), the purpose of financial reports is achieved if information presented allowed users to *“assess amount, timing and uncertainty of the entity’s future cash inflows and outflows”* (DP,

Second, *the advent of network organizations* affects the identification of the boundaries of the firm (for example, Coca Cola spun off its U.S. bottling operations, Coca Cola Enterprises, in late 1986 – know as the “49% solution”- erasing \$2.4 billion of debt and nominating six member of the board; and the same operation between PepsiCo and Pepsi Bottling Group in 1999). Third, *changes in business economics of audit firms and financial analysts* may arise conflict of interests’ problems due to their consulting activities. Four, *globalization* is the chief force that may induce convergence and harmonization of accounting standards. Beside the effects of international settings on disclosure practices (for example, using a sample of 890 firms from 22 countries during the period 1993-1995 Hope (2003) found that higher level of disclosure improves analysts’ forecast accuracy, while Jaggi and Low (2000) examined the effect of legal systems and culture on disclosure practices in a sample of 401 firms from three common law countries (263 observations) and three code law countries (138 observations)), a few empirical studies have investigated the association between the degree of globalization and disclosure level. In particular, Khanna et al. (2004) showed that non-U.S. firms with more interaction with U.S. capital, product and labor markets are inclined to adopt U.S. disclosure practices. On the same vein, Cahan *et al.* (2005), using a sample of 216 firms from 17 countries belong to Fortune’s Global 500 list and disclosure index based on Botosan’s (1997), found that the level of voluntary disclosure (on voluntary disclosure and on disclosure index see paragraph 1.1.2 and 1.2 respectively) is positively associated to the extent of global operations, but is not related to the extent of global financing.

⁴ DP – discussion paper- refers, hereafter, to the IASB’s publication of preliminary view of the framework. As discussed in P11 of the DP pp 8, *the boards planed to continue separately publishing common discussion papers*. All the quotations of the DP are in the following form (DP, *paragraphs’ code*).

⁵ The boards identified seven groups of users: equity investors, creditors, suppliers, employees, customers, governments and their agencies and regulatory boards and members of the public.

S3 and OB3-OB5) and “*assess management’s stewardship*” (DP, OB27-OB28 and BC1.18-BC1.22). Consequently, for the boards, the needs of external users may converge in requiring “*information about the economic resources of the entity (its assets), the claims to those resources (its liabilities and equity) and the effects of transactions, other events and circumstances that change resources*” (DP, S4 and OB18-OB-OB26). Even if the boards generally refer to financial information, also non-financial information have a relevant role in corporate disclosure. Such importance is due to the fact that external users would like to obtain all the information useful for their assessments (see paragraph 1.1.2). For example, in equity valuation through the discounted cash flow or the residual income methods, forecasting is fundamental for taking good decisions and it depends on the correct identification and usage of relevant value drivers (see Lundholm and Sloan, 2006).

In other words, users’ resources allocation decisions might derive from a complex process of analysis and evaluation of a large amount of information (for a brief summary of main information disclosed see paragraph 1.1.2). Therefore, the boards assume that users “*have a reasonable knowledge of business and economic activities, they are able to read a financial report and they review and analyze the information with reasonable diligence*” (DP, S5 and Qc3-QC6). In view of the fact that not all the potential users meet with these assumptions and the information disclosed through financial reports may not satisfy the needs of all the groups of users, the boards identify a “*group of primary users*” constituted by present and potential investors, creditors⁶ and their advisors (DP, BC1.14-BC1-17).

According to some comment letters to the DP, it seems that the boards are focused mainly on analysts and other sophisticated users rather than on

⁶ The terms *investors* and *creditors* refer to both present and potential investors and creditors hereafter.

investors and creditors (IASB, 2006b). This implies that non-expert users probably obtain decision-useful information through other channels different from official financial reports like analysts, rating agency and media. In fact, firms can directly communicate to stakeholders⁷ by means like financial statements and press releases or indirectly through information intermediaries (Healy and Palepu, 2001). Alternative sources of information like business press and financial analysts which summarize, make comparisons between firms and can empathized bad news may contribute to increase market efficiency through reducing information asymmetries (Bushee *et al*, 2006).

In brief, the features of the users are the main drivers of the identification process of the information that may be disclosed; in particular, the recognition of “*primary users*” implies that non sophisticated stakeholders need to use alternative sources of information.

After the presentation of the nature of information (entity’s resources, claims to those resources and changes in resources and claims) needs by the users, in chapter 2 of the DP, “*Qualitative Characteristics of Decision-Useful Financial Information*”, the features that distinguish more useful information from less useful information are presented and discussed (DP, QC1). In particular, “*the qualities of decision-useful financial reporting information are relevance, faithful representation, comparability, and understandability. The qualities are subject to two pervasive constraints: materiality and benefits that justify costs*” (DP, QC7). The identification of these quality features might be a pivotal step in analyzing disclosure quality (Botosan, 2004). However, literature debates on their measurement is still open.

⁷ According to the boards, although the majority of *stakeholders* may be *users* of financial reports, only stakeholders able to read and analyze financial reports can be classified as users. Since firms can directly communicate to unsophisticated investors, creditors and others, in the case that the assumptions on users can be relaxed the term stakeholders is preferred.

The *comparability* and the *benefits and costs* constrains increase the numbers of financial reporting users because also competitors are interested in disclosure contents. In fact, if information is *comparable* among companies, not only investors, creditors can benefit of the possibility to assess the differences in resources allocation, but also competitors may strategically change their decisions (Darrough, 1993). In addition, it is probable, that managers follow or mimic their competitors' decisions (Chamley 2004; and Hirshleifer and Teoh 2003) or firms free-ride opponents communication (Dye and Sridhar, 1995; Admati and Pfleiderer, 2000 and Jorgensen and Kirschenheiter, 2005 among the others) in order to influence stakeholders, and in particular investors' evaluations. On the same vein, the main *costs* of disclosing decision-useful information is related with the fact that management may communicate relevant information to competitors and occurs in *proprietary costs* (Lanen and Verrecchia, 1987 and Feltham and Xie, 1992). Moreover, since companies compete through disclosure in order to achieve *benefits* like improving stock liquidity, reducing cost of capital and increasing information intermediation, disclosure policies may be the result of a firms strategic interaction between firms.

In summary, since financial reporting contains decision-useful information for resources allocation it can be considered the main means that connects corporate with a wide range of stakeholders. Therefore, firms must identify the features of the users of financial reports (see paragraph 1.1.1), classify their focal needs (see paragraph 1.1.2) and disclose information that hold all the four qualitative characteristics under the two pervasive constrains (see paragraph 1.1.3). In Figure 1, the boards' conceptual framework that put in relations financial reports users and decision-useful information is represented.

Conversely from FASB (1980) –which published a chart label “*a hierarchy of accounting qualities*” pp 20 that represents the relations among qualitative characteristics of information- the boards decided that is premature do present a similar figure (DP, BC2.60-BC2.61). Consequently Figure 1 is an author adaptation of the main concept contained in DP related with this work.

After a discussion on accounting literature on measuring disclosure quality in section 1.2, in section 1.3, information intermediaries as a possible solution of inefficiency⁸ of markets⁹ is presented. In other words, in section 1.3 the boards assumption on financial reports users (see Figure 1) are replaced with both direct and indirect flow of information from companies to stakeholders (see Figure 2 top). In addition, as can be seen in Figure 2 (down) the pervasive constrain “*benefits / costs*” on the trade-off between benefits of disclosure and potential loss of competitive advantage directly introduces the effects of competitors on corporate disclosure policies. In section 1.4 the importance of information intermediaries and the role of industries and the relative competition in the capital market in presented and discussed.

⁸ Since not all the stakeholders can directly obtain information through financial reports for the reason that (since?) accounting standard setters assume their ability of reading, elaborating and analyzing such information (questa non la capisco). Therefore, the inefficiency of the market is due to the fact that not all the players are equally informed and, as consequence, many categories of stakeholders use indirect alternative sources of information.

⁹ Although capital market can be reasonably considered as the main market in which financial reporting has effects, the term *markets* may refer to all the possible different markets to whom each stakeholder may operate (e.g. labor market or market of resources). Nevertheless, the term *market* refers to capital or financial market hereafter.

Figure 1 Summary of IASB and FASB conceptual framework

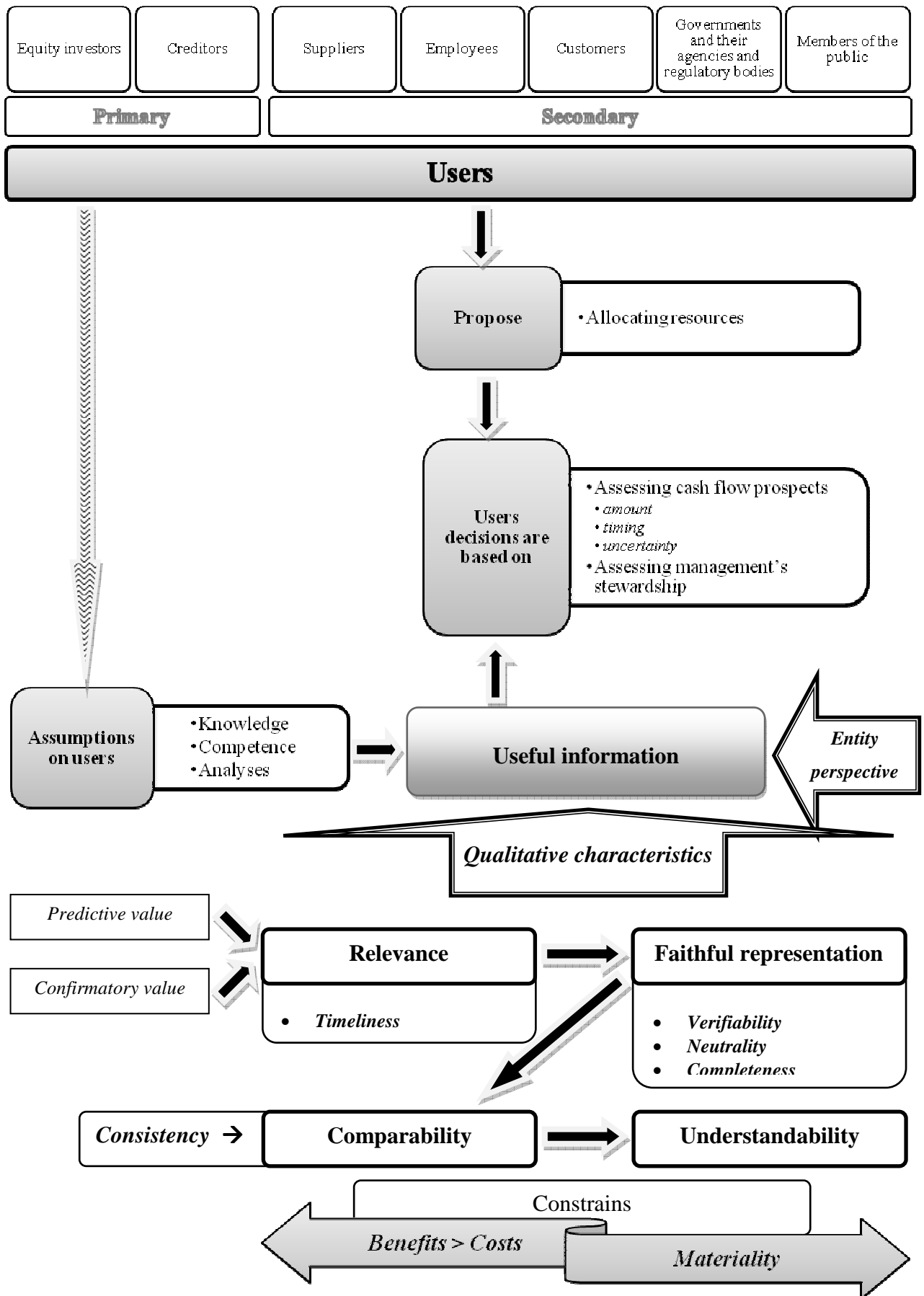
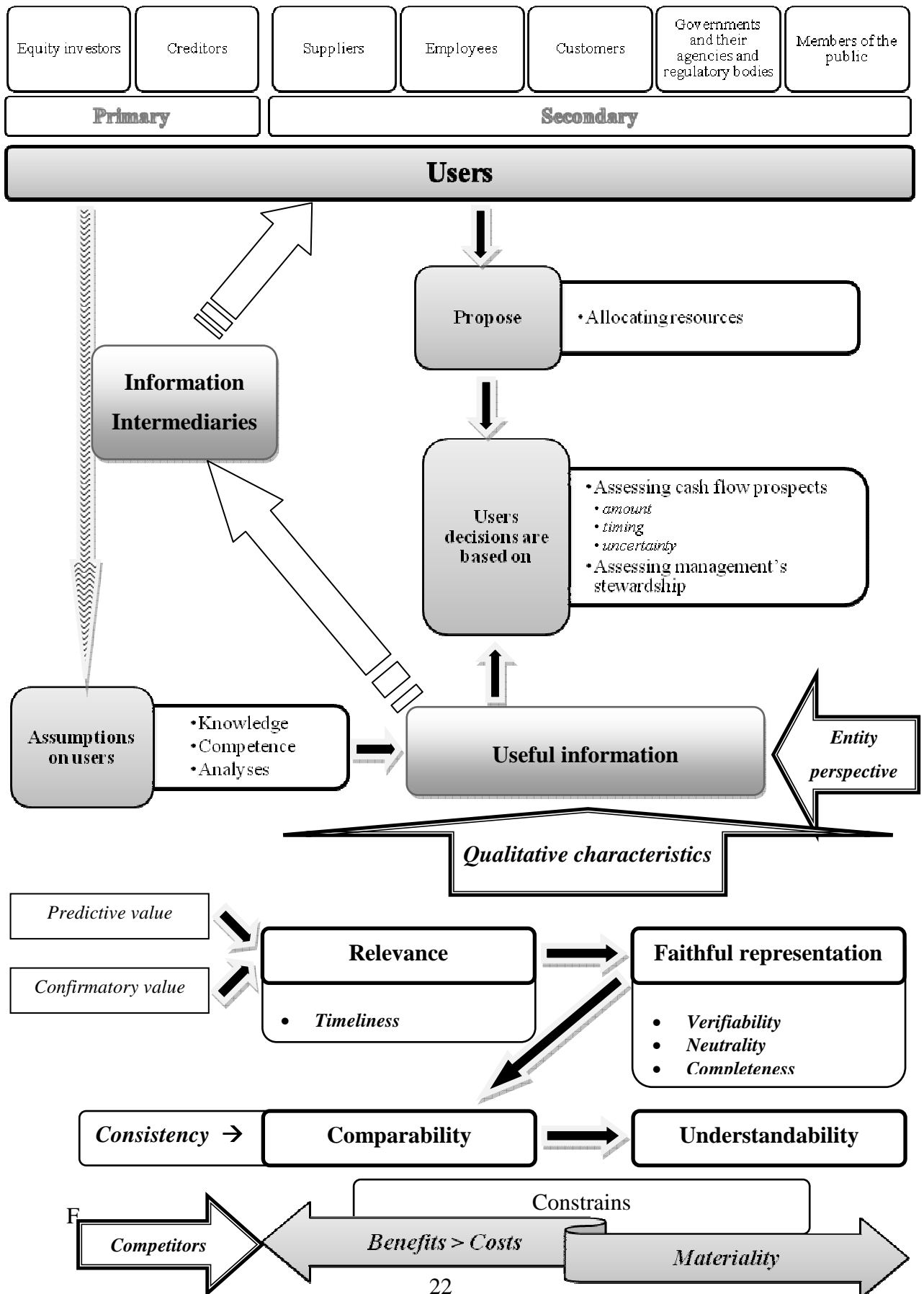


Figure 2 Impact of Information Intermediaries and Competitors in the context of the conceptual framework



1.1.1 FINANCIAL REPORTS USERS

“Accounting is a language that people within a firm can use to discuss its projects and progress with one another, and that they can use to tell outsiders what’s happening in the firm without giving too many of its secrets to competitors” (Black 1993, p. 1). In other words, Black pointed out that the receivers of firm’s disclosure activity are not only investors and creditors; in fact, financial reports are also address to a plurality of stakeholders: internal people, external stakeholders, which include investors and creditors among others, and competitors (Zadeck *et al.*, 1997; Epstein and Birchard, 2000 and Eccles *et al.*, 2001). In the following paragraphs more detail about the three macro classes of stakeholders interested on financial reporting are presented.

1.1.1.1 Internal people

The words “*projects and progress*” in Black’ sentence can be considered as synonymous of all present and potential internal and external actives implicated in firm’s life and the measurement of their performance. Since accounting is the language used to translate activities and performance in financial reports, internal user like *managers* and *employees* are both strongly interested on their development; nevertheless, motivations and needs of such attention are completely different.

Management and governing board of an entity are strongly involved in financial reporting process for many main reasons: *responsibility, remuneration, signaling* and *corporate governance*. First, they are in charge for preparing financial reports and thus they can discretionally influence useful information for the assessment of their stewardship’s responsibility¹⁰. Second, managers’

¹⁰ According to DP OB27 “*management of an entity is accountable to owners (shareholders) for the custody and safekeeping of the entity’s economic resources and for their efficient and profitable use. Management’s stewardship responsibilities include protecting the entity’s economic resources, to the*

compensation is often associated with operating performance and, as consequence; there is an increasing in internal demand of information mainly related with the market of managerial resources (Di Stefano, 1990 and Imhoff, 2003). In particular, Imhoff (2003) argued that in the US, managers have the incentives to manipulate financial results and delay or conceal bad news due to the strong association between accounting results and remuneration instruments like cash bonus and stock option plans. Third and related to the market of managerial resources, the signaling theory explains that manager may use corporate disclosure in order to communicate to the ownership and to other companies their managerial qualities (Watts and Zimmerman, 1986). On the same vein, governing boards may try to attract high qualitative human resources from other organizations trough the signaling of better corporate environment. Fourth, according to Bushman and Smith (2001) and Sloan (2001) financial reporting is both an input and a product of the corporate governance process. Such complex and multifaceted relation between corporate disclosure and corporate disclosure is empirically analyzed in Cerbioni and Parbonetti (2007). They investigated the effect of corporate governance on intellectual capital disclosure of 54 European biotechnology companies between 2002 and 2004 and showed that board leadership, size and composition reduce disclosure quality; while higher proportion of independents improve disclosure quality.

Skinner (1994) and Francis *et al.* (1994) argue that firms disclose bad news in order to avoid litigation costs. In particular, Skinners (1994) in his analysis of earnings disclosure on 93 NASDAQ firms during 1981-90 argues that mangers

extent possible, from unfavorable economic effects of factors in the economy such as inflation or deflation and technological and social changes. Management is also accountable for ensuring that the entity complies with applicable laws, regulations, and contractual provisions. Because management's performance in discharging its stewardship responsibilities significantly affects an entity's ability to generate net cash inflows, management's stewardship is of significant interest to users of financial reports who are interested in making resource allocation decisions".

disclose bad news in order to maintain their reputation and reduce legal costs in two ways. First, they decrease the possibility to be accused to holding information since it is more difficult to determinate the when management received the bad news. Second, reducing the damages that investors may claim. On the other hand, Skinners (1994) find also that market reacts strongly to bad news than good news, in other words there is a strong disincentive in disclosing bad news. On the same vein, Francis *et al.* (1994) found that

In addition, since stock options and other financial instruments are related with company performance, as ownership assesses management's behaviors trough disclosure, managers need information for controlling the activities of their peers.

On the other hand, employees (see also Table 1), and in particular their unions, need to assess corporate future strategies in order to evaluate their future employment conditions and performance of their pension plans¹¹. In addition, many firms encourage their employees to become a shareholder¹²; therefore, also employees' remuneration is related with corporate performance.

1.1.1.2 External stakeholders

As already introduced in the paragraph about internal people financial reporting actives are mainly related with resources allocation decisions of external stakeholders. Present and potential investors and creditors and their advisors, suppliers, customers and institutions belong to this macro category (see also Table 1, in particular for a description of suppliers and costumers).

¹¹ For example, under SFAS 158 General Motors might have to recognize a liability of \$ 69 billion related with Other Postretirement Employment Benefits in 2005.

¹² See the examination of the behaviors of Enron's management in Arnold and De Lange (2004)

Nevertheless, not all the external stakeholders are equal to each other; indeed, as already discussed, the boards identify a “*primary groups*” of sophisticated users. In addition, Diamond (1984) discussed how financial intermediaries improve resources allocation. Consequently, there are several types of investors and financial intermediaries with different needs and roles: *institutional investors, private investors, sell-side analysts, buy-side analysts, financial media* and *public institutions*.

Institutional investors audience, also called the buy-side, is constituted by professional investors from various types of institutions (e.g. life assurance companies, insurance companies, pension fund, hedge funds, unit trust, investment trust and other investment management group) and tend to dominate stock exchanges in several countries. In particular, these institutions, each one with its own style and method of tracking funds, may manage money on their own behalf or on behalf of another fund; therefore large institutional investors are likely to prefer to have direct contact with the company in which they invest rather than only mandatory disclosure forms and schedule (see Holland (1997) for a discussion on corporate communication with institutional shareholders and an analysis of private disclosure and financial reporting). Under the same consideration also banks can be considered as institutional investors with very preferential relations¹³.

Private investors can be a very loyal group of shareholders; in fact, the majority of them do not trade as often as institutions and their decision to buy stocks are based on press comment rather than advice from their bank, broker or other representative (London Stock Exchange, 2003).

Sell-side analysts work alongside brokers, but also institutional investors use their analysis, and tend to have an expert knowledge of a specific sector.

¹³ See for example the crucial role of the banks in Parmalat and Cirio scandals.

Their main activity is to publish research on a company in order to increase the trading in that stock; even though this conflict of interest, sell-side analysts can be considered as good information intermediaries (Healy and Palepu, 2001)

Differently from sell-side, *buy-side analysts* mainly work for large institutional investors. In fact, buy-side's studies started to substitute sell-side's researches due the conflicts of interest between the latter and the firms (London Stock Exchange, 2003).

On the same vein of financial analysts, Healy and Palepu (2001) underlined the importance of another information intermediary: the *financial media*. While institutions and broker decisions are mostly based on analysts' reports, business press, analyses, aggregates and opportunely communicates information to a wide public with a sufficient degree of credibility (Dyck and Zingales, 2002). Because of that, financial media can be considered as an important information intermediary that provides new and/or useful information to investors (Bushee et al., 2006) (see section 1.3 for a wider discussion)

Public institution interested in corporate reporting are governments, which are primarily interested in taxation form and schedule and their agency and regulatory bodies. In particular institutions like stock exchanges, accounting setters and auditors are strongly involved in the disclosure process due to their mission on investor protection. In addition, members of the social environment in which the company operates require information. According to Shocker and Sethi (1974) any social institutions, and business is not an exception, operates in society via a social contract, expressed or implicit, whereby its existence and growth are based on the achievement of objectives desirable by the environment in general and the distribution of economic, social

or political benefits to main stakeholders. In other words, organizations have to continually legitimate their presence to the social environment.

1.1.1.3 Competitors

Theoretical accounting literature provides several setting that explain why managers could choose not to fully communicate their information in order to protect firm competitive advantage (Wagenhofer, 1990) and pursue their own interests (Dye, 1985 and 1986). In particular, firms can lose competitive advantage both on operational and financial level. The former is generally related with investors pressure on valuable information on value drivers and strategies; while the latter can be associated to information free-riding for modify investors' perception of firm value.

Moreover, some managers merely follow competitors' behaviors. In literature two type mimicking process are discussed: information herding and reputation herding. While in the first case managers imitate the others in general, in the second one they emulate more famous managers.

A detailed analysis of the role of competitors on disclosure policies is discussed in chapter 3.

Also the DP taxonomy (see Table 1) of financial reports users (equity investors, creditors, suppliers, employees, customers, governments and their agencies and regulatory boards and members of the public) is essentially based of the stakeholder theory¹⁴. Nevertheless, one category of sophisticate users, competitors, is excluded, while financial analysts and financial media are only marginally considered as merely advisors of investors and creditors. As results, information intermediaries seem to be considered as subordinate to the

¹⁴ On concepts, evidences and implication of stakeholders theory see, among others, Amaduzzi (1974), Freeman (1984) and Donaldson and Preston (1995).

investors and creditors needs, whereas their active role in distributing corporate information is pivotal for the firms¹⁵.

DP classification considers present and potential stakeholders that are directly involved in decision processes of resources allocation¹⁶ in or from the firm. In other words, it seems that the DP nomenclature is based on two criteria: the presence of specific rights on one or more resources used by the firms (e.g. investors, creditors, suppliers and employees) and probably implications on users' decisions due to direct usage of firm's resources¹⁷ (e.g. customers might assess if the firm is able to continue to provide them goods and services¹⁸, control responsibility of the governments on economic resources allocation and public is interested on firm's contributions to local development and growth). While the groups derived by the former criterion seem to be consistent with the objective of the financial reports¹⁹, the latter emphasizes the decision to adopt the "*entity perspective*"²⁰ as the basic perspective underlying financial reporting instead of "*proprietary perspective*" (see Figure 1).

¹⁵ For example London Stock Exchange guideline for investor relations (2003) underline the crucial role that both sell-side and buy-side analysts and financial press must have in the organization of investor relation activities and consequently their influence on the capital market.

¹⁶ Both present and potential assessments and controlling activities of past decisions (e.g. cash or assets lenders) are considered part of the allocation resources decision process.

¹⁷ The term *direct* implies the exclusion of competitors as financial reports users; in fact, competitors may indirectly change their own resource allocation due to what it is disclosed. As it is going to be argued in paragraph, 1.4.2 competitors are a very important category or sophisticated users.

¹⁸ Customers with long-term involvement regulated through contracts satisfy both criteria

¹⁹ In general, since creditors are already protected by detailed contracts in some comments letters is argued that they may not be included (IASB, 2006b)

²⁰ See discussions in DP OB10, BC1.9, BC1.11 and BC1.12 and paragraphs 24-27 of the comment letters report (IASB, 2006)

Table 1 DP's financial reports users

Group	Description
Equity investors.	Equity investors in an entity are interested in the entity's ability to generate net cash inflows because their decisions relate to the amounts, timing, and uncertainties of those cash flows. To an equity investor, an entity is a source of cash in the form of dividends (or other cash distributions) and increases in the prices of shares or other ownership interests. Equity investors are directly concerned with the ability of the entity to generate net cash inflows and also with how the perception of that ability affects the prices of its equity interests.
Creditors	Creditors, including purchasers of traded debt instruments, provide financial capital to an entity by lending cash (or other assets) to it. Like investors, creditors are interested in the amounts, timing, and uncertainty of an entity's future cash flows. To a creditor, an entity is a source of cash in the form of interest, repayments of borrowings, and increases in the prices of debt securities.
Suppliers	Suppliers provide goods or services rather than financial capital. They are interested in assessing the likelihood that amounts an entity owes them will be paid when due.
Employees	Employees provide services to an entity; employees and their representatives are interested in evaluating the stability, profitability, and growth of their employer. They are interested in information that helps them to assess the entity's continuing ability to pay salaries and wages and to provide incentive payments and retirement and other benefits.
Customers	To its customers, an entity is a source of goods or services. Customers are interested in assessing the entity's ability to continue to provide those goods or services, especially if they have a long-term involvement with, or are dependent on, the entity.
Governments and their agencies and regulatory bodies	Governments and their agencies and regulatory bodies are interested in the activities of an entity because they are in various ways responsible for seeing that economic resources are allocated efficiently. They also need information to help in regulating the activities of entities, determining and applying taxation policies, and preparing national income and similar statistics.
Members of the public	An entity may affect members of the public in a variety of ways. For example, an entity may make a substantial contribution to the local economy by providing employment opportunities, patronising local suppliers, paying taxes, and making charitable contributions. Financial reporting may assist members of the public and their representatives by providing information about the trends and recent developments in the entity's prosperity and the range of its activities, as well as the entity's ability to continue to undertake those activities.

In summary, the boards' classification of users seems to be more oriented to the identification of those groups that needs a sort of protection of their

rights rather than recognition of all the stakeholders that actually use financial reports.

1.1.2 OFFICIAL DISCLOSURE: MANDATORY AND VOLUNTARY

Several economics studies have long argued that the adverse-selection problem inherent in a seller simultaneously offering an asset for sale to a potential rational buyer, the seller, although s/he can hold information about the asset's quality, will reveal the information (Grossman and Hart, 1980; Grossman, 1981 and Milgrom, 1981). Nevertheless, accounting literature posits that disclosure is not costless (Viscusi, 1978 and Verrecchia, 1983); consequently, managers exercise discretion in disclosing information and choose to not fully communicate their information in order to protect firm competitive advantage and pursue their own interests. For the former target, the presence of proprietary costs induces companies to prefer partial-disclosure strategies (Wagenhofer, 1989). For the latter, Dye (1985, 1986) underlined that managers failure to disclose their non proprietary information because they can successfully suppress bad news and hold some proprietary information that belong to their array of private information. Moreover, the uncertainty of market reactions related with the credibility of the information may suggest to management with better performance to partially disclose valuations and forecasts (Dutta and Trueman, 2002 and Sansing, 1992). As a consequence, the optimal level of disclosure may not be the maximal one; therefore, only selections on information are providing to the capital market.

The majority of empirical (CITANE almen o 3 o 4) studies argue that the corporate disclosure process are involved, beyond income and financial information, all those information for keeping, improving or developing relations with stakeholders. Corporate disclosure is focused on buttressing firm

identity and building a strategic reliability for increasing company possibilities (cit). To the aim to achieve those results recipients might be able to read the firms with the eyes of the management, in fact organizations have to supply all those information that stakeholders need in order to take their decisions and improve the value of their investments (cit). According to CICA (2002), companies must integrate financial e non-financial information that presents clearly business models and strategies. In fact, Epstein and Palepu (1999) underlined that the disclosure about strategies, risk and value drivers is perceived as inadequate by the analysts. Lev and Zarowin (1999) argued that if the relevance of financial statement had declined over time because of the growth of intangibles in companies; moreover, they provided evidence that the gap between book value and market value has increased over the past twenty years and, in particular, in high technology and knowledge-intensive industries (e.g. pharmaceuticals, bio technology and software). Therefore, the financial statements were becoming less relevant and investors started to ask others sources of information on the value-creation role of the intellectual capital and its impact on share valuation(cit). In addition, Francis and Schipper (1999), under perfect foreknowledge condition, showed that a user of financial information is only able to earn 50% of all the returns available in a typical year. In other words, financial statements have lost a significant portion of their relevance to investors and firms must voluntary disclose other information.

Someone may argue that possible solution of this lack on information could be solved trough an extension of mandatory information. However, the different interest alignment between stockholders and management and the bias due to the uncertainty related with the accounting system chosen by the firm can not be easily solved through mandatory disclosure. An implication of Viscusi (1978), Grossman (1981) and Milgrom (1981) models is that mandatory

disclosure is unnecessary, since voluntary disclosure would be forthcoming anyway. According to Fishman and Hagerty (2003), these results depend on the assumption that investors understand information and correctly infer its value. Although only informed stakeholders will benefit from mandatory disclosure, Fishman and Hagerty (2003) suggested that the major results are achieved in regulating disclosure in markets where product information is relatively difficult to understand. In other words, even though mandatory disclosure is very important, it is not able to satisfy the demand of information from investors and analysts (Epstein and Palepu, 1999; Lev and Zarowin, 1999 and Francis and Schipper, 1999); consequently firms integrate it with voluntary information.

Nowadays there is a consensus that financial reporting needs to be expanded and firms may produce business reports that emphasises forward-looking and non-financial information (e.g., Elliott, 1992; AICPA, 1994; Wallman, 1995, 1996a, 1996b, 1997; Beattie, 1999; Lev and Zarowin, 1999; FASB, 2001; Lev, 2001; ICAEW, 2003;). In 1994 AICPA published an extremely influential report, well known as the Jenkins Report, that proposed a comprehensive model of business reporting that embraced a '*broader integrated range of information*' (p. 131) adopting a customer focus. This model comprised eight main topics (financial data, operating data, management analysis, forward-looking information, information about management and shareholders, objectives and strategy, description of business and industry structure) and many sub-topics. With the same propose, but adopting an ex-ante analysis of main organizations disclosure practise²¹ in eight industries²², FASB published the Steering Committee Report in 2001. The committee

²¹ The terms *disclosure practices* refer to both type of information and the channels adopted.

²² The industries studied were: automobiles, chemicals, computer systems, foods, oil-integrated domestic, pharmaceutical, regional banks and textile-apparel.

developed a business report model that encourages companies to provide information about:

- *business data* on
 - sales: geographical and product segmentations, sales strategies, qualitative information on sales and marketing teams
 - products: old and new products trends, product development and agreements, current and potential customers
 - operations: utilization of production facilities, mergers and acquisitions, employees productivity and labour contracts
 - financial performance: evolution of earnings, margins and stock prices and comparisons with the industry
- *management's analysis of business data* on
 - sales: trends and seasonality, impacts of new market conditions and products
 - products: disclosure of company's goals and projects, alliances and distribution channels
 - operations: discussion on R&D expenses and labour conditions
 - financial performance: discussion on financial situation and companies performances, identification of key trends
- *forward-looking information* on
 - sales: forecast by segment
 - products: new products and implication of patent that will expire
 - operations: targets and projected cash flow
 - financial performance: forecasts of earnings and performance measures
- *information about management and shareholders*
- *background about the company* on

- sales: legislation in the industry
- products: details about key products, brands and trademarks
- operations: facilities and types of employees
- financial performance: strategy for mergers and acquisitions
- *information about unrecognised (in financial statement) intangible assets*

Nevertheless, both the reports (Jenkins and Steering) encourage firms to provide the previously described type of information. In the Steering Committee Report is argued that only financial statements, which are regulated by accounting standards, can be considered mandatory disclosure; nevertheless, it is recognized that firms voluntarily disclose other valuable information in order to comply to SEC's requirements (FASB, 2001).

With 2,764 listed companies the New York Stock Exchange (NYSE) is the largest stock exchange in the world by dollar volume²³ (as of December 31st 2006, the combined capitalization of all New York Stock Exchange listed companies was \$25.0 trillion) and after NASDAQ, which has 3,200 securities²⁴, NYSE has the second most securities of all stock exchanges. Therefore, it is reasonable to consider U.S. capital market as the most developed one and good examples about the nature of information demanded by investors, creditors and other institutions can be extrapolated from SEC's requirements.

In Table 2, the most common SEC forms and schedules are listed and described. As can be seen, comprehensive overview of the company's business and performances, interim results and information about ownership and management are disclosed to the market. Within this list, the crucial role of annual reports in informing financial reports users is underlined in several papers (see Beattie *et al.* 2004 for a very good review of the literature).

²³ Source www.nyse.com

²⁴ Source www.nasdaq.com

Therefore, the information contained in Form 10-K (see Table 3) summarizes the main financial and non-financial information provided by the company.

Table 2 Common SEC filings

Filing	Description	Timing
Form 10-K	Annual report pursuant to section 13 and 15(d). It provides a comprehensive overview of the company's business. (Audited)	Depending on size, within 60-90 days of the close of the fiscal year
Form 10-Q	Quarterly report filed pursuant to sections 13 or 15(d). It provides a continuing view of the company's financial position and activities during the year. (Unaudited)	For each of the first three fiscal quarters. Depending on size, within 40-45 days of the close of the quarter
Form 8-K	Interim report which announces any material events or corporate changes that occur between 10-Q quarterly reports.	When necessary
Proxy Statement (DEF 14A):	It contains official notification (mainly merger and acquisitions) to designated classes of shareholders of matters to be brought to a vote at a shareholder's meeting.	Before annual meeting
Form 13F	It is quarterly filed by institutional investors managing over \$100 million and includes the name and amount of each security held.	Quarterly
Schedule 13D	Notification of a holding of 5% or more of any class of a company's shares by a single investor or group working together.	Within 10 days of the acquisition event
Form 3	Initial statement of beneficial ownership (Insider transactions)	Within 10 days of becoming an officer, director, or beneficial owner
Form 4	Statement of changes in beneficial ownership (Insider transactions).	Within 2 business days
Form 5	Annual statement of changes in beneficial ownership (Insider transactions).	If necessary, it is due 45 days after the end of the company's fiscal year
Form S-1 and S-3	General form of registration statement.	

As can be seen, general information about the business activities, competitive conditions, government regulations and risk factors are presented in part I.

In item 1 the business of the company is described and a detailed discussion of company's past and expected future business activities is discussed. In particular, information about main products sold, subsidiaries owned and markets in which the company operates are provided. It may also include recent events, competition, regulations, and labor issues. Other topics in this section may relate with special operating costs, seasonal factors, or insurance matters. In addition, there is a special item (1A) in which the company lays out anything that could go wrong, external effects, and possible future failures to meet obligations. In other words, risks are disclosed to adequately warn stockholders, potential investors and stakeholders in general.

Item 2 required that significant properties, both physical assets and intellectual properties are described. While in item 3 the company discloses any significant pending law suit or other legal proceeding and in item 4 any matters submitted to a vote of security holders are disclosed.

Part II starts with summary of stock performance and dividend activities (item 5) and a list of key financial data for the last five years (item 6). One of the main sections of the 10-K is item 7: Management's Discussion and Analysis (MD&A). Any firm factors that might affect the company's liquidity, results of operations, capital resources, off-balance-sheet arrangements and contractual obligations are discussed. In addition, item 7A provides qualitative and quantitative analysis about market risk.

After the introductory part and MD&A, the company's financial statements and supplementary data are provided. In details, two-year audited balance sheets, three-year audited income and cash flow statements are included

in this section. Moreover, detailed notes and schedules, significant accounting policies and an independent auditor's opinion are reported.

The last part of part II is item 9 which require information about changes in disagreements with independent auditors or any accounting principles or practise. With the Sarbanes-Oxley Act item 9A, an opinion of senior managers and auditors about the effectiveness of the company's internal controls and procedures over financial reporting, was added.

In part III and IV information about directors, executive officers and certain beneficial owners and principal accountant fees and services are respectively report.

Table 3 Items of disclosure contained in Form 10-K

PART I	
Item 1	Business
Item 1A	Risk Factors
Item 2	Properties
Item 3	Legal Proceedings
Item 4	Submission of Matters to a Vote of Security Holders
PART II	
Item 5	Market for Registrant's Common Equity and Related Stockholder Matters
Item 6	Selected Financial Data
Item 7	Management's Discussion and Analysis of Financial Condition and Results of Operations
Item 7A	Quantitative and Qualitative Disclosures About Market Risk
Item 8	Financial Statements and Supplementary Data
Item 9	Changes in and Disagreements With Accountants on Accounting and Financial Disclosure
Item 9A	Controls and Procedures
PART III	
Item 10	Directors and Executive Officers of the Registrant
Item 11	Executive Compensation
Item 12	Security Ownership of Certain Beneficial Owners and Management
Item 13	Certain Relationships and Related Transactions
PART IV	
Item 14	Principal Accountant Fees and Services

In summary, the large amounts of decision-useful information provided in the audited annual reports required by the SEC meets almost all the types of information described in both Jenkins and Steering reports. Although, the form 10-K is mandatory for the listed companies it is mainly narrative, therefore, managers can discretionally choose the amount and the quality of information communicated. This has two main implications: identify the characteristics that guarantee the usefulness of the information and the role of information intermediaries. In fact, given the dispositions of qualitative characteristics of the information by the accounting standard boards both sender (company) and receiver (users) might converge to a firm-specific set of decision-useful information. In addition, if the users recognize that they need other information, they may use means like investor relations, their own publications and press.

1.1.3 QUALITATIVE CHARACTERISTICS OF DECISION-USEFUL INFORMATION

From the previous paragraph it emerges that standard setters and the wide range of stakeholders encourage companies to provide a *complex system* of information. Using the framework for the study of complex system proposed by Amaral and Ottimo (2004) in physics, this system is *complex* because a large numbers of units²⁵ are involved, each element is able of interacting to others and the system is adaptable to external conditions. Although, by means of disclosure practices firms communicate several information each of them must be decision-useful information. Therefore, managers have the responsibility to process information in order to make it useful (IASB, 2003). In fact, each real-world economic phenomena (resources, sale prices, new products, employees,

²⁵ In general, both information and entire report can be easily considered as unit or element. In addition, Amaral and Ottimo (2004) argued that units may have complex internal structures; they may be not identical and may not have strictly defined roles.

tax rate and so on) that pertain to the entity must enter in financial reports and relative depictions in words and numbers must hold four qualitative characteristics: *relevance*, *faithful representation*, *comparability* and *understandability* (IASB, 2003). In addition, the qualities are subject to two pervasive constrains: *materiality* and *benefits that justify the costs*.

Although the boards argued that there is not a hieratical relation among the qualitative characteristics, such features are presented in the logical sequence discussed in paragraphs QC42-47 and BC2.60-65 of DP. Based on those conclusions the four qualities and the two constrains are illustrated in Figure 1. In particular, although information it may be not comparable to others or it may be too complex or difficult to understand, if it is relevant, it must be disclosed. In other words, comparability and understandability are subordinated to reliability and faithful representation.

1.1.3.1 Relevance

Relevant information, or better the most relevant description of the real-world phenomena, is capable of making a difference in the users decision process when it helps them to assess the potential effects of past, present, or future transactions or other events on future cash flows (*predictive value* –see DP, QC10-12) or to confirm or correct their previous evaluations (*confirmatory value* –see DP, QC13-14) (DP, S7 and QC8-9). Moreover, information may be disclosed before that it loses its capacity to affect assessments; statement differently, *timeliness* is another aspect of relevance (DP, S7 and QC15).

1.1.3.2 Faithful representation

Whenever the depiction chosen is the most relevant, it must be also a faithful representation of the real-world economic phenomena that it purports

to represent. In order to be a faithful representation of those economic phenomena, information must be *verifiable*, *neutral*, and *complete* (DP, S8 and QC16-22). In particular, verifiability implies that different knowledgeable and independent observers would reach general consensus without material or methodological bias (DP, S9 and QC23-26). Neutrality is reached in absence of bias that may generate particular behaviors (DP, S10 and QC27-31), while completeness is achieved if all the specific information are reported (DP, S11 and QC32-34).

1.1.3.3 Comparability (including consistency)

Once the information is reliable and it is faithful representation of the economic phenomena, it must comparable and allowing users to identify similarities in and differences between two sets of economic phenomena. In addition, information must be consistent with accounting policies and procedures, from period to period within an entity or in a single period across entities (DP, S12 and QC35-38).

1.1.3.4 Understandability

Firms must state information in an understandable form that permit to users with a reasonable knowledge of business and economic activities and financial accounting, and who study the information with reasonable diligence, to comprehend its meaning. Understandability is enhanced when information is classified, characterized and presented clearly and concisely (DP, S13 and QC39-41).

In the following two paragraphs the pervasive constraints on financial reporting are discussed.

1.1.3.5 **Materiality**

Materiality is related with the capacity on information to influence resource allocation decisions simply when it is omitted or misstated. In particular, firms may evaluate the nature and the amount of the item before judging to omit it (DP, S14 and QC49-452).

1.1.3.6 **Benefits and costs**

“The benefits of financial reporting information should justify the costs of providing and using it” (DP, S15 and QC53). On one hand, under the agency theory framework (see Akerlof, 1970 and Jensen and Meckling, 1976), empirical researches provide evidence of benefits for the firm due to the fact that increased disclosure reduces information asymmetry and consequently (see Marcus and Wallace, 1991; Mahoney, 1991; AICPA 1993; and Healy and Palepu, 2001) *improves stock liquidity* (Healy et al., 1999), *reduces cost of capital* (Botosan and Plumlee, 2000) and *increases information intermediation* (Lang and Lunholm, 1993 and 1996). On the same beneficiary, i.e. the company, but concerning social and environment disclosure (see among others Guthrie and Parker, 1989) and adopting the legitimacy theory²⁶ approach, Gray *et al.* (1995 and 1996)²⁷

²⁶ Lindblom (1994) identify four strategies which a corporation, seeking legitimation, may adopt. First, the organization may seek to educate and inform its “relevant publics” about (actual) changes in the organization’s performance and activities (This strategy is chosen in response to a recognition that the “legitimacy gap” arose from an actual failure of performance of the organization). Second, the organization may seek to change the perceptions of the relevant publics – but not change its actual behavior (This strategy is chosen as a response when the organization sees that the legitimacy gap has arisen through misperceptions on the part of the relevant publics.). Third, the organization may seek to manipulate perception by deflecting attention from the issue of concern to other related issues through an appeal to, for example, emotive symbols (This strategy is chosen on the grounds of manipulation. One illustration is when a company with a legitimacy gap regarding its pollution performance chooses to ignore the pollution and talk instead of its involvement with environmental charities, etc.). Fourth, the company may seek to change external expectations of its performance (This strategy is chosen when the organization considers that the relevant publics have unrealistic or “incorrect” expectations of its responsibilities.).

argue that companies inform stakeholders about their capabilities and intentions to continue their activities and maintain their social role. As results, stakeholders may positively assess the firm and persist to allocate resources in favor of the firm.

On the other hands, financial reporting and financial reporting standards impose direct and indirect costs on both preparers and users of financial reports, as well as on others such as auditors and regulators. Di Stefano classified five types of direct and indirect costs on firms:

- **Direct operative costs:** costs of collecting and processing the information
- **Internal political costs:** costs generated by the actions of some organized group of internal people (i.e. employees and stockholders) that possibly ask specific information, they may diffuse private information or cause litigation costs (see Skinner, 1994)
- **Public political costs:** costs caused by the decisions of external institutions (i.e. governments, regulators and customers' associations) or litigation
- **Competitive costs or proprietary costs:** indirect cost due to possible losses in competitive advantage caused by the diffusion of strategic information.
- **Indirect operative costs:** since firms are required to disclosure partial results, among earning management practise, management may focus their attention on short-term performances rather than long-term outcomes.

²⁷ In their analysis of a longitudinal database from 1979 to 1991 of The Time 100 list Gray *et al.* (1995) mainly shows how social environmental disclosure have been improved during the considered period.

On the same vein, users may occur in direct costs of collecting reports and other useful information, analyzing and interpreting information. Financial analysts and media may also occur in indirect costs generated by loss of credibility of their value added information in case of adverse general economic conditions or scandals. Moreover, cost related to industry-specific regulations (present or potential) may incur to other users like auditors, government and their regulatory bodies.

DISCLOSURE QUALITY

From the previous section it emerges that business reporting users encourage company to disclose financial and non-financial information among a wide range of topics and the needs of decisions-useful information is satisfy, at least partially, when the information hold the four qualitative characteristics (relevance, faithful representation, comparability and understandability). Nevertheless, in Healy and Palepu (2001) and in its discussion by Core (2001) it is clear argued that the main limitation on empirical disclosure studies is due to the fact that a universally accepted definition of disclosure quality is still missing; and consequently, the measurement of disclosure is controversial.

Beattie *et al.* (2004) argue that the 'quality' of narrative accounting disclosures is a complex, multi-faceted concept that may be defined in several ways. For example, they reports thee definitions based on different approaches: *investors' believes, reputation and understandability*:

- analytical studies define disclosure quality in terms of the precision of a Bayesian investor's beliefs about security value after receiving the disclosure (e.g., Diamond & Verrecchia, 1991)
- disclosure quality as the degree of self-interested bias in the disclosure (e.g., King, 1996)
- quality is defined as the ease with which investors can read and interpret the information (e.g., Hopkins, 1996).

In order to measuring disclosure quality, Botosan (1997) suggested to start from boards qualitative characteristics; nevertheless, according with her discussion on Beretta and Bozzolan (2004) it may be a very had challenge measure such features. In addition, annual reports are not the only business

reports and the increasing complexity of business strategies, operations, and regulations decrease the possibilities that investors appreciate financial information on its own without clear, accompanying explanations (Marston & Shrivess, 1991). In fact, several empirical studies are focused on specific topics disclosed: intellectual capital (see among others Guthrie and Petty, 2000; Brennan, 2001, Bozzolan *et al.* 2003, Guthrie *et al.*, 2004; and Cerbioni and Parbonetti, 2007), social responsibility (Guthrie and Parker, 1986 and Patten, 1992) and risks (Beretta and Bozzolan, 2004). Moreover, all these studies are based on classification of the information contained in the annual reports using content analysis (for a complete description of content analysis see Krippendorff, 1980). Although Beretta and Bozzolan (2004) have tried to improve the conventional literature, which was based on the assumption that quantity is a good proxy of quality, proposing a framework that considers quantity, density, depth and outlook profile, a robust approach is still far to be achieved.

Researchers self-made index are one of the possible approaches used to measure disclosure. According to the taxonomy provide in Beattie *et al.* (2004) five different methods can be used:

- **Subjective ratings:** industry expert financial analysts (in particular, Association of Investment Management and Research –AIRM-) score corporate disclosure. The usage of such score is mainly diffused in US and Canada; nevertheless, AIRM discontinued the publication in 1997. Major example of researches in which AIRM score had been used are: Lang and Lundholm (1993 and 1996) on analysts following and forecast's precision, Botosan and Plumplee (2001) on cost of capital, Healy *et al.*(1999) on stock price performance, Sengupta (1998) and Nikolaiev and VanLent (2006) on debt rating and cost of debt; and Brown and Hillegeist

(2005) on information asymmetry. In addition to the fact that subjective ratings are mainly a perception of the users rather than a measure of disclosure quality and that recent scores are not available, Healy and Palepu (2001) critics a lack in clarity in the formulation of the scores and a strong selection bias

- **Disclosure index:** mainly diffused in Europe and Australia are based on the research classification of the information reported in the form analysed. Beside the examples previously provided on specific topics (for a detailed literature review see also Marston and Shrivess 1991), Botosan (1997) construed her index on voluntary information contained in annual reports.
- **Thematic content analysis:** a holistic content analysis of the entire text
- **Readability studies:** such studies are based on the assessment of cognitive difficulties in reading the information.
- **Linguistic analysis:** similar to readability, the index capture a richer set of text features.

Another classification of the approaches which it may be less influenced by the richness of the information capture in the index is the following:

- **Sender approaches:** in other words is based on asking to management to evaluate their disclosure. However, such approach may be affected by managers' bias. In addition it is very costly and, consequently it is applicable to a restrict number of firms (see Guthrie 2007)
- **Receiver approaches:** users evaluate corporate disclosure (see subjective rating in Beattie *et al.* (2004) taxonomy)

- **Third party approaches:** manual or computer based content analysis of the information contained in firm's reports (see Guthrie *et al* 2004)

Although many scholars argued that other information channels are increasing their importance and contain valuable information (Wallman, 1995, 1996a, 1996b and 1997), the majority of the studies on corporate disclosure are focused on annual report. A possible justification on the usage of annual report is due to the fact that it summarizes all the main decision-useful information. Nevertheless, researchers have started to investigate also other disclosure channels like investor relation (IR) activities (for example Marston and Straker 2001 investigates IR in Europe), internet web site (see Craven and Marston, 1999 with UK companies) and strategic plan (for example, Bozzolan and Mazzola, 2007 explored the Italian case)

In summary, in accounting literature several examples of disclosure measures, and in particular disclosure quality indexes, have been suggested and discussed; nevertheless, only using data obtained with receiver approach (i.e. AIRM scores) it is possible to assess disclosure as a combination of a plurality of channels.

THE FLOWS OF INFORMATION

Although voluntary disclosure contained in annual reports has dramatically increased the quantity and the quality of decision-useful information that companies communicate to stakeholders, the former do not completely satisfy the needs of the latter for three main factors: *complexity*, *timeliness* and *support*. These factors derive from the fact that firms have several and different channels for disclosing information. The AIRM (1993) generally identifies three main channels: annual reports, other official publications and investor relations activities. Although all these three channels are influenced by the three factors, each of them is mainly characterized by one. In particular, annual reports are generally the documents with the biggest amount of information, the intense publication of interim reports or press releases improve timeliness, while, investor relations activities may complete corporate disclosure with a direct contact with stakeholders.

1.1.4 HOW MANY INFORMATION?

One of the main discrepancies between theoretical and empirical studies is related with the fact that former are primarily focus on the disclosure of a limited number of different signals and the relative interpretations by receivers in a particular setting; while the latter try to analyze a multitude of information truly communicate by the firms. As discussed in section 1.2 the main challenge in measuring the amount or the quality of disclosure is the large amount of decision-useful information provided to stakeholders while accounting setter assumes that users have sufficient knowledge to understand information. Statement differently, users of business reporting must face off and process with a multitude of information; thus, they search for alternative

source of information like analysts' reports and press. Healy and Palepu (2001) argue that an information intermediary provides new and useful information to other parties. In particular, the fact that information is not previously public available or known by a restrict number of stakeholders make the information diffused by information intermediaries new and useful.

While several studies have been focus on financial analysts (for a complete review of empirical studies see Healy and Palepu, 2001 and the relative discussion by Core, 2001) only recently and with different results, the role of the press has been considered relevant in the capital transaction processes (Dyck and Zingales, 2003, Chan, 2003, Frankel and Li, 2004 and Bushee et al., 2006). According to Bushee *et al.* (2007) business press is able to disseminate corporate information to a wide public composed by both sophisticated and unsophisticated stakeholders. Moreover, media aggregate and credibly communicate information (Dyck and Zingales, 2002) on a variety of topics (Thompson *et al.*, 1987). In particular, Thompson *et al.* (1987) codifying all the 42,053 articles on the Wall street Journal Index of the Corporate News section in 1983 found that earnings announcements is the main category of information provided (20.9%); followed by dividend announcement (16.8%) and product related information (15.4%); while forecast/analysis, assets changes, capital/ownership changes and management-related news cover around 10% each.

While the fact that media are able to diffuse corporate information to a wide public seems to be reasonably accepted, the effects of press coverage in reducing information asymmetries are not clear. Using 526 earning observations between 1998 and 2002²⁸, Dyck and Zingales (2003) found that

²⁸ The original dabase was assebled by Bradshaw and Sloan (2002): "GAAP versus The Street: An Empirical Assessment of Two Alternative Definitions of Earnings", Journal of Accounting Research, Vol. 40, No.1, pp.41-66, March

media spin affect the stock market response to earning announcement in alignment with companies interests. While, Chan (2003) found that investors underreact in presence of press news and inferred that they overreact to unobserved stimuli. Moreover, Frankel and Li (2004), given a negative correlation between financial statement relevance and both analysts following and press coverage, argued that, in presence of more information asymmetries, analysts and news releases act in substitutive terms relating to corporate disclosure. Consequently, as underlined in Bushee et al. (2006), in which are analyzed almost 700 thousands articles on earnings announcements of 1,249 medium-sized NASDAQ growth firms during the period from 1993 to 2004, high press-initiated coverage can independently reduce information asymmetry.

1.1.5 TIME FOR DISCLOSING

Timeliness is a crucial feature of information relevance and the extremely dynamic relations within the markets imply that annual schedule for financial reporting is not sufficient and, as consequence, the role of periodic disclosure (e.g. earnings statement) is crucial for stakeholders, investors in particular, assessments (Kanodia and Lee, 1998). Wallman (1995 and 1996a) identify two key causes for suggesting timely disclosure: shorter product cycles²⁹ and new financial instruments. In addition, the multiplication of present and potential investors due to globalization, the stronger role of institutional investors and the application of new technologies, which had reduced transactions both in time (the majority of operations can be executed on-line) and space (operations can be conducted from everywhere), have implied an increase of the attention on ownership structure. Moreover, timeliness increase the efficiency of the

²⁹ In Wallman (1995) is argued that *“even quarterly reports do not capture and communicate material developments in sufficient time to meet market information needs”* (pp. 86)

market because it may reduce the time that informed investors take advantage of private information discovered against the uninformed (Hakansson, 1977, Verrecchia, 1982 and Diamond, 1985).

After the recent scandals (Enron, WorldCom and Parmalat among others) the American legislator has rescheduled the timing of main forms and schedules (see Table 2). In general, depending on the type of forms and on the size of the company, firms have to complete their disclosure process from 2 to 90 days after the event. In particular, the constrain of 2 business days for the *statement of changes in beneficial ownership* is a clear example of how faster must price sensitive information must be disclosed. Nevertheless, managers still have some discretion on choosing the better time to disclose certain types of information (Verrecchia, 2001) (e.g. earnings announcements, signing of contracts or new products development). Furthermore, there are several factors that may affect disclosure timing on the same topic. For example, using a sample of 11,071 firm-year observations, from 1995 to 2000 in US, Sengupta (2004) found that the lag between the end of the fiscal year and the quarterly earning release is negatively associated with measures of investors base (trading volume, number of stakeholders and institutional ownership) consistent with the argument that investors' pressure on timeliness. Such delay is also negatively associated with higher risk of litigation costs (proxed with knowledge-intensive industries and with the percentage of non-executive directors), with accounting complexity (diversified companies, numbers of acquisitions and non-zero special items).and also with the earnings sign (lower than the median of analysis' forecast).

Statement differently, on one hand stakeholders ask for a more timely disclosure and on the other firms can, in several cases, shift the diffusion of information on time. Moreover, the amount and the propose of information in

each disclosure moment are different, for example in audit annual reports a complete summary of decision-useful information are contained, while non-audit press releases about new orders from an important customers is a single price sensitive information that may possibly affect stakeholders' assessments. A possible classification of disclosure moment may distinguish between: annual (e.g. annual reports or shareholders' annual meeting), schedule infra-annual (quarterly reports or conference call) and *ad hoc* (press releases or answer to telephone questions).

1.1.6 WRITTEN AND ORAL DISCLOSURE

As previously said, the Sarbanes-Oxley Act, signed into law in July 2002, requires larger firms to accelerate the filing of their Form 10-Q and 10-K; in addition, these companies will be required to timely public such forms on their web sites. According to Deller *et al.* (1999) the Internet is an alternative distribution channel for corporate disclosure with the quality of combining cost reduction for the reporting information with additional benefits for the target groups and firms due to an improvement of interaction between firms and stakeholders. In other words, though the Internet firms can increase the distribution of corporate reports (availability and almost unlimited store capacity), identify users (using cookie technology), providing press releases (constitute mailing lists) and online participation to general meetings and analysts conferences. In summary, both stakeholders and firms rapidly understood the new possibilities that the Internet provide and made it as one of the fasted developing communication channels (Spaul, 1997) (see Pirchegger *et al.*, 1999 and Deller *et al.*, 1999 for two surveys in Austria and U.S., U.K. and Germany respectively). From the express diffusion of the Internet it may inferred that stakeholders pay strong attention to other disclosure channels that

may fulfil their needs. On the same vein, but much before the Internet, stakeholders in general and in particular investors (private and institutional or present and potential) and analysts, asked for a direct interaction with managers in order to complete the information obtained through forms and press releases.

The London Stock Exchange (2003) stated that *Investors Relations (IR)* encompasses the broad range of activities through which a quoted company communicates with its current and potential investors and in its guideline it is argued that the aim of an IR programme should be focus on a clear, honest and accurate picture of the company past performance and prospects for the future. In order to improve stakeholders' assessments, IR officers have several means like main meetings (meetings on quarterly, interim and preliminary results; annual general meetings; institutional investors and analysts meetings; media briefing; regional shareholder meetings and road shows); web sites and electronic communications; and web casts and conference calls.

Statement differently, IR integrates activities such as creating useful voluntary disclosure, attracting analyst and media following, and targeting desired investors for the company (Brennan and Tamarowski, 2000; Hong and Huang, 2005). Firms incur significant direct costs in undertaking these activities; for example, an IR program in a typical US small or newly-public firm will require 20-25% of the CEO's time and approximately 50% of the CFO's time (Hong and Huang, 2005). In contrast, an extensive investigation of the process³⁰ and consequences of investor relations activities conducted by Bushee and

³⁰ Bushee and Miller (2005) argued that (1) IR process focuses on management access and company visibility as key drivers of the strategy's success, (2) disclosure practices are not primary focus of IR and whether they are changed is highly conditional on the context, (3) the IR strategy often must progress in stages, with visibility and increased trading by the existing investor base preceding increases in following by institutions and analysts, and (4) the course of the IR strategy depends on prior visibility and can be limited in its success for small companies on less liquid exchanges.

Miller (2005) shows that following from investors and information intermediaries is increased by IR. Using a comparison between a sample of 184 companies hiring IR firms between 1999 and 2004 and control sample matched on exchange, industry, time listed, and prior investor following, the authors founded that the former group of companies have significant increases in their disclosure, press coverage, trading activity, institutional investor ownership, analyst following, and market valuation after hiring the IR firm.

The positive implication of IR activities may be due essentially for the improvement of written disclosure produced in business reporting through an intense interactive oral disclosure during management presentations like conference calls and analysts' presentations.

Corporate conference calls are large-scale telephone conference calls during which managers make their presentation in 15-20 minute and answer questions for 30-45 minutes. Such disclosure means provide benefits to both the company and its analysts. From the company's perspective, conference calls save time and mitigate selective disclosure problems, because management can talk to hundreds of analysts and money managers simultaneously³¹, and the investor relations staff receives fewer calls (Frankel *et al.*, 1999). Reporting the results from a survey of 122 analysts and portfolio managers by Christensen and Associates (1992)³², Frankel *et al.* (1999) argued that from the analysts' perspective, the benefits of conference call include the opportunity to hear the questions of others analysts (55%); saving time and money vis-à-vis travelling to meetings (45%); the receipt of timely information (13%); and the receipt of information at the same time as other investors (9%).

³¹ Quoting a survey on 147 companies by the National Investor Relations Institute (NIRI) – “*Technology Survey*”, 1996- Frankel *et al.*(1999) report that 97% invite buy-side and/or sell-side analysts, 92% (77%) invite current and potential institutional investors, 38% invite brokers, 22% invite current individual stockholders and 10% invite media to their conference calls.

³² Christensen and Associates, 1992: “*Survey on Teleconferencing*” Stamford, Connecticut.

On the same vein, the benefits from communication made at corporate presentations to securities analysts are empirically investigated in Francis *et al.* (1997) using a sample of 1,199 presentations to the New York Society of Securities Analysts (NYSSA)³³ made between 1986-1992. The study shows that analyst following is significantly increased after presentations and firms, in particular underpriced ones, benefit of significant positive abnormal returns. Moreover, presentations provide minimal benefits to securities analysts; in fact, although there is no evidence of improvement in forecasts accuracy, analysts may indirectly benefit from the brokerage revenues associated with the high trading volume around presentations.

In summary, firms can choose between pluralities of direct channels to communicate with stakeholders. As already presented, regulated and mandatory financial reports – i.e. financial statements, footnotes and management discussion and analysis (see table 1)- and voluntary communication -such as management forecasts, press releases, analysts' presentations and conference calls and internet sites- (Healy and Palepu, 2001). Although, management try to optimize the usage of these different channels in order to achieve the benefits of disclosure, Botosan and Plumlee (2002) find that each channel is differently associated with cost of equity capital³⁴.

³³ NYSSA presentations last 30-45 minutes and consist of planned remarks delivered by a company official followed by questions and answers. In addition, with the exceptions of some firm-initiated presentations, companies are invited by the director of the NYSSA and have to support the costs associated to management's time, travel and accommodation plus a fee based on the type of media coverage desired.

³⁴ Using AIRM disclosure scores, Botosan and Plumlee (2002) found that high quality disclosure in annual reports is negatively associated with cost of capital, while other published reports and investor relations activities are, respectively, positively associated and uncorrelated with cost of equity capital.

Such controversial results may be due to the fact that stakeholders obtain analysis and suggestion from their advisors like financial analysts' reports and media and, consequently, they are influenced by them.

THE EFFECTS OF COMPETITORS ON DISCLOSURE POLICIES

1.1.7 THE IMPORTANCE OF THE INDUSTRY ON CORPORATE DISCLOSURE

Besides industry-specific mandatory disclosure, each sector is characterized by different disclosure practice in terms of contents and usage of the channels. As discussed in paragraph 1.1.2 on the voluntary disclosure topics, according to the Steering Committee Report (2001) value drivers, general features and decision-useful information dramatically vary among industries. Therefore, also disclosure practices change through sectors and through channels. In fact, on one side the Steering Report collect several examples that may not be applied to other sectors; on the other hand, analysts attribute diverse level of relevance to each disclosure channels based on sectors (Healy *et al.* 1999). Moreover, the meta-analysis conducted by Ahmed and Courtins (1999) among 29 studies conducted in diversified environment and with firms with different features (i.e. size, listing status, leverage, profitability and audit firm), underline the determinant role of sectors in corporate disclosure. On the same vein Chavent *et al.* (2006) present a review of empirical studies on disclosure in Appendix A and found that industry is statistically significant very often.

Since disclosure guidelines encourage the communication of comparable value drivers and performance indicators, opponents business reports are a valuable resource of information. On stakeholder side, from competition analyses using financial reports (see Salvioni, 2002) to equity evaluation (see Lundholm and Sloan, 2006) comparison with peers companies is always highly recommended. While from the competitors point of view, business reports are used as benchmark and also as a valuable source of strategic information on current and future activities and performance.

In addition, the signaling theory argues that managers may use business reports in order to provide evidences of their qualities to other companies and in particular to competitors.

1.1.8 THE COMPETITION ON CAPITAL MARKET

In addition to the diffusion of proprietary information, some theoretical studies show that firms free-ride competitors communication (Dye and Sridhar, 1995 Admati and Pfleiderer, 2000 and Jorgensen and Kirschenheiter, 2005 among the others) in order to influence stakeholders' assessment, and in particular investors' evaluations. Statement differently, high performance firm reacts with good news when the opponent had already disclosed a bad news (i.e. there is separating equilibrium); on the opposite case firm let stakeholders infer that the positive condition just reported are truth for all the companies that belong to the industry (free-riding).

Beside the possibility to find competition relevant information, after the disclosure disincentive due to proprietary cost, or hiring high quality managers and the free-ring riding effects, firms have another important reason for reading and analyzing competitors' disclosure: potential changes in disclosure policies. In general, portfolio strategies suggest investors to diversify their wallet within and among industries; therefore, companies that belongs to the same industry compete for the same group of present and potential investors. All the major empirical works quoted in Healy and Palepu (2001) on disclosure benefits (improving stock liquidity Healy *et al.*(1999), reducing cost of capital (Botosan and Plumlee, 2000) and increasing information intermediation (Lang and Lunholm, 1993 and 1996))³⁵ ranked disclosure index within the industry in the same year. Therefore, it may be inferred that common behaviours underline

³⁵ Note that in all these researches AIRM disclosure index are used as proxy of quality disclosure.

disclosure practise. In addition, and probably the key point, all this positive effects from disclosure depend on competitors' decisions because the achievement of such benefits is based on relative ranking position.

The previous consideration may suggest that firms change their disclosure policies based on the behaviors of competitors. Following the criteria of leadership used in FASB (2001) as good example of disclosure practices, it argued that the disclosure strategies adopted by bigger firms drive the behaviors within the industry. Moreover, since companies can be considered as sophisticated users, also the policy of the leader in corporate disclosure may be followed as benchmark.

PRESS COVERAGE AND DISCLOSURE

QUALITY

INTRODUCTION

Although corporate disclosure has a crucial role for the functioning of an efficient capital market (Kothari, 2001), the demand of information from the investors is only partially satisfied by official firm's communication. Alternative sources of information which summarize, make comparisons between firms and can empathized bad news (see Hamilton and Zeckhauser, 2004 about media coverage of CEOs) may contribute in reducing information asymmetries. The press, for example, analyses, aggregates and opportunely communicates information to a wide public with a sufficient degree of credibility (Dyck and Zingales, 2002). For this reason, press can be considered as an important information intermediary that provides new and/or useful information to investors (Bushee et al., 2006). Miller (2006) investigated the press's role as a monitor or "watchdog" for accounting fraud and he provided evidence that both actions of original investigative reporting and broadly rebroadcasting information from other intermediaries facilitate earlier public knowledge of a fraud.

Empirical evidences from disclosure and press coverage literature argue that both of them reduce information asymmetries (see Healy and Palepu, 2001 and Core, 2001 for the former and Dyck and Zingales, 2003, Chan, 2003, Frankel and Li, 2004 and Bushee *et al.*, 2006 for the latter). However, one main issue remain unexplored: the relation between corporate disclosure and press coverage. In this chapter I analyse this issue. In particular, I analyse if journalists prefer to dedicate more news about firms with high quality of

disclosure, or fill in information in case of low quality official communication. The first case suggests that press has a weaker contribution in increasing efficiency in capital market; while the second (see Frankel and Li, 2004) implies that press coverage has a relevant role in reducing information asymmetries.

In order to analyse the impact that disclosure and press coverage have on information asymmetries, such relation must be controlled by the common determinates and the indirect effect that these factors may have on information asymmetries through the others. First of all, both disclosure policy and press coverage may be caused by condition of information uncertainty. In presence of information uncertainty managers are induced to disclose better information in order to stabilize the market believes and meet stockholders' expectations. At the same time, newspaper readers may be more interested in receiving more information in case of uncertainty.

Besides the negative impact that both high disclosure quality and wide press coverage have on information asymmetry, in both fields, the size of the firm results always as a significant determinant of the diffusion of corporate information (see Ahmed and Courtis, 1999 for corporate disclosure and Frankel and Li, 2004 for press coverage). In addition, other factors that may influence both disclosure and press converge like debt, profitability, potential growth and risk.

The aim of the paper is twofold. First, to investigate if the quality of corporate disclosure is associated with the quantity of press coverage³⁶. In particular, I analyse with which type of disclosure (annual report, quarterly and other published reports, and investor relations) this relation is stronger. Second, I investigate if in presence of information uncertainty both firms and press

³⁶ I assume that high press coverage is a good proxy of the quality of the information contained in the news, while, as presented later, analysts' evaluations of firm disclosure are good measures of the quality of firm external communication

increase disclosure quality and coverage respectively in order to reduce information asymmetries.

In order to verify that, 56,055 news published between 1985 and 1996 in the 55 main US newspapers (see Appendix A) in The Wall Street Journal (WSJ) and in the Financial Times (FT) have been collected. In addition, also 13,082 press releases have been collected. Such news refer to 119 firms (835 firm-year observations) and they are considered only if the company's name is in the headline or in the abstract for the WSJ³⁷. Conversely from previous press coverage researches, by using Lexis-Nexis database, the subject (mergers and acquisitions, employees, sales, management, debt and research and development) of each new is classified³⁸. Consistent with many previous studies, including Lang and Lundholm (1993 and 1996), Healy *et al.* (1999), Sengupta (1998), Botosan and Plumbee (2001), Nikolaev and Van Lent (2005) and Brown and Hillegeist (2005), the scores elaborated by the Association of Investment Management and Research (AIMR) are used as proxies of disclosure quality.

Results indicate that there is only some weak direct association between total press coverage in the Financial Time and disclosure quality in the annual report. In addition, only news about research and development in generic newspapers are positively associated with annual disclosure and investors relations activities. As in previous researches, I find that size has a strong and positive effect on both disclosure quality and press coverage. Moreover, if the role of the presence of information uncertainty and information asymmetries (accuracy and the dispersion of analysts' forecast) are jointly analysed and the

³⁷ The difference between the two criteria applied to include the news is due to the fact that for all the news published before 1994 in the WSJ Lexis Nexis reports only the abstract.

³⁸ Since the classification of the topic of the news required the entire text published and the usage of the abstract may produce bias results, the subject of the news have been collected only for US main news paper and for the Financial Time. As discuss later, WSJ has been excluded in the first part of the analysis and included in the second one.

results show that behaviours of firms and journalists are controversial. In fact, on one side the presence of high information uncertainty induces press to report mainly official Press Releases; on the other, more press coverage is associated with high asymmetries information. In addition, conversely from some prior studies I find that annual reports disclosure has a positive significant effect on information asymmetries. These findings suggest that press is an independent information intermediary and it behaves as a substitute of corporate disclosure when firm has poor timeliness disclosure.

The remainder of the chapter is organized as follows. In section 2 the related literature on disclosure quality, information asymmetry and press coverage is discussed. In section 3 hypotheses are presented. In section 4 a description of the sample, the variable measurement and the methodology are provided. In sections 5 results are reported and section 6 concludes.

PRESS BIAS

Not only resource allocation decisions may be affected by press, in general, the news media plays an essential role in society by providing information to the public for both individual and collective decisions. However, it is widely viewed as biased (Baron, 2004). A survey of 3,000 Americans started in 1997 commissioned by the American Society of Newspaper Editors (ASNE, 1999) revealed that almost 80% of the public believed there was bias in news reporting³⁹. Although around 50% declare that this bias generate minor problems of credibility only 10% indicates no problems. Mullainathan and Shleifer (2003) and Gentzkow and Shapiro (2005) showed that media tend to distort information in order to align it with consumers' prior beliefs.

The ANSE (1999) provided controversial results about the source of such bias. On one hand, there is an internal bias. In fact, only 68% of the journalists, respect the 93% of the people, believed that the mission of the newspaper is to tell the fact right rather than provide indication on its interpretation. Moreover, 77% of the public thought that newspaper pay more attention on news that support their agenda or their point of view. On the other hand, distortion due friendship with the source (57%) and the pressure by special interest groups (79%) are the main source of external bias. In particular, almost 50% answered that politicians are the most influential group; while 28% indicated that main business and wealthy people have this role. The relation between media and special interests group is investigated in Stromberg (2004), Petrova (2007) and Dyck *et al.* (2005). The first paper argue that economy of scale is the main cause of new media attention on larger groups. In the second study, the author

³⁹ The study also report that television, with the 42%, is perceived the most biased; another 23% address newspaper and 17% indicate magazines. Moreover, 8% of the interviewed thought that all of them are biased while almost 0% believe that none is biased.

presented theoretical and empirical evidence that high advertising revenues decrease political media bias⁴⁰. While the third research provided theoretical and empirical evidence of the inverse relation. In fact Dyck *et al.* (2005) argued that profit-seeking media can play an important role in reducing the influence of powerful economic interest on policymaking.

In summary media bias may have several sources: profit-maximization, special interest groups, the distribution of preferences of readers and the relation between journalists and their source (Baron, 2004).

⁴⁰ On the other side high advertising revenues may increase the influence by firms.

RELATED LITERATURE

The agency theory framework (see Akerlof, 1970 and Jensen and Meckling, 1976) explains the occurrence of information asymmetries between managers and investors. There are several potential solutions to the agency problem (Healy and Palepu, 2001): optimal contracts (see Holmstrom and Milgrom, 1991), corporate governance systems (see Shleifer and Vishny, 1997), corporate control mechanisms (see Jensen, 1986) and corporate disclosure (see Verrecchia, 2001 and Dye, 2001). In particular, theoretical and empirical researches show that increased disclosure reduces information asymmetry and consequently (see Healy and Palepu, 2001) *improves stock liquidity* (Healy *et al.*, 1999), *reduces cost of capital* (Botosan and Plumlee, 2000) and *increases information intermediation* (Lang and Lunholm, 1993 and 1996). Beside the benefits, disclosure is not costless (Viscusi, 1978); consequently, managers could choose not to fully communicate their information in order to protect firm competitive advantage and pursue their own interests. For the former target, the presence of proprietary costs induces companies to prefer partial-disclosure strategies (Wagenhofer, 1989). For the latter, Dye (1985, 1986) underlined that managers failure to disclose their non proprietary information because they can successfully suppress bad news and hold some proprietary information that belong to their array of private information. Moreover, the uncertainty of market reactions related with the credibility of the information may suggest to management with better performance to partially disclose valuations and forecasts (Dutta and Trueman, 2002 and Sansing, 1992). As a consequence, the optimal level of disclosure may not be the maximal one.

Firms can choose between a plurality of channels to communicate with stakeholders. There is a direct flow of information which is constituted by

regulated and mandatory financial reports – i.e. financial statements, footnotes and management discussion and analysis - and voluntary communication -such as management forecasts, press releases, analysts' presentations and conference calls and internet sites- (Healy and Palepu, 2001).⁴¹

Given that different types of informative channels are available, scholars have focused their attention on the relative efficacy of one channel with respect to the others. In particular, two main classes of information have been examined and compared: compulsory and voluntary ones. Indeed, the different interest alignment between stockholders and management and the bias due to the accounting system chosen by the firm can not be easily solved through mandatory disclosure. An implication of Viscusi (1978), Grossman (1981) and Milgrom (1981) models is that mandatory disclosure is unnecessary, since voluntary disclosure would be forthcoming. According to Fishman and Hagerty (2003), these results depend on the assumption that investors understand information and correctly infer its value. Although only informed stakeholders will benefit from mandatory disclosure, Fishman and Hagerty (2003) suggested that the major results are achieved in regulating disclosure in markets where product information is relatively difficult to understand.

In summaries, the direct flow of information between corporate and investors is incomplete due the fact that management may hold some proprietary information or because the receiver is not able to understand such information. Moreover, both of these two noises increase if the company compete in industries with more sophisticated features.

The problem of incomplete direct flow of information may be solved, at least partially, by information intermediaries like analysts, auditors

⁴¹ The relevance of high quality disclosure in reducing information asymmetries and increasing the efficiency of capital markets is also underlined by the standard setters (AICPA, 1994, FASB, 2001 and Levitt, 1998).

and press (Healy and Palepu, 2001). While the relations of analysts and auditors with corporate disclosure have been largely investigated (for a review on information intermediaries see Healy and Palepu, 2001), only recently and with different results, the role of the press has been considered relevant in the capital transaction processes (Dyck and Zingales, 2003, Chan, 2003, Frankel and Li, 2004 and Bushee *et al.*, 2006). This lack of attention seems to be one of the major causes of the unclear relation between corporate disclosure and press coverage. Moreover, the effects of press coverage in reducing information asymmetries are not clear.

Dyck and Zingales (2003) found that media spin affect the stock market response to earning announcement in alignment with companies interests. Chan (2003) inferred about investors' behaviours in presence of press news. Moreover, Frankel and Li (2004), given a negative correlation between financial statement relevance and both analysts following and press coverage, argued that, in presence of more information asymmetries, analysts and news releases act in substitutive terms relating to corporate disclosure. Consequently, as underlined by Bushee *et al.* (2006), high press-initiated coverage can independently reduce information asymmetry.

Base on the above consideration, I focus my attention on the unclear relation between press coverage and corporate disclosure and their effects on information asymmetries.

HYPOTHESES DEVELOPMENT

Corporate disclosure

Firms use three different channels to communicate with their investors: annual reports, more timely published reports and investor relations activities (Lang and Lundholm, 1993). The crucial role of annual reports in capital market is underlined in several papers (for a summary of disclosure studies see Appendix A in Chavent *et al.* (2006)). Kanodia and Lee (1998) theoretically showed the importance of periodical performance role, while Bushee and Miller (2005) provided evidence that investor relations activities increase trading activities, institutional investor ownership and market valuation. In addition, Lang and Lundholm argued and provided evidence that, controlling for the other type of disclosure, “a direct contact with the company is a primary source of information for analysts” (Lang and Lundholm, 1996: 490). Different properties for each channel are underlined by Botosan and Plumlee (2002), in fact they found that each channel is differently associated with cost of equity capital⁴². Conversely, Nikolaev and Van Lent (2005) found negative and significant association between the three type of disclosure and the cost of debt capital.

The differences among the three type of disclosure may be accentuated by the fact that, besides mandatory disclosure, each industry is characterized by different value drivers and features; consequently, disclosure practises change trough sectors. In fact, analysts attribute diverse level of relevance to each type of disclosure (Healy *et al.* 1999). All the results discussed suggest significant differences between the three type of disclosure. Thus, it is important to

⁴² Using AIRM disclosure scores, Botosan and Plumlee (2002) found that high quality disclosure in annual reports is negatively associated with cost of capital, while other published reports and investor relations activities are, respectively, positively associated and uncorrelated with cost of equity capital

analyse the associations between the three channels and clarify if they are three distinct elements of disclosure or measures of overall disclosure. Therefore the first hypothesis is stated as follow:

H1: each type of direct corporate disclosure is distinct from the others

Press coverage and corporate disclosure

For the media to collect their own information is costly; therefore, journalists normally use the official company sources (Dyck and Zingales, 2002). Thus, it is reasonable that to obtain credible information about company with higher quality disclosure is easier than for firms with low quality disclosure. However, Frankel and Li (2004) found a negative association between press coverage and quality of disclosure. With a sample of 47,266 firm-month observations they found that press coverage (considering both firm and press initiated news) seems to be higher when financial reports are less value relevant. According to the authors “this result is consistent with the intuition that growth firms tend to have less informative financial statement, but are more news worthy and attract greater interest” (Frankel and Li, 2004: 243). This implies that, in presence of low disclosure quality, press-initiated news may be considered as substitute of official communication; therefore, a negative association between press coverage and disclosure quality can be expected.

In addition, it could be argued that possible collusions between journalists and information suppliers may generate favourable treatment in the news story (Dyck and Zingales, 2002 and 2003). In fact, Dyck and Zingales (2002) discussed about three different sources available to the press that may endogenously increase the number of news. Such sources are internal and official, internal and non official and external. First, financial reports and official communication contain important information about the firm. This

source is probably the main one, because the information included may be considered as the most reliable and independent from private collusion with the information supplier. Second, internal members, such as managers and employees, can directly provide information. Third, “interest groups”, like shareholders, institutional investors and analysts, aggregate, analyse and discuss valuable information which is utilizable also by the press. Moreover, Dyck and Zingales (2002) emphasized the occurrence of selection and quid pro quo bias in the information provided by internal members and “interest groups”. However, assuming that main newspapers, in order to maintain their independence and their credibility, report exclusively press initiated news and collusive behaviours with sources are excluded. Once again, journalists may prefer to use official communication rather than less verifiable information.

In summaries, two opposite forces, the simplicity of obtaining credible and verifiable information and the appealing that one firm may have on newspaper readers, effect the association between press coverage and quality disclosure. Since both of these two forces are reasonable and jointly present the first hypothesis is stated as follow:

H2: Corporate disclosure is not associated with press coverage

Corporate disclosure, press coverage and information asymmetry

Several theoretical and empirical studies showed the benefits due to a reduction of information asymmetries trough corporate disclosure (See Healy and Palepu, 2001). Therefore, in order to achieve the benefits generated by a lower level of information asymmetries managers are induced to prefer higher quality disclosure level. Based on the above discussion, the third hypothesis is the follow:

H3: High corporate disclosure quality reduces information asymmetries

Press is used as information intermediary from private, institutional investors, financial analysts and stakeholders in general. Bushee *et al* (2006) argued that business press reduces information asymmetries because it is able to reduce the number of uninformed investors. Therefore:

H4: High press coverage reduces information asymmetries

In Figure 1a the relations among information asymmetries, corporate disclosure and press coverage are illustrated.

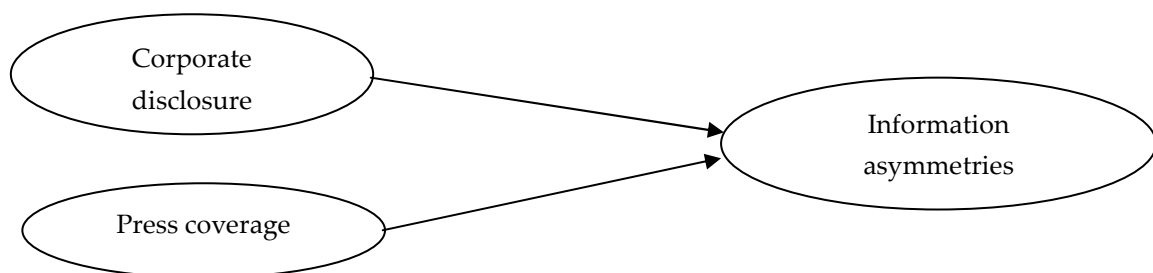


Figure 1a The expected impacts of disclosure and press coverage on information asymmetries

Corporate disclosure, press coverage, information asymmetries and information uncertainty

Information asymmetries rise also because managers do not promptly disclose some information; however, such activities may be observed *ex-post* through the behaviours of information receivers. Nevertheless, this lag of information is not the only determinant of information users' reactions, but their assessments are bias due to the information uncertainty generated by the volatility of firm's underlining fundamentals (Zhang, 2006). Therefore, information asymmetries are influenced by information uncertainty. At the same time, also the signal may be biased by information uncertainty.

In other words, the stakeholders may incorrectly assess information for two reasons:

- 1) low information quality, which implies more information asymmetries
- 2) information uncertainty that
 - a. generate evaluation volatility, or
 - b. soil the signal

Moreover, information uncertainty may decrease the quality of corporate disclosure because also managers are unable to predict firm-specific events. In case of uncertainty also litigation costs risk to be higher.

On the other hand, in presence of information uncertainty firms are induced to increase the quality of their disclosure in order to reduce this uncertainty. Therefore, the relation between information uncertainty and disclosure quality is not clear.

Also press coverage is influenced by information uncertainty. On one side, the volatility of firm's underlining fundamentals reduces press coverage because news may be less verifiable or less credible; on the other, strong information uncertainty may be the perfect environment for news with high appealing for the readers.

Based on the above discussion, the fifth and the sixth hypotheses are the follows:

H5: High information uncertainty is not associated with disclosure quality

H6: Information uncertainty is not associated with press coverage

In Figure 1b, the relations between disclosure, press coverage, information asymmetry and information uncertainty are represented.

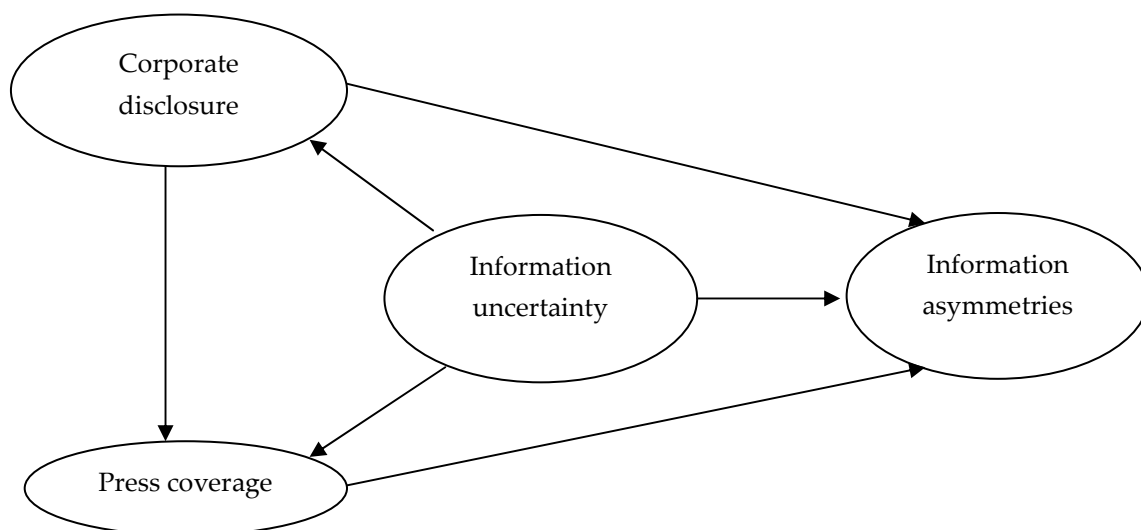


Figure 1b Conceptual model among corporate disclosure, press coverage, information uncertainty and information asymmetries.

Size

In literature it is argued that both corporate disclosure and press coverage are strongly effected by corporate size (see Ahmed and Courtis, 1999 for corporate disclosure and Frankel and Li, 2004 for press coverage). Lang and Lundholm (1993) extensively discussed a positive association between size and corporate disclosure due to decreasing disclosure cost in increasing of size and a necessity of diminishing transaction costs. Although there is not a theoretical motivation of a positive relation between firm size and press coverage, it seems reasonable that bigger companies attract more interest than smaller ones. In fact, the term *size* refers to several forces that may influence disclosure policies like more resources available for communication and more attention by investors, analysts and stakeholders in general.

Jensen and Meckling (1976) found that manager opportunistic behaviours arise in bigger companies and consequently increasing the level of information asymmetries; it can be argued that corporate size has a negative impact on information asymmetry for two main reasons. First, firms receive more attention by information intermediaries (Lang and Lundholm, 1993) and,

as consequence, organizations receive more pressure for disclosing information; and second, bigger companies can use their dominant position in order to restore themselves from communicating proprietary information. State differently, size has a direct effect on disclosure, press coverage and information asymmetries and also an indirect effect through direct (corporate disclosure) and indirect (press) communication.

Debt

A positive association between leverage, as measured by book value of debt to shareholders' equity or book value of debt to total assets, and disclosure level has been hypothesized (Myers, 1977; Schipper, 1981; Chow & Wong-Boren, 1987; Wallace et al., 1994). The main reason for the positive association between debt and disclosure is due to the presence of agency costs related to the shareholder-bondholders conflict. With debt, shareholders bear only one-side risk and have an ex-post incentives to make decision unaligned with bondholders' interest (Jensen & Meckling, 1976; Myers, 1977). In other words, if firm would like to take riskier investments it may be interested in reducing monitoring costs by disclosing more information in annual reports. While theoretical research supports a positive relation between debt and disclosure, empirical studies show mixed results. In fact, Curtis (1979), Malone et al. (1993), Hossain et al. (1994) found a significant relationship; while others (Chow & Wong-Boren, 1987; Ahmed & Nicholls, 1994; Wallace et al., 1994; Wallace & Naser, 1995; Hossain et al., 1995; Raffournier, 1995) had found no relationship.

The discussions in Jensen & Meckling (1976) and Myers (1977) implicitly underlines that only effective disclosure reduces the information asymmetries between shareholders and bondholders; therefore, only in presence of high

corporate disclosure quality there is a negative association between debt and information asymmetries. In the other case (poor disclosure quality), and when given high disclosure quality firm enterprising riskier projects, which may be differently interpreted by analysts, it is expected that debt is positively associate with information asymmetries.

Only anecdotal evidences support a positive association between press coverage and leverage. In fact, there are two main events related with debt that may be reported in newspaper: the issue of new bonds or a change in bond's rating. For the former, it is reasonable to assume that issuing new debt, which increases debt indexes, has more probability to be reported than do not issue it; while, for the latter, both positive and negative variation in ratings may be equally reported. Nevertheless, since readers may be more interested when a decreasing in bonds rating occurs, a positive association between debt and press coverage is expected.

Profitability

Although the relation between performance and disclosure is recognized the nature is complex (Miller, 2002). According to some theoretical studies (Verrecchia, 1983 and Lanen and Verrecchia 1987) that argued that firms disclose positive information and withhold negative ones, both Lang and Lundholm (1993) and Ahmed and Courtis (1999) claimed a positive association between firm's performances and disclosure; however, the authors quoted several studies in which there is no significant association (McNally et al., 1982; Lau, 1992; Raffournier, 1995) or with the opposite sign (Belkaoui & Kahl, 1978; Wallace & Naser, 1995). In particular, some empirical researches showed that

bad news are disclosed in order to prevent legal actions (Skinner 1994) or to notify about earnings disappointments (Kasznik and Lev, 1995).

The same reasons discussed about the possible relation between press coverage and information uncertainty can be argued for the unclear association between press coverage and profitability. In fact, on one hand, if profitability has a positive impact on disclosure, firms with good performance are induced to disclose more information and newspaper can easily report them. On the other, stakeholders may be more interested in news when firms' with poor performance are reported.

Potential growth

The framework for external reporting suggested by the major standard setter and expertises (AICPA, 1994; ICAEW, 1999; FASB, 2001 and CICA 2002) converge in underlining the importance of forward-looking information. In other words, stakeholders are highly interested in receiving information about the future of the company; therefore, it is expected that firms with high potential growth disclose more information.

On the same vein, press might dedicates more space to those firms that may become the new Microsoft or the new Google rather than companies that belongs to industries already mature⁴³.

Risk

In order to decrease the cost of equity and the cost of debts companies involved in projects with higher risk are induced to disclose more information.

⁴³ This does not mean that the social role and consequently attention by media, of firms that belongs to stable sectors is minor than those that operate in high growth industries. In fact their importance is mainly capture by the size factor.

On the other hand, since risky investments are normally associated with higher returns, firms may prefer to pay such cost and withhold main information. Therefore, the association between risk and corporate disclosure is not clear.

This implies that also the relation between press and risk is controversial; in fact it depends on the impact of risk on corporate disclosure. In other words, the association can be positive only in presence of available information.

In disclosure and press coverage literature the relation between corporate size, performance, information uncertainty, information asymmetries have been separately considered; or better, the possible indirect effects was not included in the model. In order to verify H3 – H6 a model that jointly relates press coverage, disclosure quality, information asymmetries information uncertainty, firm' size, debt, profitability, potential growth and risk is build (Figure 1c).

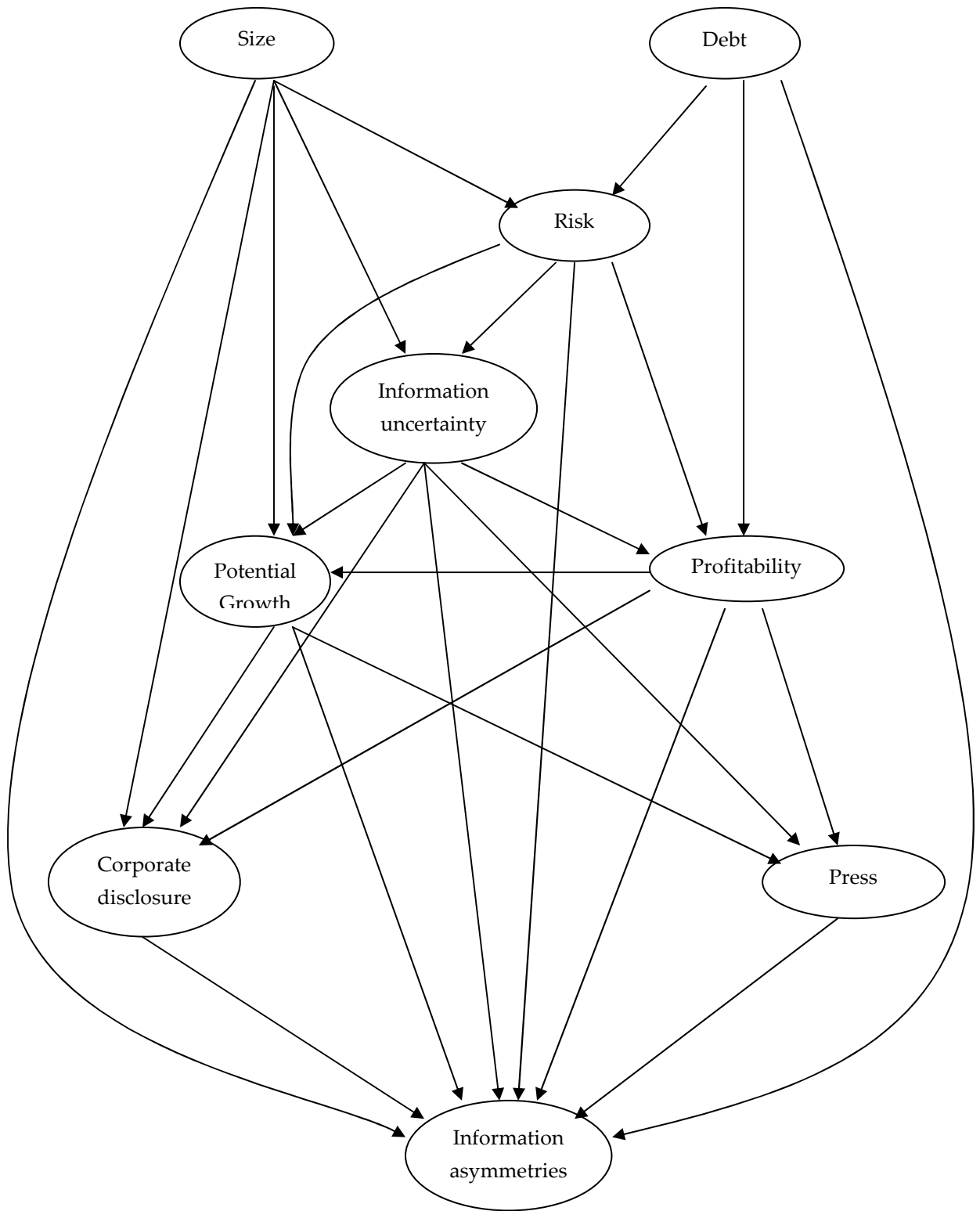


Figure 1c Conceptual model among corporate disclosure, press coverage, information uncertainty, information asymmetries, firm' size and performance.

METHODOLOGY

Sample selection and data sources

Consistent with many previous studies⁴⁴, including Lang and Lundholm (1993 and 1996), Healy *et al.* (1999), Sengupta (1998), Botosan and Plumbee (2001), Nikolaev and Van Lent (2005) and Brown and Hillegeist (2005), the scores elaborated by the Association of Investment Management and Research (AIMR) are used as proxies of disclosure quality. Although the critics (see Core, 2001 and Beattie *et al.* 2004) mainly due to the subjectivity of the score and the fact that AIMR had discontinued to publish rankings in 1997, the length of the panel (10 years) improve the robustness of the results and, probably the most important, the high speculation during the second half of the nineties, the September 11th effects and the financial accounting scandals (Enron, WorldCom, AOL and others) have been avoided. On the other hand, the Berlin's Wall (1989), the Iraq War I (1991) and PanAm's bankruptcy (1990) among others, had absolutely influenced world economy during the period considered.

Besides the several applications in previous studies, AIRM scores have three main features. First, they are not influenced by the researchers. Second, each different type of disclosure had been evaluated and third, such scores had been attributed by sub-committee of expert analysts that have a high knowledge of the industry.

Starting from AIMR database, only firms with more than 3 observations and both absolute scores and rankings had been kept. Moreover, in order to maintain a sufficient number of firms in each sector all the industries with less

⁴⁴ For an exhaustive discussion about the data and descriptive statistic of the entire sample see Healy *et al.* (1999) and Botosan and Plumlee (2002) respectively.

than 10 firms followed for 5 consecutive years had been excluded. After this selection the number of observations has drop to 1723. Other 603 observation have been dropped because the firms were not followed by Datastream. Although included in Datastream some companies had some missing data; consequently, the final sample size used in the models is 867 firm-year observations –i.e. 136 firms which belong to 11 industries- in the first analysis. The sample size is equal to 119 firms (762 firm-year observations) in the second part of the analysis due to missing values in I/B/E/S (95 firm-year observations) and equity lower than zero (10 firm-year observations).

Disclosure measure

In the first analysis all the three types of disclosure (annual reports, other publications, investor relations) and the overall score are considered. Starting from disclosure scores and rankings two measures for each channel had been constructed:

- *Absolute value*: the AIMR score weighed for the importance of the type of disclosure attributed by the analysts committee. Since the goal of the first part of the analysis is to investigate the relations between each channels and press coverage, the weights underline each disclosure type's importance and the relevance of one disclosure channel may influence journalists in the choose of the source. Although the critics about the comparability of the scores due to the unrecorded behaviours of each single sub-committee (see Lang and Lunholm, 1996; Healy and Palepu, 1999; Core 2001; Beattie *et al.*, 2004) it is the only measure that compare firms between industries. Moreover, such bias may be mitigated in two ways:

- estimation of the correlation between the errors associated to each measure of disclosure type
- by the joint usage of the following measure
- *Distance from median*: the AIMR score (weighted) minus the median of the industry in one specific year. This measure capture the differences in disclosure policies conditioned to the specific practise in the industry

In order to reduce the sample bias in measuring disclosure, all these proxies have been calculated considered the entire database. Moreover, following Botosan and Plumlee (2002), it has been assumed that score at year t refer to a period that goes from 1st July $t-1$ 30th June t .

For testing the hypotheses H3-H6 the model applied considers each type of disclosure as a distinct latent concept. Two measures are used for each latent concept:

- *Absolute value*: the AIMR score (Unweighted). In this case, the unweighted score are used in order to maintain a strict comparability between firms.
- *Ranking*: the first factor of a principal component analysts between the AIMR weighed score minus the median of the industry in one specific year and the ranking form used in Lang and Lunholm, 1996 $-(\text{rank}-1)/(\text{number of firms}-1)$. It's seems to be reasonable combine these two measures of rank because they capture the differences in disclosure policies within the industry in relative and absolute way.

Press coverage

A good proxy for press coverage is the number of news (Frankel and Li, 2004) or the number of words as in Bushee *et al.* (2006). Using Lexis-Nexis 18,786⁴⁵ news have been collected from 1985 to 1996 for a total amount of more than 280,317,000 words. Diversely from Frankel and Li (2004) only press-initiated news have been collected⁴⁶. In order to avoid a high number of repeated news, which mainly emphasize scandals, only the 55 main US newspapers⁴⁷ and in The Financial Times (FT) have been used as source. As already anticipated, in the second phase of the research also the number of Wall Street Journal articles have been calculated.

Diversely from previous research, only articles with the name of the companies in the headline had been investigated. This constrain avoid merely quotation which may generate a strong bias in the measure. Moreover, also the subject of the news had been classified. Lexis-Nexis allowed queries that isolate news about a specific topic trough pre-constituted a list of synonymous⁴⁸. Among all the topics found in the news, the engine only underlines the desiderate subjects contained in the news; therefore each news have been manually classified.

In other words, for each news have been collected: the source (FT or others), the date, the length in words and the subject among:

- Merger & Acquisitions (including joint ventures)
- Employees (like workers contracts, lay off and strikes)
- Sales (such as contract, orders and forecast)

⁴⁵ As stated in the introduction, considering also the WSJ, the articles used are more than 56,000. Actually, since not all the firms are included in the sample among all the 11 years the total number of news collected are more than 123,000.

⁴⁶ While Bushee *et al.* (2006) distinguished from firm-initiated and press-initiated news, in this paper only the second type is considerate because in AIMR score “other publication” analysts evaluate also press release which are classified in the firm initiated news.

⁴⁷ The list of main US newspaper for Lexis-Nexis is reported in appendix A.

⁴⁸ Such array of words is developed by Lexis-Nexis and independent from the researcher

- Management (mainly executive moves)
- Research & Development

As before, starting from the number and the length of news, two indicators of press coverage have been constructed:

- *Absolute value*
- *Distance from industry-year median*

In Table 1a main descriptive statistics about press coverage are reported. Although the other journals considered are 55, the ratio between number of articles in the US main journals and FT is equal to 8. This result is not surprising because FT is exclusively a business newspaper. Consistency with the time constrain assumed for corporate disclosure the number of news at year t is sum of the news from 1st July $t-1$ 30th June t .

Table 4a News descriptive statistics considering the source and the subject⁴⁹

Variable	mean	Sd	min	Max
J number of news	17.1	29.8	0	360
Ft number of news	2.1	4.8	0	48
J merger	5.7	12.7	0	245
Ft merger	0.8	2.2	0	20
J employees	2.8	10.1	0	201
Ft employees	0.1	0.6	0	10
J sales	7.7	15.2	0	157
Ft sales	1.1	2.4	0	23
J management	1.0	2.6	0	46
Ft management	0.1	0.6	0	11
J debt	1.4	7.3	0	199
Ft debt	0.2	1.6	0	43
J r&d	0.4	1.4	0	23
Ft r&d	0.1	0.4	0	6

The inclusion of the WSJ had imposed to do not distinguish between business and non-business press as before. In fact, the level of press coverage is

⁴⁹ FT stay for The Financial Times and J for other journals considered

dramatically increased and the behaviours of the newspapers considered are not such different as it going to be shown in the next paragraph. This may be the consequence that the WSJ is a “pure” business newspaper focus on north American’s firms while the FT may report only main events and the other newspaper are more focused on local firms.

In addition, while in the first part of the analysis all the news have been considered, in the latter the model have been tested for *original* and *non-original* news. The term *original* means that the day before the company has not diffused a press releases⁵⁰ (PR). The lag of only one day have been used since a manual investigation on 600 randomly chosen articles have produced that only 3 news, preceded by a PR published the day before, are not related with the content of the PR and in another, relative to a comparisons between Boeing 747 and Boeing 737 orders, quoted the results published in a PR 3 months before.

For the second part of the analysis, three journals have been classified separately FT, WSJ and the 55 main US journals. Since the number of news in the New York Times (NYT) is significantly higher compared to the other main journals (see Table 1b) all the models are tested twice: using all the 55 main US newspapers and NYT and the other 54 newspapers separated. As can be seen in Table 1b there are some significant differences between lower and upper bounds; therefore, the natural logarithm of the total amount of news published in the time range considered is calculated in order to mitigate the effect of firms’ size or potential scandals.

⁵⁰ Again trough Lexis-Nexis a news have been classified as PR if it was diffused trough the PRnewswire and it must contain the name of the firms in the contact proposed. With this procedure, those PR that simply quote a firm (for example a supplier disclose about an order made by it’s customers) are excluded.

Table 1b Newspaper and PR summary statistics ⁵¹

Variable	mean	Sd	p25	p50	p75	p95
Majors	6.30	14.79	0	1	6	30
majors (PR)	3.81	9.66	0	0	3	16
NYT	3.66	7.31	0	2	5	14
NYT (PR)	4.38	6.45	0	2	6	17
WSJ	32.10	50.05	4	12	40	130
WSJ (PR)	14.86	19.62	2	8	20	58
FT	1.07	3.22	0	0	1	5
FT (PR)	0.96	2.28	0	0	1	5
PR	15.67	15.37	5	11	22	44

Size

Conventional proxies for size are the logarithm of the market value and of the sales (Ahmed and Courtis, 1999). In this case the market value is used. In order to take in account also the industry effect, the absolute market value and the difference with the industry-year median are summarized using the first factor of principal components analysis. Moreover, the factor between the average of analysts following between the four quarters of the years and the difference with the industry-year median are considered. The same procedure has been applied to the number of employees. In addition, the opposite rank in fortune 500 based on sales is calculated as measure of size (See Table 1c for summary statistics of raw variable). In particular, this measure mitigates part of the possible bias on firm size, due to the sample selection, because it summarizes the size of the firms compared to the firm included and not included in the sample.

Beside the more availability of resources, these four measures may proxy better the fact that bigger firms receive more attention by all the stakeholders. In particular, analysts follow measure the participation of institutional investors in the life process of the firm and the Fortune rank and

⁵¹ (PR) means that the day before a PR have been published

the number of employees may assess the relevance of the organization in the economy. The first two statistics reported in Table 1c are in line with those calculated by Lang and Lunhdolm (1996) increased by a reasonable quantity due to the fact that the sample is extended in time⁵². However, the difference may be due to the fact that information is nowadays available only for bigger firms. Again on the size of the companies analysed the Fortune ranks⁵³ show that the sample is bias (see Healy and Palepu, 2001 and Core, 2001).

Table 1c Size original summarize statistics

Variable	mean	sd	p25	p50	p75	p95
Ln MV	14.85	1.53	13.80	14.74	15.98	17.38
Analyst following	20.37	9.77	12.25	19.25	27.00	37.75
Fortune rank	-255.25	193.29	-501.00	-210.00	-67.00	-10.00
Employees	41822	58550	9800	22968	49659	135300

Debt

Two measures of debt are used: Debt-to-Equity (D2E) and Debt-to-Assets (D2A). For both measure the first factor of principal components analysis between the absolute and the difference with industry-year median are used.

Profitability

Two measures of profitability are used: Return-On-Equity (ROE) and Return-On-Sales (ROS). Also in this case the first factor of principal components analysis between the absolute and the difference with industry-year median are used.

Potential growth

⁵² In Lang and Lundhom (1996) firms are observed between 1985-1989; while in this case from 1985 to 1996

⁵³ -501 have been arbitrary attributed to those firms not included in the list

The Market-to-Assets ratio is a good proxy of potential growth (Bushee *et al.*, 2006). Although Market-to-Book and Market-to-Assets ratio are generally high correlated the financial structure of the firm may effect these two index differently; therefore both these ratios are used as potential growth measure. Also in this case the first factor of a principal component analysis between the absolute measure and its difference with industry-year median are used.

Risk

A common measure of risk is BETA. Also in this case, average of monthly BETA calculated trough Datastream is used. Also in the case of BETA the first factor of each principal components analysis between the variable and the difference with the industry-year median have been used.

Information uncertainty

Zhang (2006) compared five proxies of information uncertainty: firm size (already included in the analysis), firm age (since around 1/5 of the firms in the sample were established before 1900 and listed before 1929 and 1/5 are the results of different mergers and acquisitions firm age is not included), analysts coverage (already included as proxy of size), dispersion and accuracy of analysts forecast (used as proxies of information asymmetries) and stock volatility. Thus, stock volatility is used as information uncertainty proxy and it is measured as the average of monthly volatility calculated by Datastream.

In addition, prior studies have used the variability of security returns as a proxy for information asymmetry (Lang and Lundholm, 1993 and Leuz and Verrecchia, 2000). In particular, Lang and Lundholm (1993) found a negative association between financial analysts' evaluation of quality disclosure and security returns variability. Moreover, Leuz and Verrecchia (2000) argued that

smooth transition in prices is signal of the absence of information asymmetries between the firm and investors implying that low levels of volatility suggest lower information uncertainty. Also in the case of volatility the first factor of each principal components analysis between the variable and the difference with the industry-year median is used.

Information asymmetry

Krishnaswami and Subramaniam (1998) and Gilson *et al.* (1998) used the accuracy of analyst's forecast of earnings per share and the dispersion among analyst's forecast as proxies for information asymmetries. The appropriateness of these measure is based on the findings of Blackwell and Dubins (1962) who showed that opinions tend to converge as the amount of information available increases. On the same vein, Elton *et al* (1984) argued that forecast errors decrease as the predictions get closer to the fiscal year-end. Furthermore, they presented evidence that more than 80 percent of the observed forecast error is due to incorrect estimates of firm specific characteristics rather than economy factors.

Conversely, Clarke and Shastri (2000) argued that in order to use analysts' forecast as proxy of information asymmetries it must be assumed that analysts report unbiased information because, in general, analysts over-react to good news and under-react to bad ones (Easterwood and Nutts, 1999); therefore, forecast errors may be biased.

The error in the mean forecast is also used as proxy for earnings surprise (for examples see Brown *et al.* 1987; Bamber and Cheon, 1995; Wiedman, 1996 and Bamber *et al* 1997); while forecast dispersion and error in mean (or median) forecast are used as proxies for the uncertainty or the degree of consensus

among analysts or market participants (Daley *et al.* 1988; Ziebart 1990; Imhoff and Lobo 1992; Lang and Lundholm 1996; Barron and Stuerke, 1997). Both surprise and uncertainty are generated by a lack in information or by an error in the signal send by the firm. Barron *et al.* 1998, presented a model in which each analyst observes two signals: one public (common across all analysts) and one private (idiosyncratic). They found that forecast dispersion reflects only idiosyncratic error, while error in mean forecast reflects primarily⁵⁴ common errors. Therefore, using jointly dispersion and error in mean (median in this case) may measure information asymmetries due to error in common and private information.

Lang and Lundholm (1996) argued the relations between corporate disclosure and analysts following, forecast accuracy, dispersion and revision volatility. In particular they find that corporate disclosure is a significant determinant of them. On the same vein, in this study forecast accuracy measured as the mean of the quarterly difference weighted by the average stock price: $-(|EPS-1 \text{ year median Forecast}| / \text{Price})$.

On the other hand, dispersion is the average of quarterly standard deviation of the forecasts weighed for the mean stock price within the period.

The usage of quarterly measure is due to the fact that AIRM scores are published far away from the annual report; therefore the effect of interim disclosure is reasonably less biased. On the same vain of Zhang (2006) the dispersion of analysts forecast and their accuracy are used as proxies of information asymmetries.

⁵⁴ In Barron *et al.* (1998) error in individual forecast my also reflects idiosyncratic error when a limited number of forecast exists. In addition, they found that error in individual forecast reflect both common and idiosyncratic error.

In order to better interpretate the following results, the latent concept of information asymmetries that these two variable are measuring is high in presence of low accuracy and high dispersion.

Methodology

Confirmatory factor analysis (CFA) was used to test for the association between the different disclosure channels and their correlation with press coverage. Structural equation model (SEM) was used to test the casual relation between size, information asymmetry, corporate disclosure and press coverage. The LISREL 8 program was employed in both analyses (for two exhaustive guide on LISREL and SME see Joreskog and Sorbom, 1993 and Byrne 1998).

“Structural equation modeling is a statistical methodology that takes a confirmatory (i.e. hypothesis-testing) approach to the multivariate analysis of structural theory bearing on some phenomenon” (Byrne 1998 pp:1). Models are made up of four elements: the latent variables, their measures, the errors associated to both unobservable and observable variables and the relations between latent variables. A SEM is a system of equations that jointly relates each latent variable with its measures and one unobservable variable with another.

Conversely from factor analysis, confirmatory factor analysis, which is a SEM without casual links among unobservable variables, allowed to verify the relations between a set of latent variables under the constrains theoretically imposed by the researcher. In particular, CFA is useful for verify if two sub-set of measures belong to one latent concept or to two distinct latent factors.

SEMs have been chose for three main reasons: the complexity of the phenomenon, the casual relations and the non independence of the measures’

errors. First, as already presented, each latent concept (disclosure, press coverage, information asymmetries, size, profitability and potential growth) is jointly measured, at least, by two observable variables (one measure is used for information uncertainty and risk). Moreover, in order to test H3 – H6 the disclosure practise and the press coverage might be contemporary considered as dependent variables. Second, since the relations among the latent variables are captured by a sub-set of equations also the significance of the directions between factors can be verified. Third, SMEs allowed to free the correlations between measures' errors if its needed. For example, since financial analysts' scores each type of disclosure, it is reasonable that errors associated to each channel are related. Other examples are the correlation between the errors related with the market-to-assets ratio and with the market value used as measure of potential growth and size respectively or between the errors market-to-book and return on equity.

According to Byrne (1998) a model is considered satisfactory if the following the limit for the goodness of fit statistics automatically provided by LISREL are respected:

- *Minimum Fit Function Chi-Square*⁵⁵: $P > 0.1 \rightarrow ok$
- *Root Mean Square Error of Approximation (RMSEA)* $< 0.10 \rightarrow ok$
- *Non-Normed Fit Index (NNFI)* $> 0.90 \rightarrow ok$
- *Comparative Fit Index (CFI)* $> 0.90 \rightarrow ok$
- *Standardized RMR* $< 0.08 \rightarrow ok$

⁵⁵ Since the sample size is high, none of the *Chi-Square test* is expected to be signal of a good model

RESULTS

H1: each type of direct corporate disclosure is distinct from the others

The overall index of disclosure is the average of each type of disclosure weighed from the importance of each channel assigned by the analysts for each industry-year combination. On average annual disclosure count for around 40-45% while other official publication and investor relations for 25-30% and 30-35% respectively. However, it is not clear if one of these channels dominate the other in calculating the overall index. Consequently in the first part of the analysis the three type of disclosure and the overall index are considered separately.

As discussed in the previous section, two measures of disclosure are used for each type of corporate disclosure. Table 2 shows that all the latent variable, representing each type of disclosure (see Figure 2), are significant and distinct⁵⁶. In figure 3, although press coverage is included, clearly illustrate the relation between disclosure measures and the relative latent variable. Moreover, all the four disclosure channels are positively correlated with each other⁵⁷. Also the goodness of fit statistic, listed below, are satisfactory. Thus, H1 is verified. Consequently, all the following models consider such distinction between disclosure channels.

⁵⁶ In fact, analysing the value on the diagonal, none of the range generating by adding and subtracting the double of the standard error contain 1.

⁵⁷ All the value out of the diagonal are positive and significant

Table 5 PHI matrix

	anl	opb	rel	tot
Annual reports	0.81			
(s.d)	(0.05)			
p-value	17.08			
Other publication	0.48	0.75		
(s.d)	(0.04)	(0.05)		
p-value	13.69	16.33		
Investor relations	0.31	0.31	0.75	
(s.d)	(0.03)	(0.03)	(0.05)	
p-value	9.78	10.04	16.48	
Total Disclosure	0.64	0.60	0.61	0.77
(s.d)	(0.04)	(0.04)	(0.04)	(0.04)
p-value	16.44	15.52	15.54	17.64

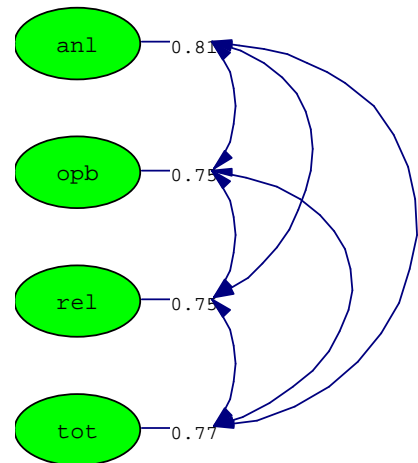


Figure 2 Relations among each type of disclosure

Goodness of Fit Statistics

Degrees of Freedom = 75

Minimum Fit Function Chi-Square = 765.86 (P = 0.00) → FAIL

Root Mean Square Error of Approximation (RMSEA) = 0.10 → limit

Non-Normed Fit Index (NNFI) = 0.96 → OK

Comparative Fit Index (CFI) = 0.97 → OK

Standardized RMR = 0.064 → OK

H2: Corporate disclosure is not associated with press coverage

As in the previous model two measures for each disclosure channel and press coverage are used. Table 3 shows that only FT is very weakly correlated with annual reports disclosure and confirm that FT coverage and the other newspapers coverage, although positively correlate, are distinct. Since FT it is exclusively a business newspaper, it is reasonable that internal resources are used in order to analyse annual reports. However, considering that the

goodness of fit statistic are satisfactory and there is only one weak correlation between disclosure and press coverage, H2 is verified.

Similar results have been obtained using the length in words instead of the number of news⁵⁸.

Table 6 PHI Matrix

	anl	opb	rel	tot	j	ft
Annual reports	0.37					
(s.d)	(0.03)					
p-value	12.43					
Other publication	0.25	0.44				
(s.d)	(0.02)	(0.03)				
p-value	12.10	12.68				
Investor relations	0.16	0.18	0.41			
(s.d)	(0.02)	(0.02)	(0.03)			
p-value	9.28	9.53	13.38			
Total Disclosure	0.40	0.42	0.41	0.65		
(s.d)	(0.03)	(0.03)	(0.03)	(0.04)		
p-value	13.26	13.27	13.49	15.05		
Majors journals	0.02	0.01	-0.02	0.00	0.86	
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.05)	
p-value	0.88	0.59	-0.90	-0.04	17.98	
Financial Time	0.05	0.01	0.01	0.03	0.51	0.98
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.05)
p-value	2.20	0.28	0.65	1.05	13.43	20.46

Goodness of Fit Statistics

Degrees of Freedom = 167

Minimum Fit Function Chi-Square = 1535.77 (P = 0.00) → FAIL

Root Mean Square Error of Approximation (RMSEA) = 0.090 → OK

Non-Normed Fit Index (NNFI) = 0.94 → OK

Comparative Fit Index (CFI) = 0.96 → OK

Standardized RMR = 0.051 → OK

⁵⁸ In order to avoid collinearity, number of news and length are not jointly used because highly correlated.

The same model has been repeated for each subject. The findings are summarized in Table 4⁵⁹.

Table 7 repeated for each news subject PHI matrix⁶⁰

	anl	opb	rel	tot	j_x	ft_x
J merger	0.01	0.01	0.03	0.02	0.92	
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.05)	
p-value	0.53	0.50	1.20	0.68	19.33	
Ft merger	0.07	0.02	0.05	0.07	0.46	0.99
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.05)
p-value	3.10	0.73	2.44	2.38	12.48	20.76
J employees	0.02	0.03	-0.02	0.01	0.99	
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.05)	
p-value	0.88	1.06	-0.85	0.20	20.36	
Ft employees	0.01	0.01	0.00	0.01	0.72	1.00
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.05)
p-value	0.52	0.51	-0.08	0.31	17.19	20.78
J sales	0.02	0.01	-0.03	-0.01	0.78	
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	
p-value	0.97	0.33	-1.40	-0.51	17.59	
Ft sales	0.04	-0.01	-0.01	0.01	0.40	0.99
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.05)
p-value	1.70	-0.51	-0.43	0.24	11.27	20.54
J management	0.04	0.02	0.00	0.02	0.95	
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.05)	
p-value	1.65	0.82	0.06	0.67	19.16	
Ft management	0.04	0.02	0.01	0.03	0.27	0.99
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.05)
p-value	1.69	1.05	0.64	1.17	7.67	20.55
J debt	-0.03	0.00	-0.01	-0.03	1.02	
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.05)	
p-value	-1.26	-0.01	-0.37	-1.02	20.54	
Ft debt	0.02	-0.02	0.02	0.01	0.26	1.00
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.05)
p-value	0.81	-0.83	0.92	0.28	7.30	20.78
J r&d	0.05	0.01	-0.06	-0.01	0.96	
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.05)	
p-value	2.49	0.46	-2.82	-0.27	19.66	
Ft r&d	0.03	-0.02	-0.03	-0.01	0.31	1.00
(s.d)	(0.02)	(0.02)	(0.02)	(0.03)	(0.04)	(0.05)
p-value	1.50	-0.91	-1.51	-0.52	8.85	20.78

⁵⁹ Since all the PHI matrix generated confirm hypothesis H1 of distinct disclosure channels, values are not reported. All the model have satisfactory goodness of fir statistics.

⁶⁰ J_x ad ft_x is equal to the variable in row

As can be seen, only news in FT concerning mergers & acquisitions are positively correlated with annual disclosure and investor relation activities. Moreover, concerning research and development, for the other newspaper there are weakly significant positive and weakly significant negative correlation with annual reports and investors relations respectively. Since the magnitude of the correlations are lower than 0.07 it reasonable to accept H2 also for each news subject.

The joint model

The model presented in Section 3 is constituted by ten latent concepts: quality disclosure, press coverage, information asymmetry, information uncertainty, size, debt, profitability, potential growth and risk.

Even if results concerning H1 showed that the measures for annual report disclosure, other official publication, investors relation activities and total disclosure are influenced by four distinct latent variables; a relatively high correlation, around 0.6, between the overall disclosure and the three channels (see Table 2) suggest to run the models using only the measures for the three channels⁶¹.

Although FT press coverage and other newspaper coverage are clearly distinct (see Table 3 and 4) and they may be included separately in the model, the inclusion of another business journal, the WSJ, have change the association between these measures of press coverage. Since they are all positive correlated with each other all these three variable are considered as measure of the latent concept PRESS COVERAGE. As argued in section 3 the model is run considering *original* and *non-original* news separately; since the main results are

⁶¹ Another reason is related with the fact that since total score is the weight sum of each type of disclosure the goodness of fit of the entire model may be artificially increased by such strong relation. Model that consider the four disclosure factor are also run with similar results.

very similar only the values for the model in which only *original* news are considered are reported, while the differences are discussed. Since *non-original* news depends of the amount of Press Releases published and some *original* news may combine the information contained in more than one Press Releases, another latent variable named PR is included in the model. The measure associated with this variable is the logarithm of the total amount of Press Releases published.

Based on previously consideration the casual model analyse is illustrated in Figure 3.

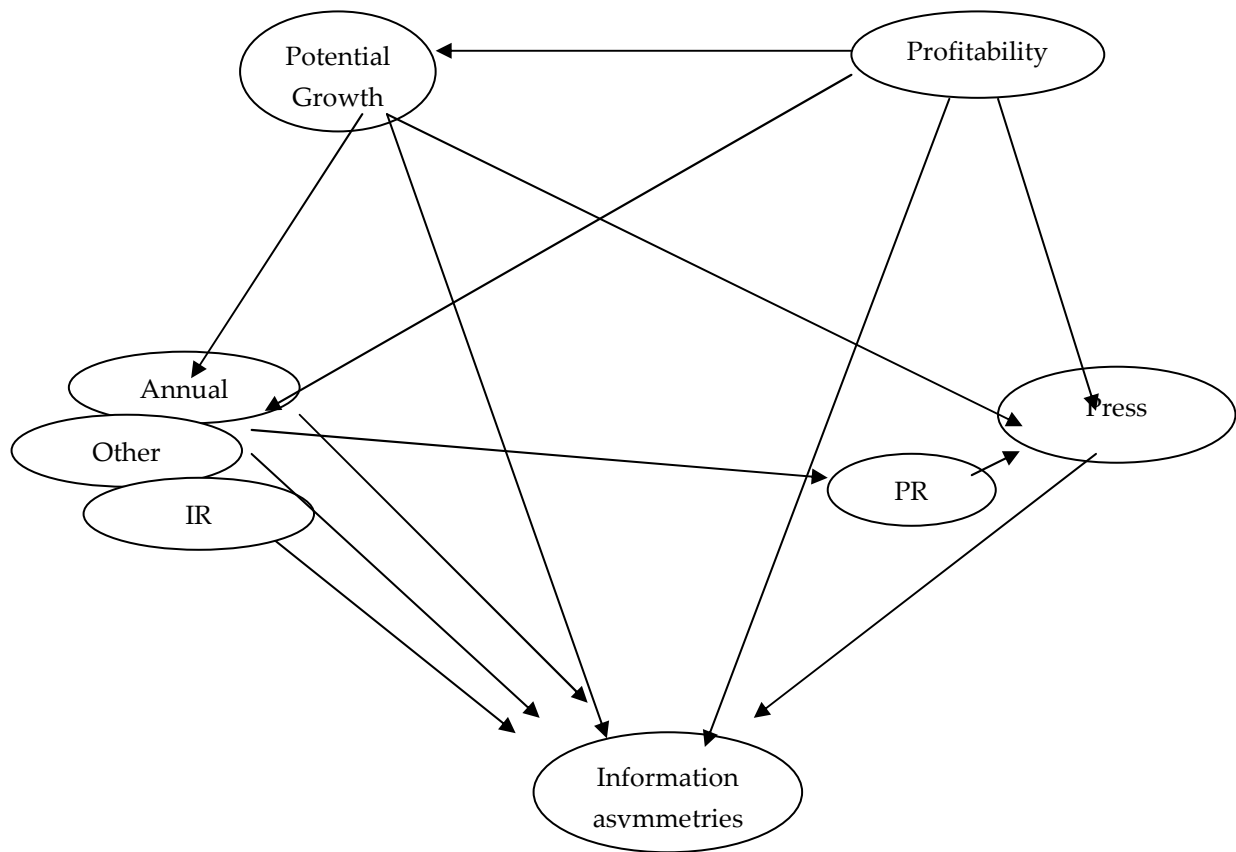


Figure 3 Conceptual model analysed

As can be seen from the goodness of fit statistics the model is good.

Goodness of Fit Statistics

Degrees of Freedom = 176

Minimum Fit Function Chi-Square = 1046.23 (P = 0.00) → FAIL

Root Mean Square Error of Approximation (RMSEA) = 0.077 → OK

Non-Normed Fit Index (NNFI) = 0.92 → OK

Comparative Fit Index (CFI) = 0.93 → OK

Standardized RMR = 0.071 → OK

BETA matrix that indicates the casual effect between information asymmetry, analysts forecast, corporate disclosure and press coverage is reported in Table 5.

Table 8 BETA matrix are reported the standardize solution (in bold significant relations at 0.05 level)⁶²

	BETA	Ann	Oth	IR	Press	PR	IU	Prof	Growt h	Risk
Annual Report	Ann						-0.13	-0.06	0.04	0.08
Other Publication	Oth						0.23	-0.06	0.04	-0.17
Investor Relation	IR						0.04	0.04	0.02	0.03
Press Coverage	Press	0.15	-0.15	-0.01		-0.09	0.10	-0.12	0.10	-0.03
Press Releases	PR		0.09				0.00	-0.04	0.12	-0.01
Info. asymmetries	IA	0.12	-0.09	-0.07	0.16		0.65	-0.36	0.06	-0.33
Info. Uncertainty	IU									0.69
Profitability	Prof						-0.37			0.14
Potential growth	Growth						-0.26	0.34		0.19
Risk	Risk									

In Table 6 total effects of each latent variable on the other is reported. Total effect combined the direct effect reported in Table 5 and the indirect effect through the other latent variables. As can be seen the only difference are the

⁶² LISREL output must be read as follow : the factor in column has effect on the factor in row

fact that the total effect of annual report on information asymmetries is positive significant in contrast with Lang and Lundholm (1996) and the expectation.

Table 6 Total effect are reported. the standardize solution (in bold significant relations at 0.05 level)

	BETA	Ann	Oth	IR	Press	PR	IU	Prof	Growt h	Risk
Annual Report	Ann						-0.12	-0.05	0.04	0.00
Other Publication	Oth						0.24	-0.04	0.04	-0.01
Investor Relation	IR						0.04	0.05	0.02	0.06
Press Coverage	Press	0.15	-0.15	-0.01		-0.09	0.05	-0.08	0.09	0.05
Press Releases	PR		0.09				0.00	-0.01	0.12	-0.01
Info. asymmetries	IA	0.12	-0.09	-0.08	0.16	-0.01	0.74	-0.35	0.08	0.16
Info. Uncertainty	IU									0.69
Profitability	Prof						-0.37			-0.11
Potential growth	Growt h						-0.38	0.34		-0.02
Risk	Risk									

In Table 7 is reported the GAMMA matrix which contain estimations of the casual effect (direct and total) of debt and size on disclosure, press coverage and information asymmetry. As can be seen, the links are significant and, as expected, corporate size and debt has a negative and positive, respectively, total effect on information asymmetry and information uncertainty; while only size has a positive strong effect on both press coverage and all the three disclosure channels. Consistent with previous studies, leverage is negatively associated with annual high disclosure quality⁶³ and positively associated with press coverage. The former effect may be due to the fact that firms prefer to pay higher debt cost and withhold information about risky projects and disclose only partial information with other publication and IR relation activities (there is no association between debt and other publication and IR). On the contrary,

⁶³ It must be noted that such negative association may be due to the fact that that both absolute index and industry-year conditioned scores are used and they have different impact on debt. In fact, absolute value are negatively correlated with leverage, while score that consider the industry-year effect are positively correlated with leverage.

the latter is generated by the high attention that press may have about the issue of new bond or the changes in debt ranking. In addition, as confirmed by the negative association between debt and profitability, potential growth and by the positive effect that debt has on risk, a high leverage may signal of poor performance and uncertainty and readers may be very interested on such situation (in extreme cases poor performance may be the cause of strikes which receive a lot of attention by the press).

Table 7 GAMMA matrix standardise solution (Significant coefficient at 0.05 level in bold)

GAMMA	Debt		Size	
	Direct	Total	Direct	Total
Annual Report	-0.07	-0.08	0.19	0.23
Other Publication	0.00	0.01	0.24	0.13
Investor Relation	0.04	0.03	0.19	0.16
Press Coverage	0.23	0.23	0.72	0.62
Press Releases	0.13	0.13	0.33	0.32
Info. asymmetries	0.01	0.13	0.02	-0.26
Info. Uncertainty	0.07	0.13	-0.43	-0.48
Profitability	-0.13	-0.17	0.07	0.24
Potential growth	-0.32	-0.40	-0.30	-0.12
Risk	0.14	0.14	-0.08	-0.08

As reported in Table 5, not all the casual links are significant. Indeed,

H3: High corporate disclosure quality reduces information asymmetries → NO

Conversely from Lang and Lundholm (1996) annual disclosure is positive associated with information asymmetries; while, although the both the coefficient are negative, IR and other publication are not significant associated with information asymmetries.

H4: High press coverage reduces information asymmetries → NO

Conversely from Kross *et al.* (1990)⁶⁴ press coverage is positive significant related with information asymmetries. This may be due to the fact that newspaper dedicate more space to low performance firms which are also characterized by high information asymmetries.

H5: High information uncertainty is not associated with disclosure quality → OK

As expected the quality of annual disclosure and IR is not associated with information asymmetries. On the contrary, other publication are positive significant associated with information asymmetries. This fact is mainly due to the evidence manager use timeliness instruments like press releases and interim reports in order to decrease the market uncertainty.

H6: Information uncertainty is not associated with press coverage → OK

As expected information uncertainty is not related with press coverage due to its double effect. Conversely, if the same model is run with *non-original* news information uncertainty has a positive effect on press coverage. This implies that in presence of uncertainty press publish news if the source is credible, in this case newspapers mainly report a press release.

In addition, using *non-original* news instead *original news*, press coverage has any significant effects on information asymmetries, this may be due to the fact that investors (analysts in this case) already have the information through official disclosure.

Moreover, publication on high number of press releases reduce *original* press coverage and increase *non-original* press coverage.

⁶⁴ Kross *et al.* (1990) used the inches in the WSJ Index as proxy of media coverage, however the main differences are that in this analysis forecast accuracy is weighted for the share price.

Moreover, as reported in Table 6, this results do not confirm the non-association between press coverage and corporate disclosure. In fact, there is a negative significant association between other publication and press coverage and a positive association between annual disclosure and press coverage. In other words, firms with good timeliness disclosure do not need the intermediation of the press in order to decrease information asymmetries because they already have a direct flow of official information with stakeholders.

Concerning the other factors included in the model, disclosure is not effected by profitability, potential growth and risk. This may be due to the fact that each firm choose different level of disclosure quality in presence of similar condition. In other words, positive and negative effect are both present. For press, firm with poor profitability (see also the effect of debt) receive more attention by the media; on the contrary, companies that have high opportunities to growth are more present in newspaper. In some sense, journalist dedicate more space to the two extreme type of firm: poor performance on one side, high potential growth on the other. This may be simple due to the interest of the readers which are more focus on special events rather than on ordinary ones.

DISCUSSION AND CONCLUSIONS

This chapter examines the relation between the quality of firm's disclosure and the press coverage. Such relation is important because both attempt to reduce information asymmetry. Therefore, in order to strongly increase market efficiency, press coverage may be higher if disclosure quality is lower and both of them might improve analysts forecast accuracy and reduce dispersion.

Using AIMR analysts' scores as measure of quality disclosure and the number of news as press coverage proxy, I extend press literature providing evidence that journalist independently write about firm with high and with low quality disclosure. However, they do not contribute in reducing information asymmetries because they fill in the lack of information about firm with poor quality disclosure only with information already published by the company. In fact, press coverage is associated with low forecast accuracy and higher dispersion.

Moreover, I find that high information uncertainty is not associated with press coverage. A possible explanation is the presence of two opposite forces on press: need to maintain its credibility and write appealing news for the readers.

Under the above consideration, the results about press coverage are consistent with Frankel and Li (2004) but not with Bushee *et.al.* (2006). Concerning disclosure literature, this result partially confirm Brown and Hillegeist (2005) that with the same disclosure measures found a negative association between quality disclosure and information asymmetry (In this case results only annual disclosure is positive significant). By the way possible

difference could be due to a diversity in asymmetry information measures⁶⁵, or to the fact that I have underlined the indirect effect of size on quality disclosure through the information uncertainty with a casual structural equation model.

In fact, while on one side bigger firms may have lower information asymmetries and wider press coverage, on the other higher press coverage increase potential information asymmetries. Although this last point is the opposite of Bushee *et al.* (2006) results, the model presents that journalists are more focus on extreme situation like very poor performance or high potential growth and shows how complex are the relations between information asymmetries, press coverage, corporate disclosure and analysts forecast.

As discussed in the following chapter both firms and investors might be interested in these results.

This work suffer form several limitation. For example the dataset is quite old and incomplete. Therefore, AIRM score do not include internet practise which are having a large interest by investors. Moreover, disclosure determinants like firms' age or property structure are not included in the model.

Further research on the relation between corporate disclosure and press are expected in order to better understand the opportunities that firms may have through the strategic usage of press.

⁶⁵ Brown and Hillegeist (2005) used a market microstructure model to estimate the firm-specific level of information asymmetry among investors, while I have used analysts forecast.

COMPETITORS' ROLE ON CORPORATE DISCLOSURE

INTRODUCTION

On a typical business day new entrepreneurs and existing companies need to finance their business ideas. This implies that entrepreneurs would like to attract monetary resources held by savers. Although both savers and entrepreneurs would like to attain an agreement, matching the demand and the offer of capital may be not an easy process. Before the financing, entrepreneurs typically have better information than savers about the value of business investment opportunities and incentives to overstate their value: *information problems* (see Stigler 1961; and Akerlof, 1970) . After the trade, since savers normally do not intend to exercise an active role in running the business, managers have an incentive to expropriate investors' savings: *agency problem* (see Jensen and Meckling, 1976 and Smith and Warner, 1979). Healy and Palepu (2001) identify five well-known solutions to the "lemon" and to the agency problems: optimal contract, disclosure, corporate governance, information intermediaries and corporate control contests. In particular, corporate disclosure and the institutions created to facilitate credible flows of information from managers to present and potential investors (e.g. standard setters, auditors and information intermediaries) play an important role in mitigating information and incentive problems and, therefore, prevent, or at least reduce, inefficient resources allocations (Kothari, 2001). As presented in paragraph *benefits and costs* (1.1.3.6), in the capital market, both users and entrepreneurs might be conscious of the respective benefits and costs associated with disclosure (see table 1) .

Table 9 Benefits and costs associated with disclosure for users and entrepreneurs

	Benefits	Costs
Users	<ul style="list-style-type: none"> • Facilitate resource allocation • Reduce information asymmetries • Diminish agency problems 	<ul style="list-style-type: none"> • Collect and process information
Entrepreneurs	<ul style="list-style-type: none"> • Improves stock liquidity • Reduces cost of capital • Increases information intermediation 	<ul style="list-style-type: none"> • Collect and process information • Competitive and proprietary costs • Litigation costs due to non-disclosure

In addition to possible information asymmetries and management's opportunistic behaviours, savers' resource allocation processes is complicated by the fact that investors can choose between a plurality of companies. In other words, investors do not have only the dichotomous alternatives invest and not invest in one firm, but they have also the possibility to allocate their resources after the assessment of information from different companies. Therefore, since household savings are limited, competition between firms is not only on an operative level but also on a financial level consisted in attracting such monetary resources. As discussed before, corporate disclosure may catalyse the match between savers and entrepreneurs through the reduction of information asymmetries and agency problems; consequently, firm competition on capital market is strongly related with the information provided to the market agents. State differently, firms with better disclosure policies than the others may achieve more easily the benefits generated by the limitation of information and agency problems.

Since each industry is characterized by specific value drives (see for examples FASB, 2001) and the relative proprietary costs, particular mandatory

requirements and different importance of disclosure channels (see AIRM 1993-1994; 1995-1996), disclosure policies also depend on the industry to which the company belongs to. Such factors imply that external users should have explicit knowledge and capabilities in analysing and assessing corporate information (see chapter 1). The high cost associated with the development of such features induce investors and creditors, or more typically their intermediaries, to be focused and specialized on one industry. Therefore, it is reasonable to suggest that financial competition in capital market may be mainly limited at the industry level rather than the entire market.

In summary, within the same industry, firms with better disclosure policies may obtain more benefits than the others. On the other hand, disclosure is not costless (Viscusi, 1978); in fact, managers could choose not to fully communicate their information in order to protect firm competitive advantage (Wagenhofer, 1990) and pursue their own interests (Dye, 1985)⁶⁶. Consequently, it is expected that managers identify their best disclosure policy through the maximization of the difference between the benefits and costs under the constrain of competitors' decisions. Nevertheless, the role of the other firms in the industry on corporate disclosure is not limited to the achievement of the benefits (see paragraph 3.2.1) and the potential loss of competitive advantages (see paragraph 3.2.2), but there are also financial incentives that induce firm to

⁶⁶ Although manager opportunistic behaviour is a cost for the firm that may benefits from the disclosure of private information hold by the management enter in the company decision process only indirectly through the manager specific utility function. In addition, it can be argued that such behaviours may be partially solved through mechanisms like disclosure and optimal contract. Moreover, as reported in table1., companies have also cost related with the collection and the process of the information and possible litigation costs. While, the first case merely decrease the net benefit of disclosure because competitiveness is not affected; the second type of cost may reduce competitive advantage but won't increase the benefits.

Therefore, in this analysis, the main cost associated to disclosure is the potential loss of competitive advantage due to the diffusion of crucial information.

strategically influence investors' perceptions through the disclosure of valuable information on financial level rather than an operational level or the free-riding of competitors information (see paragraph 3.2.3). In addition, information and reputation herding may be the forces that generated similar disclosure policies within one industry (see paragraph 3.2.4).

Likewise several empirical studies (e.g. Lang and Lundholm, 1993 and 1996; Botosan, 1997; Sengupta, 1998; Healy *et al.*, 1999; Botosan and Plumlee, 2001; Nikolaev and Van Lent, 2005) using AIRM scores as measure of disclosure quality (see also paragraph 2.4) opportune structured equation models are built in order to verify if disclosure policies are influenced by competitors disclosure policies and identify the forces that drive this relation. In particular, the forces considered are the achievement of the benefits, free-riding, information herding, reputational herding and preferences (indifferent, operational success and financial success) on competition advantages.

This chapter empirically shows the important role that competitors have on disclosure policies and try to address the main competitive forces that influence competition. In addition, this work extends corporate disclosure determinants (see Ahmed and Courtis, 1999 and Chavent *et al.*, 2006) and changes in corporate disclosure literature (Bunshie and Noe, 2000) by including the disclosure policy of another firm which is leader in disclosure practice and size. The main results are that managers follow firms with better disclosure policies in order to achieve the relative benefit of good disclosure, on the other side the mimicking process induce firms with both low and high quality to converge to a certain level of disclosure.

RELATED LITERATURE

1.1.9 FIRM BENEFITS OF DISCLOSURE

Under the information and agency frameworks, several theoretical and empirical studies argued that firms are induced to voluntarily disclose important information in order to achieve three types of potential capital market benefits: improved liquidity for their stock in the capital market, reductions in their cost of capital, and increased following by financial analysts (see Healy and Palepu, 2001).

Improved stock liquidity. Since voluntary disclosure may reduce information asymmetries among informed and uninformed investors, stock transactions may occur at a “fair price” and, therefore, improve liquidity in the firm’s stock (Diamond and Verrecchia, 1991; and Kim and Verrecchia 1994). Also several empirical evidences (Welker, 1995; Healy *et al.*, 1999; Leuz and Verrecchia 2000, Gelb and Zarowin, 2000; and Bushee and Noe, 2000)⁶⁷ are consistent with this relation. In particular, using AIRM disclosure rankings of 97 firms in the period 1978 to 1991, Healy *et al.* (1999) found that firms that expand disclosure experience significant contemporaneous increases in stock prices that are unrelated to current earnings performance. On the same vein, Gelb and Zarowin (2000) found that firms with high disclosure ratings have high stock price associations with contemporaneous and future earnings relative to firms with low disclosure ratings.

Reduced cost of capital. The agency problem incentivizes the capital market agents to require voluntary disclosure in order to reduce the cost of capital. With similar results, Barry and Brown (1984, 1985, 1986) extended the classical

⁶⁷ Institutional ownership may arise as consequence of high voluntary disclosure and stock liquidity (see Bushee and Noe, 2000)

“lemon” problems including information risk as consequence of imperfect disclosure. Botosan (1997) provides only partial empirical evidences consistent with the cost of capital hypothesis. She found that for firms with low analyst following, there is a negative relation between cost of equity capital and the extent of their voluntary disclosures. Using AIRM disclosure ranking Botosan and Plumlee (2000) found controversial results on the relation between cost of capital and corporate disclosure. In particular, they found that cost of capital is negative association with annual report disclosures, positive association with quarterly disclosures and unassociated with investor relations’ activities. Sengupta (1998) and Nikolaev and Van Lent (2005) used the same disclosure measure and found a negative association between disclosure and cost of debt.

Increased information intermediation. In the view of the fact that mandatory disclosure may not contain all the information needed by reports external users (see paragraph 1.2) voluntary disclosure diminishes the cost of information acquisition for information intermediaries (e.g. analysts) and hence intensifies their supply (Bhushan, 1989a, 1989b; and Lang and Lundholm, 1996). Nevertheless, Healy and Palepu (2001) argued that effect of voluntary disclosure on analyst following is controversial. According to the previous quoted studies and several empirical evidences (e.g. Lang and Lundholm, 1993; Healy et al., 1999; and Frances *et al.*, 1997)⁶⁸ high disclosure increases demand for financial analysts’ services because it facilitates them to create valuable new information, more accurate forecast and better recommendations (see Lang and Lundholm. 1996; and Hope, 2003). On the contrary, if more public information

⁶⁸ As previously discussed, using AIRM disclosure rating Lang and Lundholm (1993) found that firms with more informative disclosures have larger analyst following, less dispersion in analyst forecasts, and less volatility in forecast revisions. Using similar scores Healy *et al.* (1999) showed that firms with increased analyst ratings of disclosure have lower analyst coverage than their industry peers in the pre-event period. After the increase in disclosure, however, analyst coverage for the sample firms reverts to the same level as other firms in the industry. Finally, Frances *et al.*(1997) reported that analyst coverage increase if firms make conference calls.

are available, analysts' intermediation on managers' private information may decrease or be less valuable.

Arya and Mittendorf (2005 and 2007) argued the opposite relation (not supported by Lang and Lundholm, 1996; and Hope, 2003) between disclosure and analyst following. They predicted that more accurate analyst is more likely to be able to obtain more relevant information from the firm they are analysing. Moreover, they showed that analyst following may be an important factor that influence the link between competition and disclosure. In particular, the fact that competition can reduce the appeal of disclosure, as presented in Leuz (2004) empirical analysis on German companies, is mitigated by the presence of third-party analysts.

In summary, the majority of accounting studies on the economic consequences of voluntary disclosure supports the evidence that firms try to achieve such benefits and their success depend also on the disclosure policies of their competitors. This last point is better underlined by the fact that in several empirical researches on this topic AIRM disclosure score are used (e.g. Lang and Lundholm, 1993 and 1996; Botosan, 1997; Sengupta, 1998; Healy *et al.*, 1999; Botosan and Plumlee, 2001; Nikolaev and Van Lent, 2005). In fact, *ceteris paribus*, better ranking is generally positively associated with superior stock liquidity, lower cost of equity and cost of capital, and higher following by financial analysts.

1.1.10 DISCLOSURE AND COMPETITIVE ADVANTAGES

The potential loss of competitive advantage is due to the diffusion of relevant information that may influence competitors' decision. In particular, it takes the form of loss profitability and entrant of another firm in the market.

Beside that, the prisoner dilemma arise when the entire scenario is considered. In fact, on one hand, firms are reluctant to voluntary disclose information which competitors deem pertinently. On the other hand, firms welcome transparency from rivals since it allows them to better tailor their product and service offering. Therefore, they may both receive benefits of mutual disclosure (Arya and Mittenorf, 2007).

Darrough (1993) presented different scenarios in which firms under Cournot and Bertrand competitors choose different disclosure policy depending on the competition and on *ex ante* and *ex post* incentives⁶⁹. Darrough and Stoughton (1990), Feltham and Xie (1992) and Ozbilgin and Penno (2005) endogenized proprietary costs⁷⁰ in a entry game in which an incumbent considers the effects of disclosure on both financial and product market because it has conflicting incentives in both case of holding favourable and unfavourable information. On one hand, disclosing positive (negative) information may raise (reduce) financial market appreciation; on the other, it probably trigger (avoid) the entrance of a competitor. Considering three players (the incumbent firm, the potential entrant and the financial market) Darrough and Stoughton (1990) discussed that competition increase voluntary

⁶⁹ Using a two-stage model of duopoly Darrough (1993) showed that in case of *ex ante* incentives firms would commit to share information under Cournot/cost and Bertrand/ demand competition and would not commit to disclose in Cournot/demand and Bertrand/cost cases. Since *ex post* scenarios depend on the competitor interpretation and expectation of both disclosure and not disclosure (unfavourable to disclose or any signal is received), in equilibrium, it is difficult for companies to hide information successfully. In fact, in Cournot/demand state all private information are probably disclosed; while in Bertrand/cost case and when the goods are substitute, disclosure is very rare.

⁷⁰ For example, Darrough and Stoutghton (1990) and Feltham and Xie (1992) implemented a model where incumbent's cost of disclosing proprietary information correspond to competitor's probability of entry. In Ozbilgin and Penno (2005) the competitive costs depends on the loss of profit caused by competitors decision and on the probability of favourable events and actions.

disclosure⁷¹. On the same vein, Feltham and Xie (1992) found that full disclosure or non disclosure occurs when one of the two market dominates the other; while partial information is disclosed when managers believe relatively balanced reactions⁷². Conversely from other models in which proprietary costs may reduce disclosure (e.g. Verrecchia, 1983; Dye, 1985; Darrough and Stoughton, 1990; Wagenhofer, 1990; Feltham and Xie, 1992; and Newman and Sansing, 1993), Gigler (1994) argued that proprietary cost can increase the amount of voluntary disclosures by lending credibility to voluntary disclosures⁷³.

Ozbilgin and Penno (2005) developed a simple game between two rival firms—a leader and a follower- and found different trading off between operational success and financial success based on the informativeness of the financial reports: the leader can decide to disclose accounting report not useful for the follower (e.g. the financial report aggregates many activities in addition to the activity the follower is interested in), only financial information or financial report with strategic operational content. In the first (second) case, the follower (leader) makes the choice less likely to be operationally successful, but more likely to lead to a financial success. In the third case, leader's strategies to

⁷¹ Darrough and Stoutghton (1990) showed different disclosure strategy equilibria depending on prior beliefs and entry cost. In particular, when prior is optimistic (pessimistic) there is a disclosure (non disclosure) equilibrium; in case of high entry cost there is partial disclosure equilibrium in which favourable (unfavourable) information is never disclosed (non-disclosed).

⁷² Feltham and Xie (1992) is an extension of Darrough and Stoughton (1990) in a continuum of possible private incumbent signal. In addition to the results already summarized, the authors found that managers are indifferent in issuing debt or equity if both results in full disclosure; on the contrary, managers strictly prefer to issue equity when they are induced to hold their private information.

⁷³ Since firms would like to report optimistically to the capital market and pessimistically to competitors, Gigler (1994) established how proprietary costs, incurred from the action taken by competitors when a firm chooses to disclose, may persuade investors that unverifiable disclosures are credible. Therefore, proprietary costs may provide the impetus for disclosure where there would otherwise be none.

adding operational transparency to financial disclosure depend on the associated financial costs.

Since the diffusion of operational information influences the competitive position of the firm, there are possible different disclosure strategies based on competitors' probable reaction and such disclosed information can be used on an operative level only by present and potential, the disclosure policies of intra-industry firms are strongly related with each other.

1.1.11 DISCLOSURE AND INVESTORS' PERCEPTIONS OF COMPETITORS' VALUE

In the previous paragraph on disclosure and competitive advantages it is shown that disclosure policies may change if, alongside the operational success, firms take into account financial success. However, more transparency is not the only way to obtain investors' appreciation; in fact, there are several theoretical studies that analysed disclosure policy and its possible effect on market's perception of firms and competitors' value (Dye and Sridhar, 1995; Admati and Pfleiderer, 2000 and Jorgensen and Kirschenheiter, 2005 among the others). Dye and Sridhar (1995) provided conditions under which managers' herding behaviour in their communication decisions since they are stimulated to disclose in order to attempt to influence the financial market's assessment of the firms' values, rather than the product market behaviour of other firms. Stated differently, they argued that investors may use one firm's disclosure to infer whether other same-industry firms have received similar information. If investors infer that a firm is withholding information, they may conclude that the information could be covering bad news, and subsequently, revise the firm's stock price downwards. This potential fall in stock price may then induce non-disclosing managers to disclose their information.

Admati and Pfleiderer (2000) underlined the effects of free-riding problems in case of correlation between firms' values. On the same vein of Verrecchia (1993), Jorgensen and Kirschenheiter (2005) found that disclosure strategy depends on the degree of correlation between the signal that two rival firms (a leader and a follower) may send to the market. They showed that when managers sequentially choose whether to disclose, the leader's disclosure strategy is strategically independent of the follower's, while the follower's strategy depends both on the disclosure decision of the leader and on the nature of the correlation. In particular, with positively correlated signals, the follower benefits from the leader's disclosures and free-rides by disclosing less frequently; while with negatively correlated signals, the follower discloses more frequently to overcome investors' rational revisions of beliefs based on the leader's disclosures⁷⁴.

Empirical researches have almost exclusively focused on the presence of accounting transfers between firms within one industry about information concerning earnings announcements (e.g. Firth, 1976; Foster 1981; Clinch and Sinclair, 1987; Han and Wild, 1990; and Freeman and Tse, 1992, Rammath, 2002), management earnings forecasts (Baginski, 1987; Han *et al* 1989; Pyo and Lustgarten, 1990), profit warnings (Tse and Tucker, 2007; Alves, Pope and Young; 2007), merger proposals (Eckbo, 1983) and dividend initiations (Firth, 1996). In particular, these studies argued that investors adjust their beliefs on non-disclosure firms with the information provided by other companies (competitors, suppliers and customers).

⁷⁴ Jorgensen and Kirschenheiter (2005) also found that disclosure strategies are independent of the correlation when managers disclose simultaneously. In addition, they showed that with perfect positive correlation, the first mover has an advantage as he can free-ride on the subsequent disclosures by the other manager. With perfect negative correlation, no disclosure occurs only for intermediate values of the signal.

Both theoretical and empirical research support the evidence that disclosure has direct implication on investors' perception of competitors' value.

1.1.12 THE EFFECT OF HERDING ON DISCLOSURE

According to Hirshleifer and Teoh (2003) herding is broadly defined to include any similarity or convergence in behaviour generated by the interaction of individuals or firms (see Chamley 2004, and Hirshleifer and Teoh 2003 for extensive summaries of the rational herding literature)⁷⁵. Disclosure in herds is may due to two possible factors: managers may use the private information diffused by other managers, and choose to assume the same disclosure strategy (e.g. Banerjee, 1992; Bikhchandani et al. 1992; Welch 1992); managers decision has a reputational constrain that force them to do not acting differently (see. Scharfstein and Stein, 1990; Trueman, 1994).

On the same principle of information transfer (see paragraph 3.1.3) under information herding setting, firms adjust their beliefs on the possible payoffs (Brown *et al.* 2006). In particular, agents determinate their strategy base on the past decision of others because such precedent choices reflect the private information that motivated competitors action. This implies that firms may have very similar disclosure policies (Banerjee, 1992; Bikhchandani, *et al.* 1992; Welch, 1992). In other words, if the first few managers receive positive payoff signals and choose to disclose (in this case the constrain benefits greater than costs is satisfied) induce the next manager to modify her/his belief of the value of disclosure and disclose too⁷⁶. Therefore, more managers choose to disclose

⁷⁵ The basic idea of rational herding is that behavioural convergence due to the fact that firms face similar decision choices, have similar information, and face similar payoffs. Therefore, they may randomly make similar decisions.

⁷⁶ Similar results are obtained in Darrough and Stoutghton (1990) Admati and Pfleiderer (2000) and Jorgensen and Kirschenheiter (2005) when disclosure generate payoff externalities (see paragraph 3.1.3).

(not disclose), the more likely it is that the next manager will also disclose (not disclose).

Scharfstein and Stein (1990) and Trueman (1994) argued that reputational herding is convergence of behaviours due to an agent's, manager or firms, attempt to obtain or maintain a good reputation with the principal (investors and creditors) relative to other similar agents. According to Scharfstein and Stein (1990), managers with a lower aptitude for making decisions may follow the disclosure choices of managers with higher aptitudes so as to influence investors' assessment of their ability (see also the signalling theory in Watts and Zimmerman, 1986). On corporate disclosure level, a firm may mimics the disclosure policy of high disclosure quality company in order to avoid investors to separate their type. In contrast, if corporate disclosure is not aligned with the best practise investors may distinguish between the two companies.

There are a several empirical evidences of herding in stock trades (e.g. Lakonishok *et al.* 1992; Grinblatt *et al.* 1995; and Wermers 1999), analyst forecasts and stock recommendations (e.g. Graham 1999; Hong et al. 2000; and Welch 2000), and capital investment decisions (e.g., Gilbert and Lieberman 1987; Mei and Saunders 1997). However only few empirical research studied herding in voluntary disclosure decisions (e.g Pincus and Wasley, 1994; Botosan and Harris, 2000; and Brown *et al.* 2006). In particular, using a sample of 107 multisegment firms that reported industry segment data on their annual report between 1987 and 1994, Botosan and Harris (2000) argued that pressure to conform to, or mimic, competitors' disclosure practices is a key factor precipitating the decision to disclose segment information. Pincus and Wasley (1994) provided evidence of industry and time period clustering in voluntary accounting changes, thus, implying herding in rule-based disclosure decisions. Brown *et al.* (2006) studied the voluntary disclosure contained in 1,338 capital

expenditure forecasts diffused by 622 publicly-traded firms listed to NASDAQ, NYSE and AMEX over the 8 quarters, 4Q 1999 to 3Q 2001. Using a duration analysis of multiple events, Brown *et al.* (2006) found that the propensity to release capital expenditure forecasts is increasing in the fraction of disclosing firms within the industry and in industry competition (informational herding). Moreover, they showed that managers are more likely to disclose expenditure plans when prior peer forecasts signal a decrease in future capital spending and are relatively precise and that less reputable managers exhibit greater tendencies to herd (reputational herding).

In summary, disclosure decision of a competitor may influence corporate disclosure through, at least seven forces. First, firms are conscious that those of them that will have a better disclosure than the other would probably achieve the benefits associated with the reduction of information asymmetries and the limitation of agency problems. Second, some managers may decide to free-ride the information already input in the market by other firms. Third, several companies may merely follow the disclosure decisions of their competitors; nevertheless, fourth, in order to maintain or increase their reputation less known managers might mimic main managers' decision. Fifth, some leaders may be indifferent to the disclosure decision of its competitors; while, sixth and seventh, others may prefer operational success rather than financial success.

MODELS AND FORCES

The controversial and mixed theoretical and empirical evidences suggest to adopt an explorative approach to the relation between corporate disclosure and competitors behaviours. Since it is difficult to isolate the forces previously described in singular components and it seems to be reasonable that they may simultaneously influence disclosure, hereafter three separate models are proposed in order to isolate such forces. Therefore, there is only one hypothesis:

Hyp: Within the industry, disclosure policy depends on competitors disclosure choices

In addition, the direction, the significance and the sign of the link among the factor considered in the model represent the main force that underline the relation.

1.1.13 THE MAIN FACTORS INVOLVED

All the seven forces previously described suggest that disclosure policy is affected by the decision taken before. In fact, managers may be able to assess with some degree of uncertainty the economic and operative consequences of maintain the same level of disclosure quality. For example, they know that company will lose some benefits only if other firms increase their disclosure; they will not lose competitive advantage because they have already disclosed the same information; potential competitors' free-riding of the information has

already happened and they may continue to free-ride the others⁷⁷. Moreover, for disclosing firms keeping constant disclosure is perfectly in line with information herding likewise reputational herding. In other words, although firms may deviate from their past disclosure policy, the variation on disclosure depends on it (see Figure 1).

Figure 1

DISCLOSURE → VARIATION OF DISCLOSURE

As already discussed in paragraphs 1 and 2 disclosure or its variations are influenced by the decision taken by competitors. In particular, the theoretical researches previously presented directly identify a leader (a duopoly is generally used); while from empirical evidences the disclosure best practise is implicit in the usage of rankings. Since the inclusion of all the competitors' behaviours is empirically unsustainable, a model that considers only the behaviour of the leader and the followers may be sufficiently representative of the disclosure dynamics in presence of competition (see Figure 2). Moreover, there are at least two criteria for identifying the leader: best disclosure and dominant position in the market (i.e. size).

Figure 2

VARIATION OF LEADER'S DISCLOSURE ↔ VARIATION OF DISCLOSURE

In summary, there are three basic factors: corporate disclosure, variation in follower disclosure and variation in leader disclosure. The relations among

⁷⁷ It seems reasonable that firm will not decrease their disclosure in order to free-ride competitors information because they may strongly decrease the benefits associated with disclosure if investors believe that. On the same vein, firm may not decrease their disclosure and sustain the relative cost just to avoid free-riding.

these factors are caused by the different forces that link disclosure policies within an industry.

1.1.14 LEADER IN DISLCOSURE

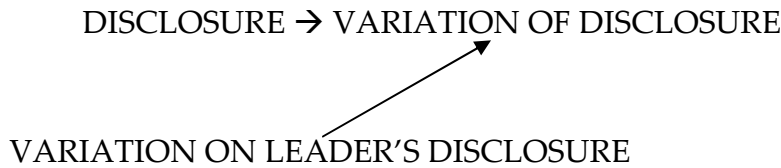
If disclosure is affected by the decision of a leader in disclosure the relation between the three factors are represented in figure 3. In this model, the forces that may generate a significant relation between the factors are:

1 *the achievement of disclosure benefits* if variation on leader's disclosure positively influence change in competitors' disclosure. In fact, firm observe leader disclosure and increase the quality of its disclosure in order to growth in ranking position which implies more benefits. In addition, also a positive impact of disclosure on its variation may be the sign that the achievement of benefits is a primary goal. Indeed, firms with good disclosure take all the decision in order to maintain such benefits and contrast the possible growth of competitors' disclosure with more disclosure.

2 *free-riding of leaders information* if there is a negative impact of leader's disclosure. Indeed, managers prefer to hold their information and let investors to infer from leader's more comprehensive disclosure.

3 *information herding* if disclosure has a negative impact on variation of disclosure on the same firm. This means that firm with high disclosure decrease (or increase less than the others) their disclosure quality. On the contrary, firm with low disclosure quality strongly improves their disclosure. Therefore, both of the types of firms tend to converge to a certain amount of disclosure.

Figure 2



1.1.15 LEADER IN SIZE AFFECTS COMPETITORS

As discussed in chapter 2 size may be considered as proxy of the attention received by all the stakeholders. Moreover, managers of bigger firms are probably those with higher reputation. Therefore, using the same model presented in figure 3, but replacing the variation of the disclosure of the best in disclosure with the change in disclosure quality of the leader of the market the following force is analysed:

4 *reputation herding* if there is a significant impact of leader's disclosure on competitors choices. In fact, managers with lower reputation may merely copy the decision taken by managers with more reputation.

1.1.16 LEADER IN SIZE IS AFFECTED BY COMPETITORS

Reversing the relation between leader and follower, the next model presented in figure 4, may capture the role of potential lost of competitive advantage. It seems reasonable to consider that bigger firms have a competitive advantage against the other; therefore, they may change their disclosure based after their competitors. Interpretation of the evidence are summarized as follow:

5 *Indifference* if there is a non significant impact of competitors' disclosure on leader's choices.

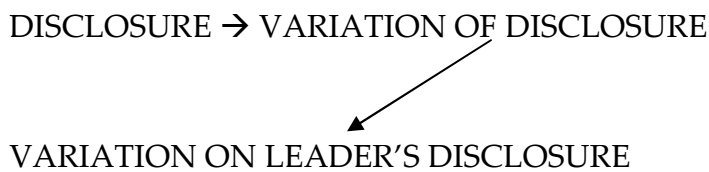
6 *Financial success* if there is a positive impact of competitors' disclosure on leader's choices. In fact, it may be sign of the fact that leaders

needs to disclose relevant operational information (than reduce competitive advantage) in order to achieve financial success.

7 *Operational success* if there is a negative impact of competitors' disclosure on leader's choices. The leader recognize that it may increase its competitive advantage trough a reduction of the information concerning operational activities.

8

Figure 4



METHODOLOGY

Sample selection and data sources

The sample determination is the same as in chapter 2 and depend on the availability of AIRM disclosure scores and financial data in DataStream. In order to avoid redundancy, a firm is excluded if it is classified as a leader. In addition, the number of observations may vary among models because leaders are identified using all the information collected (i.e. also observations with partial data are considered) and only their disclosure scores are included in the models.

Concerning the identification of leadership in size, the score of the first factor of a principal component analysis between market value, analysts follow, number of employees and fortune ranking is used.

Disclosure measures

The analysis of the three disclosure channels (annual reports, other publications, investor relations) presented in chapter 1 and the empirical evidences reported in chapter 2, underlined that firms have a different usage of the diverse channels. Moreover, the three channels allow different timing in disclose information (from one time in a year to daily disclosure with press releases); therefore, it may be possible that managers react in a different way. For example, some firms may mimic competitors behaviours in annual report after one year, or change their investor relations' activities simply because investors have reported competitors practise. Consequently, the three models are run for each channel separately.

Starting from disclosure scores and rankings two measures for each channel had been constructed:

- *Absolute value*: the AIMR score (Unweighed).
- *Ranking*: the first factor of a principal component analysts between the AIMR weighed score minus the median of the industry in one specific year and the ranking form used in Lang and Lunholm (1996) $-(\text{rank}-1)/(\text{number of firms}-1)$.

In order to reduce the sample bias in measuring disclosure, all these proxies have been calculated considered the entire database. Moreover, following Botosan and Plumlee (2002), it has been assumed that score at year t refer to a period that goes from 1st July t-1 30th June t.

Variation in disclosure measures

For both leaders and followers, two measures of change in disclosure policy are calculated.

- *Perceptual variation in disclosure.* (Unweighed)⁷⁸
- *Variation in disclosure* (Weighed for channel importance)

In this case both the weighed and the unweighed measures of disclosure are used in order to mitigate the fact that analysts' importance of the channel may cause a bias variation in disclosure.

Since the lag of time before firm respond to competitors' stimuli is unclear, both simultaneous and with one year of lag variation are calculated.

Following determinants of disclosure literature and the methodology discussed and presented in chapter 2 a set of five factors that may influence disclosure are included in the model.

Size

Four measure of size are used: natural logarithm of market value, analysts follow, number of employees and fortune ranking in sales.

Debt

Two measures of debt are used: Debt-to-Equity (D2E) and Debt-to-Assets (D2A). For both measure the first factor of principal components analysis between the absolute and the difference with industry-year median are used.

Risk

Following the same procedure of principal components analysis, average of monthly BETA is calculated trough Datastream is used as measure of risk.

Information uncertainty

⁷⁸ In all the models run results are substantially the same also when weighted score are used.

Following the same procedure for BETA, average of monthly stock volatility is used as information uncertainty measure.

Profitability

Two measures of profitability are used: Return-On-Equity (ROE) and Return-On-Sales (ROS). Also in this case the first factor of principal components analysis between the absolute and the difference with industry-year median are calculated.

Potential growth

The first factor of a principal component analysis between the absolute measure and its difference with industry-year median of Market-to-Book and Market-to-Assets are used as measure of potential growth

Statistical Method

As in chapter 2, structural equation models are applied (for a short summary on structural equation modeling see Appendix 2).

RESULTS

As previously discussed, the three models presented above are replicated for each disclosure channel. In addition, variation in disclosure are calculated between the same years and with one year of lag.

1.1.17 LEADER IN DISLCOSURE

The first model analysed consider the fact that the variation of disclosure of the leader in disclosure may affect followers. In table 2-4⁷⁹ the results of each combination channel-lag are reported. In particular, the former table contains the completely standardized solution using variation in the same years, while the second is generated when leader's disclosure variation of one year before is used. In table 3, the goodness of fit statistic of the six models are reported. As can be seen, both the simultaneous and the delay models show a significant and positive effect of the leader on follower in all the three channels (only the delay model for annual disclosure have a non significant coefficient). According with the previous discussion these results support the expectation that firms follow leader behaviours in order to achieve the benefit due to a better disclosure. On the other hand, free-riding of leaders information is rejected.

⁷⁹ Table 1 and 2 must be read as follow: factor in columns affect the factor in row

Table 10 Completely scandalized solution when variation of leader and follower's disclosure refer to the same year (significant coefficient in bold)

Same year	Leader	Disclosure	Risk	IU	Prof	Growth	Size	Debt	R2	
	Ann	0.14	-0.35	-	-	-	-	-	0.46	
Delta Disclosure	Oth	0.31	-0.33	-	-	-	-	-	0.26	
	IR	0.11	-0.36	-	-	-	-	-	0.14	
	Ann	-	-	0.09	-0.13	0.02	0.01	-0.10	-0.07	0.02
Dislcosure	Oth	-	-	-0.08	0.12	0.08	-0.03	0.01	0.01	0.01
	IR	-	-	0.12	-0.02	0.06	0.05	0.04	-0.02	0.02
	Ann	-	-	-	-	-	-	-0.21	0.08	0.05
Risk	Oth	-	-	-	-	-	-	-0.21	0.08	0.06
	IR	-	-	-	-	-	-	-0.21	0.13	0.07
	Ann	-	-	0.56	-	-	-	-0.38	0.12	0.35
Info. Uncertainty	Oth	-	-	0.54	-	-	-	-0.40	0.10	0.58
	IR	-	-	0.55	-	-	-	-0.38	0.12	0.63
	Ann	-	-	0.14	-0.30	-	-	0.10	-0.19	0.46
Profitability	Oth	-	-	0.10	-0.27	-	-	0.06	-0.22	0.15
	IR	-	-	0.12	-0.26	-	-	0.13	-0.21	0.13
	Ann	-	-	-0.05	0.00	0.37	-	-0.16	-0.38	0.35
Potential growth	Oth	-	-	-0.03	-0.05	0.29	-	-0.17	-0.37	0.29
	IR	-	-	-0.04	-0.01	0.33	-	-0.13	-0.38	0.31

Annual Report= Ann
Other Publication= Oth
Investor Relation = IR

Table 11 Completely scandalized solution when variation in leader's disclosure refers to the previous year (significant coefficient in bold)

Previous year	Leader Disclosure			Risk	IU	Prof	Growth	Size	Debt	R2
Delta Disclosure	Ann	-0.14	-0.29	-	-	-	-	-	-	0.11
	Oth	0.31	-0.26	-	-	-	-	-	-	0.19
	IR	0.13	-0.36	-	-	-	-	-	-	0.15
Dislcosure	Ann	0.01	-	-0.01	-0.03	0.01	0.01	-0.06	-0.14	0.03
	Oth	-0.15	-	-0.09	0.12	0.10	-0.20	0.01	0.03	0.03
	IR	-0.04	-	-0.11	-0.01	0.07	0.05	-0.01	0.05	0.02
Risk	Ann	-	-	-	-	-	-	-0.22	0.08	0.06
	Oth	-	-	-	-	-	-	-0.21	0.09	0.06
	IR	-	-	-	-	-	-	-0.21	0.13	0.07
Info. Uncertainty	Ann	-	-	0.61	-	-	-	-0.38	0.07	0.65
	Oth	-	-	0.54	-	-	-	-0.40	0.10	0.58
	IR	-	-	0.55	-	-	-	-0.41	0.12	0.63
Profitability	Ann	-	-	0.17	-0.37	-	-	0.11	-0.19	0.20
	Oth	-	-	0.09	-0.27	-	-	0.06	-0.22	0.14
	IR	-	-	0.12	-0.26	-	-	0.06	-0.21	0.13
Potential growth	Ann	-	-	0.01	-0.10	0.34	-	-0.20	-0.39	0.34
	Oth	-	-	-0.03	-0.05	0.29	-	-0.17	-0.37	0.29
	IR	-	-	-0.04	-0.01	0.33	-	-0.13	-0.38	0.31
Annual Report=	Ann									
Other Publication=	Oth									
Investor Relation =	IR									

Table 12 Goodness-of-fit statistics

	Same year			Previous year		
	Ann	Oth	IR	Ann	Oth	IR
n	578	620	598	499	498	477
RMSE	0.086	0.088	0.087	0.084	0.084	0.080
NNFI	0.87	0.86	0.87	0.87	0.88	0.88
CFI	0.91	0.91	0.91	0.91	0.91	0.91
SRMR	0.074	0.079	0.077	0.077	0.079	0.077

In addition, conversely from the simultaneous models the delay models include the effect of the leader also on disclosure quality. In these cases, only other publication disclosure is significant and negative. This can be sign of the fact that firms do not anticipate leaders' decisions but respond immediately.

Concerning the role of past disclosure, results strongly confirm information herding. In fact, disclosure quality have a negative impact on variation of disclosure. In other words, firms with high disclosure quality tend to decrease it or improve disclosure less than firms with poor disclosure quality⁸⁰. Therefore, it seems that disclosure practises converge to one level.

It is important to underline, that the goodness-of-fit statistics are not completely satisfactory; however, it may be due to the fact that almost always the factors that affect disclosures are not significant. In fact, models that consider only the amount of disclosure and the two variation of discourse, produce the same results, but with very satisfactory goodness-of fit statistics. Moreover, a robustness check of the model derive by the fact that the role of size, debt, risk, uncertainty, profitability and potential growth are very similar between the six models.

1.1.18 LEADER IN SIZE AFFECTS COMPETITORS

In Table 5 main results of the models that consider leadership in size are reported. Since both the simultaneous and the delay models have very similar results, only the first groups are reported. Moreover, also the role of the other factors that affect disclosure are not reported because they merely confirm previous results presented in table 2 and 3. As can be seen, except for investor relations activities, leaders have a quite strong influence on disclosure policies. Such evidences, for annual reports and other publication confirm reputational herding; while for investor relations, it seems that the leaders and follower are not related. This may be due to the probable different amount of recourses that bigger firm can allocate to IR.

⁸⁰ Further investigation support that firms with higher disclosure quality generally decrease it; while corporate with poor disclosure quality strongly improve it.

Table 13 Completely scandalized solution whit simultaneous variation of disclosure and leader in size (significant coefficient in bold) and goodness-of fit statistics

Same year	Leader	Disclosure	R2
	Ann 0.17	-0.36	0.16
Delta Disclosure	Oth 0.32	-0.38	0.25
	IR 0.08	-0.37	0.14
	Ann	Oth	IR
n	578	620	598
RMSE	0.086	0.088	0.087
NNFI	0.87	0.86	0.87
CFI	0.91	0.91	0.91
SRMR	0.074	0.079	0.077

Concerning the goodness-of-fit statistic it can be argued the same as in the previous paragraph. In fact, further test without the control factors estimate similar parameters, but with a very satisfactory set of goodness-of-fit statistics.

1.1.19 *COMPETITORS AFFECTS LEADER IN SIZE*

This set of cases, show that leaders are not influenced by follower disclosure, as reported in table 6.

Table 14 Completely scandalized solution whit simultaneous variation of disclosure and leader in size (significant coefficient in bold) and goodness-of fit statistics

Same year	Delta Disclosure	R2	
Leader	Ann -0.08	0.01	
	Oth -0.09	0.02	
	IR -0.11	0.03	
Disclosure	Ann 0.42	0.25	
	Oth 0.16	0.20	
	IR 0.41	0.22	
	Ann	Oth	IR
n	490	494	494
RMSE	0.083	0.087	0.084
NNFI	0.87	0.86	0.87
CFI	0.91	0.91	0.91
SRMR	0.074	0.079	0.073

This result supports the fact that bigger firms do not need to respond to competitors behaviours because they prefer to do not disclose more information and, consequently, loss some competitive advantages, because their features allow them to achieve financial success anyway.

As for the previous models only main results are reported and discussion on goodness of the model remain the same.

CONCLUSIONS

The role of competitors in determining disclosure policy is crucial and mainly related with the achievement of the benefits due to a better disclosure and information and reputational herding. In particular, theoretical and empirical studies showed that, *ceteris paribus*, those firms with better disclosure have higher stock liquidity, lower cost of capital and more intermediation. On the other side, there are strong evidences that managers mimic the behaviours of their competitors. Unfortunately for investors, it seems that such mimicking processes do not induce all the companies to increase their disclosure quality, but their policies converge to a certain industry practise.

As discussed in the following chapter these both firms and investors might be interested in these results.

This work suffer form several limitation. As for the previous chapter the dataset is quite old and incomplete. Moreover, not all possible determinants of disclosure have been included in the model (for example age or property structure). In addition, the identification of the leader is a function of the industry, but this is not always true. For example, in the Italian capital market those firms that belong to the STAR segment may follow each other rather than industry competitors.

CONCLUSIONS

The main objective of this work is to increase the knowledge about corporate disclosure policies through the analysis of two external subjects that may affect the flow of information from companies to the other members of the capital market: press and competitors. The importance of their role derives from the heterogeneous features and needs of the external users of corporate reports. As discussed in chapter 1, "*Corporate disclosure*", both mandatory and voluntary disclosure are mainly used by sophisticated investors or creditors (present, potential or financial intermediaries) which might have the appropriate knowledge and capabilities to read them. In addition, these type of stakeholders exert a strong pressure on the quantity and quality of the information diffused in order to decrease information asymmetries. As consequence, on one side, unsophisticated stakeholders may be more inefficient in their resources allocation respect the sophisticated ones because they have to make their assessment with less information. Therefore, unsophisticated stakeholders generally use information intermediaries, like press, which analyse the information reported, summarize main events, collect information from alternative sources and make comparisons between firms. On the other side, an improvement of the informativeness of corporate disclosure increased competitors' attention on corporate reports for three main reasons: decreasing competitive advantage, free-riding information and mimic others' decisions.

Conversely from the expectations, high press coverage do not decrease information asymmetries; however, it seems that journalists dedicates more attention to those firms with poor performance or high potential growth. In addition, there is a sort of substitution between official corporate disclosure and

press coverage. In fact, when firms have good interim communication and timeless press releases press coverage is lower.

The role of competitors in determining disclosure policy is crucial and mainly related with the achievement of the benefits due to a better disclosure and information and reputational herding. In particular, theoretical and empirical studies showed that, *ceteris paribus*, those firms with better disclosure have higher stock liquidity, lower cost of capital and more intermediation. On the other side, there are strong evidences that managers mimic the behaviours of their competitors. Unfortunately for investors, it seems that such mimicking processes do not induce all the companies to increase their disclosure quality, but their policies converge to a certain industry practise.

The result of this study might be interesting for firms, investment analysts and investors. Concerning press coverage, firms may better understand the environmental conditions that induce journalist to pay attention on their firms. Moreover, the fact that, in certain conditions, news are often unable to reduce information asymmetries may induces managers to improve disclosure quality. This implies that manager may strategically use official disclosure channels. On the competition side, the mimicking process may be considered as an easy and secure solution to take or a great opportunity. In other words, when managers merely follow other companies decision in order to maintain the benefits already achieved without losing competitive advantages. Conversely, since companies converge to a common industry practise, managers can deviate from it and improve their benefits. Since more disclosure quality may generate a lost of competitive advantages, some managers may think to compete with bigger firm on that level. Stated differently, some managers would like to capture information from competitors through increasing their disclosure first. However, this strategy may not be

successful if the goal is receiving information from bigger companies. In fact, it seems that managers of main business do not care about the decision taken by smaller players.

On the analysts investors or investors in general, the fact that press is more oriented to write about outlier in performance firms may suggest to directly press firm. Whereas investors have a mainly speculative approach to the market, press coverage may be a positive signal of potential high profitable and risky firms. The influence of competitors on disclosure practice may worry investors because it seems that firms try to achieve a pooling equilibrium in disclosure. Therefore, corporate disclosure is not the only mean to use for allocating resources, but single investors knowledge and capabilities to assess information will become more important.

At this point it may be more clear why “Corporate disclosure: an analysis of different channels” is the title of this dissertation. Indeed, the only point of contact between the two main topics contribution, press coverage and disclosure quality (see chapter 2) and the competitors’ role on disclosure (see chapter 3), is not only the former part of the title: “corporate disclosure”. Instead, the two pivotal words that connect them are in the latter part of the title: “different channels”. From the discussion in chapter 1 arise that corporate disclosure is a complex process in which not only firms and investors are involved. Therefore, the necessity to analyse corporate disclosure with a broader view drive the research to investigate press and competitors as two alternative channels of disclosure. In fact, the former contribute to provide more information (successful usage of information depends on the readers) about very good or very bad firms; while the latter may be a useful mean of industry environment or it may identify those firms with poor performance.

A NOTE ON STRUCTURAL EQUATION

MODELS

BASIC CONCEPTS

“Structural equation models (SEM) are vehicles for bringing together the parts of the research enterprise in a holistic way” (Bagozzi, 1994, p317). Stated differently, the theoretical framework and its empirical investigation are contemporary and directly present into a unique model. In particular, the constitutive elements of the theoretical component, the theoretical constructs and the relations (hypotheses) among them, are specified as latent concept and represented in a network of casual or functional path respectively. Thus, the **structural model** defines the direct and indirect relations between latent variables. Since latent factors are not directly observable, the researcher must operationally define a set of observable variables linked to the latent variable (measurement model). Therefore, direct and indirect relationships between measures capture the empirical content of the research scheme. In other words, the **measurement model** identify the link between observed and unobserved variables. In summary, a full SEM is composed by both measurement and structural model. In order to emphasize the integration of the theory with method and observations Bagozzi (1994) named “theoretical empiricism” the general philosophy of SEMs⁸¹.

⁸¹ Theoretical empiricism derives mainly from scientific realism because for both of them, natural law are defined as the relation between the common characteristics among observable entities. In addition, it combine the application of logical method, likewise logical empiricism, with the systems of beliefs of the observers, typical of relativism (see Bagozzi, 1994). For a summary of philosophical approach and tradition of research in finance and accounting see Ryan and Scapens (2001).

A more pragmatic approach see structural equation modeling as “a statistical methodology that takes a confirmatory (i.e. hypothesis-testing) approach to the multivariate analysis of structural theory bearing on some phenomenon” (Byrne, 1998 pp:1). SMEs represent the casual processes under study though a system of structural equations (i.e. regressions) that can be simultaneously analysed and tested. In particular, a satisfactory goodness-of-fit implies that plausibility of the relation among variables (both latent and observable) (Byrne, 1988). Moreover, it is important to underline that all the links are linear.

Factor analysis is the typical statistical procedure for investigating relations between a set of observed and latent variables. Generally factor analysis is associated to principal component analysis and it is applied when the links between variables is unknown or uncertain. In this case, a more appropriate term is exploratory factor analysis. Conversely from exploratory factor analysis, confirmatory factor analysis, which is a SEM without casual links among unobservable variables, allowed to verify the relations between a set of latent variables under the constrains theoretically imposed by the researcher. In particular, CFA is useful for verify if two sub-sets of measures belong to one latent concept or to two distinct latent factors.

THE SEM LANGUAGE

As in other statistical methods (likewise ordinarily least square), SEM nomenclature, and in particular the command language of LISREL, distinguish between exogenous latent variables (i.e. independent variables), indicated with ξ , and endogenous latent variables (i.e. dependent variables), indicated with η . The matrix of coefficient that relate exogenous variables with endogenous

variables is called Γ , while B indicate the matrix of coefficient between endogenous. Γ , B , and the error term ζ are identified in the structural model.

Structural model

Also the measures associated to exogenous and endogenous variables are named differently. The measure of the formers are called x , while y is used for the latters. The matrix of coefficient are named respectively Λ_x and Λ_y , whereas Θ_δ and Θ_ϵ respective indicated the errors.

Measurement model for the X-variables

Measurement model for the Y- variables

In Table 1 the notation used is summarized.


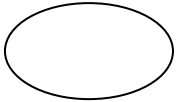
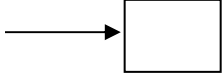
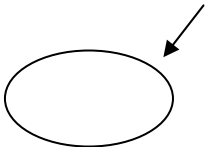
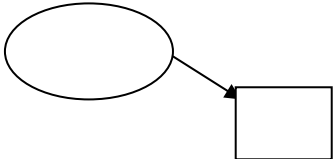
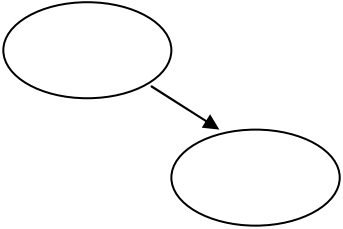
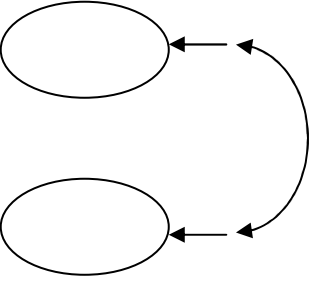
Table 15 Summay of SME notation

Greek letter	Matrix	Elements	LISREL code	Type
<i>Measurement model</i>				
Lambda-X	Λ_x	λ_x	LX	Regression
Lambda-Y	Λ_y	λ_y	LY	Regression
Theta delta	Θ_δ	θ_δ	TD	Var/Cov
Theta epsilon	Θ_ϵ	θ_ϵ	TE	Var/Cov
<i>Structural model</i>				
Gamma	Γ	γ	GA	Regression
Beta	B	β	BE	Regression
Phi	Φ	ϕ	PH	Var/Cov
Psi	Ψ	ψ	PS	Var/Cov
Xi		ξ		Vector
Eta		η		Vector
Zeta		ζ		Vector

Var/Cov= varaince-covariance

The explanatory power of SEMs is also due to the efficacy graphical representation of the conceptual model. In Table 2 the symbol for path diagram used in LISRLE and generally accepted is presented.

Table 16 Path symbols and SME notation

	<p>Observed or manifest variable</p>
	<p>Unobserved or latent variable</p>
	<p>Measurement errors associated with observed measure</p>
	<p>Residual errors in prediction of unobserved measure</p>
	<p>Effect of a latent variable on its measure</p>
	<p>Effect of a latent variable on another: a) straight arrow signifies assumption that variable at base of arrow "causes" variable at head of arrow b) two straight single-headed arrows signify feedback relation or reciprocal causation c) endogenous can not affect exogenous d) exogenous can not affect exogenous</p>
	<p>Association between two latent variable</p>

STRENGTHS AND WEAKENESS OF SME

In brief, SEM are made up of four elements: the latent variables, their measures, the errors associated to both unobservable and observable variables and the relations between latent variables. A full SEM is a system of equations that jointly relates each latent variable with its measures and one unobservable variable with another.

SEMs have been chosen for three main reasons: the complexity of the latent concept, the “casual” relations and the non independence of the measures’ errors. First, in general only one measure is used as proxy of a single latent concept⁸², this cause a lost of accuracy in the analysis of the model. While, using SEM, each latent concept is typically measure with more than one observable variable. Second, corporate disclosure is one of the main theme studied and discussed in accounting literature, and all these researches showed that a variety of factors affect or are affected by firms’ communication. Such plurality of factors implies that more than one factor may be endogenous and also indirect effects might be considered. Third, SMEs allowed to free the correlations between measures’ errors if its needed. For example, since Return-On-Equity and Market-to-Book ratio have the denominator in common it is reasonable that their respective errors are related.

On the other side, more than one measure is not always available; therefore, it may be assumed that the theoretical concept is perfectly identified with its measure (for solving this problem see Bagozzi, 1980). Concerning accounting studies, controversial theoretical and empirical evidences reduce the probability of testing models that fit well. In fact, for the principle of

⁸² When more than one are identified, generally, researchers use two method: substitute them or synthesize their informative power though exploratory factor analysis.

parsimony, goodness-of-fit statistic may be unsatisfactory due to the presence of several non-significant relations.

According to Byrne (1998) a model is considered satisfactory if the following limit for the goodness of fit statistics are respected:

- *Minimum Fit Function Chi-Square: $P > 0.1 \rightarrow ok$*

Since the χ^2 - measure is sensitive to sample size (if the number of observations is high it may generate a lower p-values and, consequently, an unsatisfactory model) and very sensitive to departures from multivariate normality of the observed variables. Therefore, although in all the models presented in this work, *the p-value of the Chi-Square test is expected to be close to zero*, it seems reasonable to do not evaluate the goodness of the model through the Chi-Square test.

- *Root Mean Square Error of Approximation (RMSEA) $< 0.10 \rightarrow ok$*
- *Non-Normed Fit Index (NNFI) $> 0.90 \rightarrow ok$*
- *Comparative Fit Index (CFI) $> 0.90 \rightarrow ok$*
- *Standardized RMR $< 0.08 \rightarrow ok$*

THE DIFFUSION OF SME METHOD

Only a few works in accounting apply SEMs. For example, Barton and Mercer (2005) used this statistical method in order to test analysts' reactions to external explanations for poor financial performance. However, beside studies in medicine, medicine, sociology, psychology and education (for several examples Byrne, 1998), SMEs are wide diffused in business and marketing researches (for several examples Bagozzi, 1994, Byrne, 1998 and Joreskog and Sorbom, 1003).

APPENDIX A

List of the main US newspaper for Lexis-Nexis:

1. The Arizona Republic (Phoenix)
2. Arkansas Democrat-Gazette
3. The Atlanta Journal and Constitution
4. The Baltimore Sun
5. The Boston Globe
6. The Boston Herald
7. The Buffalo News
8. The Charlotte Observer
9. Chicago Sun-Times
10. Chicago Tribune
11. The Christian Science Monitor
12. The Cincinnati Enquirer (Ohio)
13. The Columbus Dispatch
14. The Courier-Journal (Louisville, Kentucky)
15. Daily News (New York)
16. The Dallas Morning News
17. The Denver Post
18. Detroit Free Press
19. The Detroit News (Michigan)
20. Fort Worth Star-Telegram
21. The Hartford Courant
22. The Houston Chronicle
23. The Indianapolis Star (Indiana)
24. Journal of Commerce
25. The Kansas City Star
26. Los Angeles Times
27. Miami Herald
28. The Milwaukee Journal Sentinel
29. The New York Post
30. The New York Times
31. Newsday (New York, NY)
32. The Oklahoman
33. The Orange County Register
34. The Oregonian
35. Orlando Sentinel
36. The Philadelphia Daily News (PA)
37. The Philadelphia Inquirer
38. Pittsburgh Post-Gazette
39. The Plain Dealer
40. Rocky Mountain News
41. Sacramento Bee
42. Saint Paul Pioneer Press
43. San Antonio Express-News
44. San Diego Union-Tribune
45. The San Francisco Chronicle
46. San Jose Mercury News
47. The Seattle Times
48. St. Louis Post-Dispatch
49. St. Petersburg Times
50. Star Tribune (Minneapolis MN)
51. Sun-Sentinel (Fort Lauderdale)
52. The Tampa Tribune
53. The Times-Picayune
54. USA Today
55. The Washington Post

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