

DISCLOSURE OF NON-FINANCIAL INFORMATION: RELEVANT TO FINANCIAL ANALYSTS?

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Abstract

The decline in the relevance of financial statement information to value firms leads to calls from organizational stakeholders to convey non-financial information in order to be able to judge firms' financial performance and value. This literature review aims to report extant literature findings on the use of corporate non-financial information by sell-side financial analysts, the information intermediaries between corporate management and investors. Prior studies highlight that financial analysts rely upon corporate non-financial information in their firm assessments. When firms to a larger extent disseminate non-financial information, financial analysts are able to submit more accurate earnings forecasts and the consensus among financial analysts' earnings estimates is larger. However, the literature review also illustrates that financial analysts ascribe more weight to particular types of non-financial information. For instance, they consider forward-looking information or strategy and product-related information more relevant in firm valuation compared to intellectual capital information or social and environmental information.

Keywords: financial analysts; non-financial information; voluntary disclosure

JEL codes: M41, M48

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I. INTRODUCTION

This article aims to review prior literature on the relevance of non-financial information in the decision-making process of financial analysts. Information conveyed by firms is relevant when financial analysts rely on it in their equity valuation or in their forecasting work (Cormier and Magnan, 2013). The globalization, technological evolutions, and the transition towards a knowledge economy increase the usefulness of non-financial information in judging firm value in addition to financial information (Arvidsson, 2012; IFAC, 2013). The decline in relevance of financial information in explaining a firm's value (Lev and Zarowin, 1999; Francis and Schipper, 1999; Dontoh et al., 2004; Liang and Yao, 2005; Hail, 2013), leads to the recognition that financial statement information is insufficient to satisfy the information needs of stakeholders to assess firms' performance. Stakeholders put pressure on firms to report non-financial information about their strategy, their investments in research and development or their customer satisfaction levels, in order to judge firm performance and to predict future earnings. Since regulatory requirements related to non-financial information are almost absent (IFAC, 2013), firms have to report such information voluntarily.

The current literature review focuses on studies investigating the use of non-financial information by sell-side financial analysts¹, as these stakeholders are important users of corporate information (Luo et al., 2014). Sell-side financial analysts are employed by brokering firms, investment banks or research firms to assess the performance of listed firms and to disseminate corporate information, earnings estimates and stock recommendations to their clients, such as retail and institutional investors (Beyer et al., 2010; Pinho et al., 2013). These investors rely upon the financial analysts' reports and recommendations to make investment decisions (Fogarty and Rogers, 2005; Johansson, 2007; Groysberg et al., 2008). Sell-side analysts cover a limited number of listed firms and are often industry specialists.

Financial analysts perform two different and important roles in capital markets. First, financial analysts are intermediaries collecting information from firm management and relaying this information to investors (Lang and Lundholm, 1996; Barker, 1998; Ivković and Jegadeesh, 2004; Cheng et al., 2006; Chen et al., 2010). Analysts add value to investors by transforming public and private information into earnings forecasts and stock recommendations which are used by investors to make investment decisions (Hong et al., 2000; Elgers et al., 2001; Chen et al., 2010). Especially with regard to non-financial information, financial analysts add value to investors by translating the bulk of non-financial information disclosed by firms into comprehensive information to investors. Although investors' needs of non-financial information increased over time, investors have difficulties to interpret the value and the earnings effects of non-financial disclosures (Maines and McDaniel, 2000;

¹ Buy-side financial analysts are hardly examined in prior literature since they rely upon information from sell-side financial analysts to make decisions. These analysts typically do not provide detailed assessments and forecasts since they cover a much larger number of firms in comparison to sell-side financial analysts.

Maines et al., 2002; Hoff and Wood, 2008). In addition, no uniform reporting format exists for non-financial disclosures creating differences in the presentation of this information across firms (Simpson, 2010; Eccles et al., 2011), which raises the complexity in analysing non-financial information. The lack of investors' knowledge concerning the valuation impact of non-financial information increases the incentives for financial analysts to clarify how this information impacts firm performance and firm value.

Firm monitoring is a second important function of financial analysts. By assessing firms, analysts are able to attenuate equity agency conflicts between investors or shareholders on the one hand, and corporate management on the other hand (Chung and Jo, 1996; Doukas et al., 2000). The decline in the usefulness of financial statement information to value firms even increases the importance of this monitoring role (Chung et al., 2005; Jiraporn and Gleason, 2007; LaFond and Watts, 2008).

Prior literature uses two approaches to understand the financial analysts' behaviour regarding non-financial information. Some studies indirectly investigate analysts' reliance on corporate non-financial information by relating the extent and quality of non-financial disclosures to properties of analysts' earnings forecasts. Other studies directly address financial analysts' use of non-financial information through questionnaires, interviews, or content-analysing the reports issued by financial analysts.

Based on the literature review, we conclude that financial analysts employ non-financial information in estimating future firm performance and firm value. Firms releasing a larger amount of non-financial information allow financial analysts to report more accurate earnings estimates and to provide less dispersed earnings forecasts. Survey-based evidence and the content analysis of analyst reports also demonstrate the increasing use of non-financial information by financial analysts over time. However, the research findings also document some variation in the types of non-financial information used. In general, financial analysts tend to rely more on forward-looking information, strategy-related information and product-related information. Financial analysts hardly use intellectual capital information or corporate social responsibility information. Potentially, the lower reliability of the latter information elements in predicting firms' cash flows restricts their use.

Presenting extant literature results related to the relevance of non-financial information for financial markets participants is useful to firm managers in order to make decisions regarding their disclosure policy. Since non-financial information leads to proprietary costs, it is important for firms to gauge the benefits and costs of disclosure. The findings are also useful to regulators to understand the non-financial information needs of capital market participants, and hence to potentially consider public reporting for those non-financial information elements which are useful to financial analysts to judge firm performance.

The remainder of the literature review is organized as follows. Section 2 discusses prior literature on the disclosure of non-financial information by firms. Section 3 highlights literature findings on the financial analysts' use of non-financial information. Section 4 provides some concluding remarks and suggestions for further research.

II. THE DISCLOSURE OF NON-FINANCIAL INFORMATION

Prior literature emphasized the increasing importance of non-financial information in judging firms' value over time (Zéghal and Maaloul, 2011; IFAC, 2013). Although financial information remains important in firm valuation and in the decision-making process by investors and other external stakeholders (Cole et al., 2012), this information is of declined value to these stakeholders (Dontoh et al., 2004; Liang and Lao, 2005). Financial statements are inadequate to reflect intangible and other non-financial value drivers, such as customer satisfaction or employee experience (Holder-Webb, 2009; Simnett et al., 2009). The relevance of financial information in firm valuation decreased due to the outdated nature of this information, the discretion employed by managers to estimate financial information and the changing environment in which firms operate. With the latter, the globalization and the growing influence of multinationals, the transition to a knowledge economy, the introduction of new technologies, the financial crisis, the growth in ethical/socially responsible investments² or the climate change are considered (Francis et al., 2002, Dhaliwal et al., 2011; Hail, 2013). Financial information hence explains a diminishing part of firms' value, leading to the call from organizational stakeholders for the disclosure of non-financial information. Extant literature already demonstrated that stock prices are affected by the publication of non-financial information, indicating that this type of information is relevant for firm valuations (Berthelot et al., 2003; Fernandez et al., 2011; Matsumoto et al., 2011; Ellis et al., 2012). This result is not surprising since non-financial information often deals with intangible assets such as employees' knowledge, customer satisfaction or distribution channels which are considered as main value creators for firms (Zéghal and Maaloul, 2011). These assets account for well over half of the market capitalisation of public firms (Lev, 2004).

Despite the general awareness of the increasing importance of non-financial information to judge firm performance, extant literature struggles to define non-financial information consistently. One explanation for this inconsistency is that non-financial information represents or acts on totally different matters, like information with respect to firms' strategy, social responsibility, corporate governance, internal control or risk management (Said et al., 2003; Juntilla et al., 2005). A clear definition of non-financial information is hence lacking. To illustrate, non-financial information is defined as non-accounting information (Amir and Lev, 1996), as non-financial disclosures and metrics including index scores, ratios, counts and other information not presented in the financial statements (Upton, 2001), as information which cannot be directly derived from the financial statements of the company (Cohen et al., 2008), or as all quantitative and qualitative information on the strategy, management and its outcomes in terms of performance or effects, without a direct link with a financial registration system (NIVRA, 2010).

² Anecdotal evidence indicates that a firm's reputation and long-term sales can suffer because of poor corporate social responsibility performance. For example, Nike struggled for years and invested a great amount of financial resources and effort to regain its reputation after the 1997 child labor scandal (Dhaliwal et al., 2011).

Although these definitions provide some guidance, they do not lead to an unambiguous assignment. For instance, an earnings forecast issued by firm management – being a metric published outside financial statements – is considered non-financial information according to the Upton's (2001) definition, but following Amir en Lev (1996), this is considered as financial information as an earnings forecast is drawn from financial statements. Some studies equal non-financial information as corporate social responsibility (CSR) information (e.g., Dhaliwal et al., 2011), but this is incorrect since CSR combines financial as well as non-financial information. Other studies equal non-financial information with qualitative information (e.g., IFAC, 2013), but non-financial information could also include quantitative information, and hence this definition does not cover the full package.

Since a clear definition is non-existent, empirical studies focusing on non-financial information do not prefer to start from a definition of non-financial information, but describe this concept using a list of non-financial information elements. The selection of this list of items (or a disclosure index) is based on recommendations issued by accounting standard setters (e.g. FASB, 2001) or federations of accounting professionals (e.g. AICPA, 1994). Some studies develop a self-constructed disclosure index, selecting and grouping non-financial information elements, like for instance in Said et al. (2003), Juntilla et al. (2005), Hoff & Wood (2008), Coram et al. (2011) and Eccles et al. (2011).

Despite the potential confusion about the definition of non-financial information, firms respond to the stakeholders' call for the disclosure of non-financial information (Adams et al., 2011). Since ample regulatory requirements exist, firms report non-financial information on a voluntary basis. Unsurprisingly, the growing needs of non-financial information by organizational stakeholders over time lead to an increase in firms' voluntary reporting about non-financial information, both in volume and complexity (Orens and Lybaert, 2007; Cohen et al., 2011). Given that the concept of non-financial information is so broad, and covers a wide range of topics, such as corporate governance disclosures, environmental information, intellectual capital disclosure or strategy and management information, the amount and detail of non-financial information disclosed by firms strongly varies across firms. In addition, firms have the possibility to use various communication platforms to distribute non-financial information, such as annual reports, presentations to financial analysts or corporate websites.

Several economic theories provide explanations for differences in the amount and in the complexity of voluntary non-financial disclosures disseminated by firms (Khlifi and Bouri, 2010). Agency theory contends that firms are more likely to be transparent when agency conflicts between insiders and outsiders are larger since these conflicts lead to higher levels of information asymmetry. Empirical studies hence confirm that the voluntary disclosure of non-financial information has a positive association with the dispersion in firms' ownership structures (Marston and Polei, 2004; Prencipe, 2004) and with firm size (García-Meca et al., 2005). Signalling theory arguments that managers of firms with higher financial performance disclose more information voluntarily in order to promote a positive image (Mohd Ghazali and Weetman, 2006). Voluntary disclosure provides good signals about future firm

performance and avoids the risk that outsiders make wrong judgments based on non-disclosure of corporate information (Khelifi and Bouri, 2010). Empirical evidence confirms a positive association between firm performance and the reporting of non-financial information (Soliman, 2013). Legitimacy theory argues a higher voluntary publication of non-financial information, and especially related to CSR activities, to legitimize firms' activities and to respond to social pressures (Brown and Deegan, 1998). Empirical results document higher levels of environmental disclosure from firms with environmentally sensitive production activities (Aerts et al., 2008; Brammer and Pavelin, 2008). Finally, the proprietary cost theory contends that firms are reluctant to convey corporate non-financial information voluntarily when competitive costs are larger which are detrimental to firms.

The selective disclosures of non-financial information among firms arises the question whether such information should be regulated to a larger extent (Cohen et al., 2012). Despite the increased relevance of non-financial information in firm valuation, ample legislative initiatives are undertaken to require firms to report non-financial information. To illustrate, the current European Union (EU) legislation, only provides one article, i.e. article 46(1)(b) of the fourth Directive stating that: "To the extent necessary for an understanding of the company's development, performance or position, the analysis [in the annual review] shall include both financial and, where appropriate, non-financial key performance indicators relevant to the particular business, including information relating to environmental and employee matters". Based on this article, the legal framework at EU Member States' level appears to be quite fragmented. A few Member States have adopted mandatory reporting obligations, with different approaches varying from very detailed reporting requirements to more general provisions (EC, 2011b). Some Member States have introduced disclosure requirements that go beyond the Fourth Directive. Other Member States have made the disclosure of non-financial information mandatory. Still others have adopted a 'comply or explain' regime. The Member States also have the opportunity to exempt small and medium-sized firms from this requirement.

In 2011, the EU took the initiative to regulate the disclosure of social and environmental information so as to improve the comparability, the reliability and the usefulness of non-financial information (EC, 2011a). In April 2014, the European Commission adopted a directive on the disclosure of non-financial information by certain large firms. The commission in particular stimulates EU large firms to disclose information related to environmental aspects, social and employee-related topics, respect for human rights, anti-corruption and bribery issues, and diversity on board of directors in the annual reports (EC, 2014)

A potential advantage of endorsing non-financial information reporting requirements is to enhance the reliability of the information reported, if such information is also assured by professional accountants (Cohen et al., 2012). Reporting standards would bring consistency to reporting and permit comparability of information, at least within industries. In addition, a standard would provide a benchmark against which reports could be assessed and assurance could be provided. However, although the lack of a generally accepted framework to report non-financial information is an important barrier to widespread acceptance and use of non-

financial information by investors and other stakeholders, such information is hard to mandate and to standardize. Despite the reporting requirements, firms could limit their efforts by publishing vague and uninformative disclosures. In addition, a common framework is irrelevant since the importance of non-financial information depends on firm and industry characteristics. Finally, non-financial information requirements increase accompanied costs such as reporting or proprietary costs (Skinner, 2008; Stark, 2008). So, notwithstanding some advantages, non-financial information reporting requirements are quite limited, and even when requirements exist, these are not strictly enforced (Moser and Martin, 2012).

Instead of reporting requirements to stimulate firms to report non-financial information, various initiatives have recommended firms to disclose non-financial information voluntarily. Voluntary non-financial disclosure is considered to be more effective in improving the efficient functioning of capital markets rather than mandating non-financial disclosure (Bushee and Leuz, 2005; Ahmed and Schneible, 2007; Gomes et al., 2007; Skinner, 2008). During the past two decades, many ideas for improving business reporting have been issued and nearly all of them focus on releasing more non-financial information. Since 2008, at least 18 organizations have issued frameworks and guidance for reporting non-financial information (Eccles et al., 2011). Diverse authorities, such as the American Institute of Chartered Accountants (AICPA), the Financial Accounting Standards Board (FASB) or the Institute of Chartered Accountants in England and Wales (ICAEW) developed reporting models in which recommendations were made for the provision of non-financial indicators. Other recommendations concerning the voluntary reporting of non-financial information, are, for instance, the Global Reporting Initiative (GRI), the UN Global Compact, the OECD Guidelines for multinational firms, the ISO 26000 Guidelines and the UN 'Protect, Respect or the Remedy' Framework for Business and Human Rights (commonly referred to as 'Ruggie Framework'). In response to the call from organisational stakeholders to submit non-financial information, an increasing number of firms have been experimenting with more robust disclosure of non-financial information. The GRI Sustainability Reporting Guidelines, better known as G3, may be the most widely used framework to convey non-financial information (Eccles et al., 2011). G3 provides guidance on reporting on firms' economic, environmental, and social performance.

Although it seems that a certain flexibility may need to be maintained, flexibility is not optimal either. The proliferation of guidance raises another issue. This existence of different frameworks creates a perception about 'competing frameworks' and causes confusion in the marketplace about what framework a company should use.

To sum up, extant literature highlights the increasing importance and usefulness of non-financial information in the decision-making process of various stakeholders over time (Cohen et al., 2012). Non-financial information complements the financial information stakeholders have at their disposal. For instance, investors rely upon non-financial information to judge firms' future cash flows and value creation potential or to assess the board competencies (Cohen et al., 2011; Fernández et al., 2011). Customers and employees rely on corporate social performance in order to make purchase decisions (Schuler and Cording, 2006), to apply for a

job position (Turban and Greening, 1996) or to increase employee commitment (Dogl and Holtbrugge, 2014). Firms hence realize that they need to respond to the expectations and concerns of the various stakeholders with whom they interact, not only by adapting their activities, but also by reporting how they have performed. As such, they will respond to the question of stakeholders to publish all kinds of non-financial information on a voluntary basis.

Economic theory also contends that firms could profit from improved transparency about their non-financial value drivers in terms of higher performance and value. A greater transparency leads to an improved confidence, image and reputation by organizational stakeholders such as investors, employees and customers leading to better firm performance and firm value (Cormier et al., 2009; Orens et al., 2010; Dhaliwal et al., 2012; Athanasakou and Hussainey, 2014). The public reporting of non-financial information however attracts costs, such as reporting costs and proprietary costs. Hence, it is useful to firms to comprehend the extent to which non-financial information is used by their stakeholders. Since non-financial information is a broad concept, corporations and regulators are interested in the types of non-financial information stakeholders find useful in their decision-making process. In order to allow firms to judge whether the non-financial information conveyed is useful, the remainder of the literature review focuses on studies examining the use of corporate non-financial information by financial analysts. Understanding their preferences helps to improve the future information flow between firms and their stakeholders (Barker, 1998).

III. THE USE OF NON-FINANCIAL INFORMATION BY FINANCIAL ANALYSTS

This section of the literature review details prior findings on the extent to which financial analysts rely upon non-financial information in making firm assessments. Financial analysts are primary users of corporate information and are considered as the representatives of the investment community for whom the reporting of corporate information is primarily intended (Schipper, 1991; Chen et al., 2010).

Financial analysts add value to investors by disseminating information about the firm and by monitoring firm management (Livnat and Zhang, 2012). In serving both functions, financial analysts affect the investors' decision-making process (Hirst et al., 1995; Ackert et al., 1996; Holland and Johanson, 2003; Ivković and Jegadeesh, 2004; Covrig and Low, 2005; Fogarty and Rogers, 2005). Financial analysts alleviate the information asymmetry between investors and firms, and add additional knowledge to the information that is publicly disclosed by firms (Barber et al., 2001; Rammath et al., 2008), increasing the efficient functioning of capital markets (Barker, 1998; Holland and Johanson, 2003).

The following sections elaborate on studies investigating the analysts' use of non-financial information conveyed by firms. First, literature findings are reported which indirectly examined this use by relating corporate non-financial disclosures to properties of analysts'

earnings forecasts such as their accuracy and dispersion. Significant associations between the reporting of non-financial information and these properties indicate that financial analysts rely on non-financial information to predict future earnings, and hence consider such information relevant in their decision-making process. The next section reports empirical studies addressing the financial analysts' use of corporate non-financial information directly through questionnaires and the content analysis of analyst reports.

A. DISCLOSURE OF NON-FINANCIAL INFORMATION AND ITS INFLUENCE ON THE PROPERTIES OF ANALYSTS' EARNINGS FORECASTS

This section reports studies examining the association between the voluntary disclosure of non-financial information and the properties of analysts' earnings forecasts. Economic theory suggests a reduction in the uncertainty financial analysts perceive about firms' future earnings or cash flows with increased discretionary disclosure (Barry and Brown, 1985; Leuz and Verrecchia, 2000; Bushman and Smith, 2001). Consistent with the view that improved disclosure is inversely associated with the level of information asymmetry (Barry and Brown, 1985; Leuz and Verrecchia, 2000), greater disclosure allows financial analysts to increase their knowledge about the firms' activities (Hope et al., 2006). As far as the information conveyed by firms is relevant, financial analysts include this information into their valuation models to judge future firm performance (Cormier and Magnan, 2013). The more relevant information reported by firms is, the less uncertainty financial analysts experience in forecasting firms' future earnings and value (Bushman and Smith, 2001; Hope et al., 2006), resulting in more accurate and less dispersed earnings forecasts. In addition, firms improving their disclosure strategy attract a larger number of financial analysts increasing the competition between these analysts to serve investors' needs. This motivates financial analysts to increase their efforts in collecting corporate information, which further reduces the uncertainty about future firm performance of firms, leading to an improvement in the forecast accuracy and a decline in the forecast dispersion. So in general a positive (negative) association between the extent of non-financial information disclosure and the accuracy (dispersion) of the forecasted earnings is assumed. However, Barron et al. (2002) also pointed out that improvements in the level of public disclosures encourage analysts to collect private information which could lower the consensus across financial analysts, translating into an increase in the forecast dispersion. In addition, if financial analysts judge non-financial information differently, forecast dispersion could also increase as well. So from a theoretical point of view, the negative association between the extent of voluntary disclosure and forecast dispersion is unclear. To judge the expected associations, Table 1 summarizes empirical research findings related to the link between the voluntary disclosure of non-financial information and the properties of analysts' earnings forecasts.

Table 1. Disclosure of non-financial information and properties of analysts' earnings forecasts

Authors	Year	Sample	Type of non-financial information	Key results
Lang & Lundholm	1996	USA	<ul style="list-style-type: none"> - Financial and product-related information in annual reports - Financial information released in other publications (quarterly reports, press releases, presentations to analysts) - Investor relations information 	<ul style="list-style-type: none"> - Negative association between forecast dispersion and annual report information and investor relations information. - Positive association between forecast accuracy and the content of other publications and investor relations information.
Barron, Kile & O'Keefe	1999	USA	MD&A quality (general financial and non-financial information) in annual reports	<ul style="list-style-type: none"> - MD&A ratings are positively associated with forecast accuracy and negatively associated with forecast dispersion
Vanstraelen, Zarzeski, & Robb	2003	Continental Europe (Belgium, Germany, the Netherlands)	<ul style="list-style-type: none"> - Forward-looking non-financial information (environment, strategy, management, trends) in annual reports - Historical non-financial information (business structure, production, customers) in annual reports 	<ul style="list-style-type: none"> - Negative (positive) association between forward-looking non-financial information and forecast dispersion (accuracy). - Historical non-financial information is unrelated to forecast dispersion and forecast accuracy.
Aerts, Cormier & Magnan	2007	North-America (USA and Canada) Continental Europe (Belgium, France, Germany, the Netherlands)	<p>Web-based performance disclosure index including indicators related to:</p> <ul style="list-style-type: none"> - Financial performance - Corporate governance - Customer value - Human/intellectual capital - Production efficiency, innovation & R&D - Social responsibility 	<ul style="list-style-type: none"> - Negative association between performance disclosure index and forecast dispersion, but only for firms from North America. - Insignificant association between performance disclosure index and forecast dispersion in Continental Europe. - Negative association between performance disclosure index and forecast dispersion is lower in firms with high analyst following.

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Authors	Year	Sample	Type of non-financial information	Key results
Aerts, Cormier & Magnan	2008	North-America (USA and Canada) Continental Europe (Belgium, France, Germany, the Netherlands)	Environmental reporting in annual reports and corporate websites	<ul style="list-style-type: none"> - Negative association between environmental disclosure and forecast dispersion in North America and Continental Europe. - Negative association is attenuated by increased analyst following. - Negative association in North America is only observed for print-based environmental disclosure and not web-based disclosure. - Positive association between environmental disclosure and forecast dispersion in firms from Continental Europe operating in environmentally more sensitive industries.
Bozzolan, Trombetta & Beretta	2009	Continental Europe (Italy, Germany, France and Switzerland)	Forward-looking information in annual reports	<ul style="list-style-type: none"> - Verifiable (quantified) disclosure improves forecast accuracy and forecast dispersion more in comparison to unverifiable disclosure.
Nichols & Wieland	2009	USA	Product-related information (product announcements such as new products, new developments, product discontinuation or product recalls) and business expansion information in press releases	<ul style="list-style-type: none"> - Negative (positive) association between product-related disclosure and business expansion information and forecast dispersion (accuracy).
Luo, Homburg & Wieseke	2010	USA	Customer satisfaction	<ul style="list-style-type: none"> - Negative association between customer satisfaction and forecast dispersion. - Negative association is stronger with more competition and larger market uncertainty.
Simpson	2010	USA	Customer-related performance metrics (i.e. number of subscribers, market share, customer acquisition cost, average revenue per user, churn rate, and minutes of use per subscriber)	<ul style="list-style-type: none"> - Positive association between customer acquisition cost, average revenue per user and number of subscribers and analysts' earnings forecasts. - Other metrics are unrelated to analysts' forecast accuracy.

Authors	Year	Sample	Type of non-financial information	Key results
Yu	2010	Global	Corporate governance information in annual reports	<ul style="list-style-type: none"> - The customer-related performance metrics are negatively related to analysts' forecast dispersion - Negative (positive) association between corporate governance disclosure and forecast dispersion (accuracy)
Dhaliwal, Radhakrishnan, Tsang & Yang	2011	USA	Issuance of a stand-alone corporate social responsibility (CSR) report	<ul style="list-style-type: none"> - Negative (positive) association between the issuance of a CSR report and forecast dispersion (accuracy)
Hsu & Chang	2011	Taiwan (high tech firms)	<ul style="list-style-type: none"> - Intellectual capital information in annual reports - Non-intellectual capital disclosure (general information, social responsibility, management discussion and analysis and historical results) inserted in annual reports 	<ul style="list-style-type: none"> - Negative (positive) association between intellectual capital disclosure and forecast dispersion (accuracy) - Insignificant association between non-intellectual capital disclosure and properties of analysts' earnings forecasts - Positive association between issuance of a CSR report and forecast accuracy - Association between CSR report and forecast accuracy is stronger in countries with stakeholder orientation (i.e. countries where CSR performance affects firm performance) - Association between CSR report and forecast accuracy is stronger in countries with more opaque financial disclosure
Dhaliwal, Radhakrishnan, Tsang & Yang	2012	Global	Issuance of a stand-alone corporate social responsibility (CSR) report	<ul style="list-style-type: none"> - Positive association between customer satisfaction and forecast accuracy.
Ngobo, Casta & Ramond	2012	USA	Customer satisfaction	<ul style="list-style-type: none"> - Positive association between customer satisfaction and forecast accuracy.
Cormier & Magnan	2013	Canada and USA	Environmental information in annual and sustainability reports	<ul style="list-style-type: none"> - Positive association with the consensus of earnings forecasts (less forecast dispersion). - Consensus is reduced when information is disclosed by firms with poor environmental performance.

The findings revealed in Table 1 tend to confirm the proposition that forecast accuracy improves and forecast dispersion lowers with expanded non-financial information disclosures. In a US setting, Lang and Lundholm (1996) observe that Financial Analysts Federation (FAF) disclosure ratings have a negative association with the errors and the dispersion in the earnings forecasts. Barron et al. (1999) show that the analysts' forecast dispersion is decreasing and analysts' forecast accuracy is increasing with better disclosures in the Management Discussion and Analysis (MD&A).

However, institutional differences affect the association between the extent of non-financial information reported and the financial analysts' earnings forecast dispersion. Whilst a negative association is observed between the disclosure of non-financial information on corporate websites and the dispersion in the analysts' earnings forecasts in North America, an insignificant association is shown in Continental Europe (Aerts et al., 2007). The latter result confirms the assumption that (1) common law institutional regimes are more focused on full transparency to inform investors compared to code law countries which are more characterized to formal compliance with existing requirements and hence low levels of disclosure (Basu et al., 1998) and (2) the analysts' labour market in Continental Europe provides fewer incentives to predict earnings forecasts accurately compared to North America (Clement et al., 2003; Bolliger, 2004). In addition, the association between web-based non-financial disclosure and the level of forecast dispersion is attenuated with analyst following, indicating that analysts following acts as a substitute for corporate disclosures (Hope, 2003). In contrast with previous results, a negative association between financial analysts' forecast dispersion and the extent of non-financial disclosure is observed for a sample of Belgian firms (Orens and Lybaert, 2010a).

Since non-financial information is a broad concept, we focus in this literature review on the usefulness of some specific categories of non-financial information to value firms and to forecast earnings. In particular, we focus on following types of non-financial information: strategic and product-related information, forward-looking information, corporate governance information, intellectual capital information, and social and environmental information. These non-financial information categories are often researched in the voluntary disclosure literature. Regarding the strategy-related and product-related information, Nichols and Wieland (2009) find for a sample of US firms that the reporting of product-related information and business expansion information in press releases allow financial analysts to make more accurate and less dispersed earnings forecasts. These disclosures ameliorate analysts' impressions about future sales and earnings. In a code law country setting, disclosure of general business information (for instance about firms' products or markets) tends to be unrelated to the properties of analysts' earnings forecasts (Orens and Lybaert, 2010a).

Empirical evidence further reveals that greater forward-looking disclosure leads to less dispersed and more accurate earnings estimates for a sample of Continental European firms (Vanstraelen et al., 2003; Bozzolan et al., 2009; Orens and Lybaert, 2010a). Additionally, verifiable

(or quantifiable) forward-looking disclosure shows a stronger association with the accuracy and dispersion of the analysts' earnings forecasts compared to unverifiable (or descriptive) information. The results tend to indicate that quantifiable forward-looking disclosures, which could be compared to actual results, are more relevant to financial analysts (Bozzolan et al., 2009).

Yu (2010) observes that financial analysts predict more accurate and less dispersed earnings forecasts when firms disclose more comprehensive corporate governance disclosures (for instance about their board composition, ownership structures or managerial characteristics). Analysts tend to rely upon corporate governance information in estimating future earnings. Corporate governance disclosures allow analysts to assess the firms' board policy and the firms' potential risks and future prospects (Durnev and Kim, 2005). More knowledge about corporate governance reduces analysts' uncertainty about the firms' future prospects. Yu (2010) comments that the research results are dominated by US firms driving the research results, but a negative association between corporate governance disclosures and forecast dispersion is also observed for a sample of Continental European firms (Orens and Lybaert, 2010a).

Focusing on intellectual capital information, Hsu and Chang (2011) observe a lower diversity of beliefs across financial analysts when firms from high tech industries submit more intellectual capital information. In addition, financial analysts forecast more accurately when firms publish more intellectual capital disclosures. Aerts et al. (2007) document a negative relationship between the disclosure of intellectual capital information and the analysts' forecast dispersion, but only for firms from North America and not for Continental European firms. However, this result is inconsistent with Orens and Lybaert (2010a) documenting that the disclosure of intellectual capital information is associated with less dispersed analysts' forecasts for a sample of Belgian firms.

Luo et al. (2010) find that firms with better customer satisfaction scores, provided by the American Customer Satisfaction Index (ACSI), exhibit more consensus across the earnings forecasts prepared by financial analysts. Positive changes in customer satisfaction are expected to increase future firm performance – since future cash flows are more vulnerable – leading to improved decision making by financial analysts. In addition, this association is stronger in more competitive industries since high levels of customer satisfaction in these industries enhance sales levels relative to their competitors. In less competitive industries, it is more likely that customer relationships retain, despite low levels of customer satisfaction. Hence, customer satisfaction data is more important in industries with high product market competition. Ngobo et al. (2012) confirm findings in Luo et al. (2010), showing a positive association between customer satisfaction and forecast accuracy.

To understand the influence of corporate social responsibility (CSR) information on the predictions of financial analysts, Dhaliwal et al. (2012) investigate the impact of the issuance of a stand-alone CSR report on the accuracy of the earnings forecasts. Using a sample of firms from 31 countries from all continents, they observe that financial analysts predict earnings more accurately when firms publish a CSR report. Since CSR performance impacts future results, information related to CSR activities is useful, leading to more informed earnings estimates.

The results confirm earlier findings from Dhaliwal et al. (2011) observing a negative association between CSR disclosure on the one hand and the extent of forecast errors and forecast dispersion on the other hand for a sample of US firms. In addition, Dhaliwal et al. (2012) observe a stronger association between the disclosure of a separate CSR report and the accuracy of the analysts' earnings forecasts in countries that are more stakeholder-oriented compared to countries that are more shareholder-oriented. In a stakeholder-oriented environment, stakeholders have a greater influence on the activities of firms in comparison to shareholder-oriented countries (Chen, 2009). In addition, Dhaliwal et al. (2012) note that the disclosure of CSR is complementary to financial disclosure since the relationship between the disclosure of a CSR report and the forecast accuracy is stronger in countries with a higher level of financial opacity. CSR information hence mitigates the negative impact of financial opacity on forecast accuracy.

Aerts et al. (2008) further find a higher consensus across financial analysts' earnings forecasts if firms from both Continental Europe and North America disclose more environmental information, but this association is attenuated when analyst following is larger. Comparable results are observed in Cormier and Magnan (2013) finding that the consensus among financial analysts is larger when firms convey more environmental disclosures. These results are obtained in a North American setting.

To sum up, extensive non-financial information reporting enriches the information environment, improves the predictability of future earnings and reduces asymmetry across analysts in their beliefs about future prospects. An increase in the voluntary disclosure of non-financial information leads to a decline in the earnings forecast dispersion and a decline in the earnings forecast errors. Hence, firm management possibly could profit from a lower cost of capital since the reduction in the forecast dispersion results in lower uncertainty levels across investors (Khurana and Raman, 2004; Gietzman and Ireland, 2005). Extant literature also shows that the disclosure of non-financial information has a stronger impact on the consensus of the earnings forecasts than on the forecast accuracy of the earnings estimates. This finding is due to the reduction in the private information flow between firms and a selected number of financial analysts, resulting in more consensus across analysts (Barron et al., 1999). Potentially, the diverse interpretation of non-financial information by financial analysts does not immediately infer more accurate earnings estimates.

B. USE OF CORPORATE NON-FINANCIAL INFORMATION BY FINANCIAL ANALYSTS: SURVEY AND CONTENT ANALYSIS EVIDENCE

To observe financial analysts' use of non-financial information directly, some studies content analyse the reports issued by financial analysts. Studies making use of this approach assume that the information elements discussed in these reports reflect the most important ones financial analysts use in assessing firms (Rogers and Grant, 1997; Bradshaw, 2004;

Abhayawansa, 2011). An analyst report³ should include all the necessary information a financial analyst uses to argue its stock recommendation (García-Meca, 2005). Based on a detailed analysis and interpretation of the collected corporate information, financial analysts issue an analyst report including a description of a firm's profile, an opinion on the current and future firm performance, an estimation of the firm's future earnings and cash flows and a stock recommendation (Asquith et al., 2005).

The content analysis approach might create some bias since no conclusions can be drawn as to whether financial analysts include all information they use (or consider useful) in their reports (Rogers and Grant, 1997; Abhayawansa, 2011). To validate the content analysis results, the survey approach is used. One drawback of this research method might be that the research findings do not correspond with financial analysts' actual behaviour. However, empirical results document a strong correlation in the use of corporate non-financial information collected based on a survey and based on a content analysis of reports prepared by the survey respondents. Non-financial information elements being used more frequently according to the survey, are more frequently inserted in the analyst reports (Orens and Lybaert, 2007). Table 2 synthesizes prior empirical results about the use of corporate non-financial information using either the content analysis approach or the survey approach.

In general, results tend to indicate that financial analysts increasingly use corporate non-financial information over time. Studies conducted in the nineties reveal a very limited use of non-financial information by financial analysts. In that period, analyst reports only include product-related information, market-related information and forward-looking information about the opportunities and risks (Previts et al., 1994; Rogers and Grant, 1997; Breton and Taffler, 2001). More recent studies document an evolution in the use of non-financial information, and observe that a substantial part of an analyst report is attributed to a discussion of non-financial information (García-Meca, 2005; Flöstrand, 2006; García-Meca and Martínez, 2007; Orens and Lybaert, 2007; Abhayawansa and Guthrie, 2012).

Considering the different types of non-financial information, analyst reports often report product-related information (García-Meca, 2005; Orens and Lybaert, 2007; Nielsen, 2008). A strong variability exists in the extent to which analyst reports disseminate detailed information about firms' strategy (Flöstrand and Ström, 2006; Orens and Lybaert, 2007). Although survey evidence confirms the importance of strategy-related information for financial analysts to value a firm, proprietary costs hamper firms to report such information publicly, which in turn limits the dissemination of strategy-related information in analyst reports (Dempsey et al., 1997; Breton and Taffler, 2001; Sakakibara et al., 2010).

³ In general, two types of analyst reports exist: company reports and result reports (García-Meca and Martínez, 2007). Company reports include much more corporate information compared to result reports since financial analysts in these reports present a fundamental analysis of firms providing a detailed picture of firms' activities and performance. Financial analysts however do not publish such reports on a regular basis. Result reports are published more frequently during the year and include information related to a particular event, for instance an earnings announcement, the launch of a new product or an acquisition.

Table 2. Use of non-financial information by financial analysts using direct research methods

Authors	Year	Sample	Method	Key results
Previts, Bricker, Robinson & Young	1994	USA	Content analysis (479 analyst reports)	<ul style="list-style-type: none"> - Few attention to non-financial information, only focus on forward-looking information, competitive position, strategy and management - Large use of background information (products, markets, stakeholders) and forward-looking information - Less attention to corporate governance information and managers' analysis of firm performance
Rogers & Grant	1997	USA	Content analysis (187 analyst reports)	<ul style="list-style-type: none"> - Frequent use of information relating to the competitive environment, the quality of firm management and product innovation - Information related to human capital, social responsibility and customer satisfaction is hardly used.
Dempsey et al.	1997	USA	Survey (240 respondents)	<ul style="list-style-type: none"> - Frequent use of product and market information - Strategy and management most important information, but to a lower extent reported in analyst reports
Breton & Tafler	2001	UK	Content analysis (105 analyst reports)	<ul style="list-style-type: none"> - Analysts rely most on strategy and objectives - Analysts frequently use product-related information and customer value information - Analysts rarely use human capital information
García-Meca	2005	Spain	Content analysis (217 analyst reports)	<ul style="list-style-type: none"> - Customer value information most employed - Few attention to human capital and internal structure (innovation, R&D) information
Flöstrand	2006	USA	Content analysis (250 analyst reports)	<ul style="list-style-type: none"> - Forward-looking information and background information most used - Strategy information is hardly included
Flöstrand & Ström	2006	USA	Content analysis (200 analyst reports)	<ul style="list-style-type: none"> - Strategy and forward-looking information is often used - Innovation, R&D and human capital receive less attention
García-Meca & Martínez	2007	Spain	Content analysis (217 analyst reports)	

Authors	Year	Sample	Method	Key results
Orens & Lybaert	2007	Belgium	Content analysis (177 analyst reports) and survey (31 responses)	<ul style="list-style-type: none"> - Forward-looking information and background information (strategy and product information) often used - Management's analysis of firm performance frequently employed - Corporate governance information and intellectual capital information hardly used
Nielsen	2008	Denmark	Content analysis (12 analyst reports)	<ul style="list-style-type: none"> - Large use of general background information (products, markets, industries) - Management's analysis of firm performance and forward-looking information frequently used - Few attention addressed to intellectual capital information, corporate governance and social responsibility information
Abhayawansa & Guthrie	2012	Australia	Content analysis (62 analyst reports)	<ul style="list-style-type: none"> - External and human capital employed frequently - Internal capital hardly disclosed - Use of intellectual capital information conditioned by stock recommendation (e.g., unfavourable stock recommendations include more external capital information)
Pinho, Madaleno & Santos	2013	Portugal	Content analysis (73 analyst reports)	<ul style="list-style-type: none"> - Analysts rely heavily on management's discussion of firm performance and product-related information - Intellectual capital information, corporate governance information, and information about risks and opportunities are rarely conveyed in analyst reports
Abhayawansa & Guthrie	2014	Australia	Content analysis (64 analyst reports)	<ul style="list-style-type: none"> - Information on relational capital and company management commonly used - Information on human capital and structural capital used least frequently

The empirical studies further notice a strong reliance on forward-looking information in analyst reports (Orens and Lybaert, 2007; García-Meca and Martínez, 2007; Nielsen, 2008). Forward-looking information is a guide to assess the long-term performance of firms. Questionnaire results confirm the importance of forward-looking information in firm assessments (Orens and Lybaert, 2007). Despite the importance of corporate governance on firm performance, analysts do not mention such information in their analyst reports (Orens and Lybaert, 2007; Nielsen, 2008). Since such information is often disclosed by public firms, financial analysts could be reluctant to communicate such information through the analyst reports. Despite the limited occurrence of corporate governance information in the analyst reports, survey evidence tends to confirm that financial analysts rely upon information about top management in assessing firms (Dempsey et al., 1997; Orens and Lybaert, 2007).

Focusing on intellectual capital information, Nielsen (2008) observes an infrequent use of this information in analyst reports. However, intellectual capital could be broken down into three groups: human capital (for instance, employee satisfaction, training), internal (or structural) capital (for instance innovation or R&D) and external (or relational) capital (for instance customer value information). In general, extant literature shows an infrequent use of human capital and internal capital information (García-Meca, 2005; Flöstrand and Ström, 2006; Flöstrand, 2006; García-Meca and Martínez, 2007; Orens and Lybaert, 2007; Abhayawansa and Guthrie, 2014). Abhayawansa and Guthrie (2012) is the only study documenting a frequent use of human capital information in the reports analysed. When intellectual capital information is disclosed, most attention is addressed to external capital information (Breton and Taffler, 2001; García-Meca, 2005; Flöstrand and Ström, 2006; Flöstrand, 2006; Orens and Lybaert, 2007; Abhayawansa and Guthrie, 2012).

Although prior studies confirm the usefulness of intellectual capital information in assessing firm value (for instance, Barth and Clinch, 1998; Kallapur and Kwan, 2004), financial analysts have their reservations about the validity and reliability of intellectual capital information, which makes it difficult to gauge the impact of this information on future cash flows (Barker, 1998; Johanson, 2003). In addition, due to proprietary costs, firms are less likely to disclose intellectual capital information, such as customer satisfaction or product quality, publicly (García-Meca, 2005), increasing collection costs for financial analysts (Dempsey et al., 1997, Orens and Lybaert 2007). In order to gain insights into the impact of intellectual capital information on firm value, financial analysts have to collect this information privately. Finally, lack of knowledge and experience in assessing intellectual capital information and its link with firm value, might also explain why intellectual capital information is hardly employed (Holland, 2003).

Corporate social responsibility information is hardly included in an analyst report (Nielsen, 2008). Based on a survey, Hunt and Grinnel (2003) confirm these findings with respect to environmental information. A potential explanation for the limited use of this information relates to the low credibility of this information (Hunt and Grinnel, 2003).

Conducting interviews, Campbell and Slack (2011) observe that financial analysts ignore environmental information when evaluating firms.

To summarize, financial analysts often use product-related information and forward-looking information (e.g. about future products or future opportunities and risks). Information about the strategy and objectives of firms is largely considered as well by financial analysts in their firm evaluation, but proprietary costs reduce the availability of this information for financial analysts to insert the information in their analyst reports. Previous literature further shows a low attention addressed to corporate governance information, intellectual capital information and corporate responsibility information in analyst reports. Potentially, financial analysts have a short term orientation and neglect information that consider long-term issues, such as environmental information, to judge firms (Campbell and Slack, 2011; Arvidsson, 2012).

The increased dissemination of non-financial information in analyst reports is possibly due to the regulatory changes regarding the working environment of financial analysts. Following the scandals in the 1990s, some rules were endorsed to restrict contact between financial analysts and bankers and to strengthen the “Chinese wall” separating equity research and investment banking (Brown et al., 2014). The avoidance of conflicts of interests allows financial analysts to be more critical towards firms, potentially leading to more developed equity reports. In addition, professional organisations, such as the Certified Financial Analysts (CFA) Institute, push financial analysts to issue objective reports and recommendations that are supported by a thorough research and investigation. Following the various guidelines and regulations, financial analysts are under more pressure to disseminate objective analyst reports. As the relevance of financial information in equity valuation reduces, in favour of non-financial information, financial analysts might be more keen to report non-financial information in their analyst reports.

To understand the context within which financial analysts make decisions about the levels of non-financial information used, several studies address potential clarifications for differences in the financial analysts’ use of corporate non-financial information. Flöstrand (2006) shows that analyst reports issued for firms in the pharmaceutical industry and the telecommunications industry contain more intellectual capital information compared to analyst reports on energy firms. Industry membership hence affects the relative importance of non-financial information. García-Meca and Martínez (2007) find that the amount of non-financial information in the analyst reports is increasing with firms’ profitability and growth opportunities. García-Meca and Martínez (2007) conclude that financial analysts release more intellectual capital information in their reports when a sell recommendation is at stake compared to a buy recommendation. Abhayawansa and Guthrie (2012) build further on these insights relating the theory of impression management to investigate how type and level of detail of intellectual capital information vary by recommendation type. Analysts employ intellectual capital information in their reports to manage perceptions. So, analysts communicate more external capital information in their reports with an unfavourable stock recommendation. Favourable recommendations include more future oriented intellectual

capital information compared to unfavourable recommendations containing more historical information (Abhayawansa and Guthrie, 2012). Orens and Lybaert (2010b) demonstrate that financial analysts use more non-financial information when doubts arise about the reliability of the earnings figures. In addition, less experienced financial analysts and analysts covering fewer firms rely upon a larger amount of corporate non-financial information.

IV. CONCLUSION AND SUGGESTIONS FOR FURTHER RESEARCH

The current literature review focuses on the use of corporate non-financial information by financial analysts. Non-financial information is increasingly important due to the transition towards a knowledge economy, the globalization or the intensified competition. Various corporate stakeholders call for the voluntary disclosure of non-financial information since the financial information included in financial statements is insufficient to judge future firm performance and firm value accurately. Non-financial information should hence complement the financial information that is reported on a mandatory basis.

To understand the relevance of corporate non-financial information in the decision-making process of financial analysts, some studies examine the influence of the voluntary disclosure of non-financial information on the properties of analysts' earnings forecasts, such as the accuracy and the dispersion of these forecasts. Another approach to discover the reliance of financial analysts on non-financial information is to directly analyse the output of financial analysts, i.e. the analyst reports, or to submit questionnaires to financial analysts. Both approaches suggest the usefulness of non-financial information to financial analysts in analysing the current and future performance of firms. Findings reveal a decline in the forecast dispersion and an increase in the forecast accuracy with improved non-financial disclosures. However, this association tends to be more pronounced in a common law setting.

Considering the various types of non-financial information, financial analysts mainly use forward-looking information and strategic and product-related information. Financial analysts to a minor extent rely upon intellectual capital information, corporate governance information and social and environmental information. Hence, it seems that analysts fail to include or consider these information elements in their evaluations although these indicators are considered important in firm valuation.

The findings provide important implications for firm management making decisions about the disclosure policy to be followed. The results tend to indicate that the relevance of corporate non-financial information differs across types of non-financial information. Disseminating useful information to capital markets could be favourable to firms in terms of lower information asymmetry, lower cost of capital, higher financial performance and higher firm value.

Analysing prior studies exhibits the finding that non-financial information remains descriptive, which hampers the use of this information by capital market participants. Quantification of non-financial information is recommended since such information

increases the credibility of the information provided as it improves the ex post verifiability of the information disclosed (Hutton et al., 2003). Another option to facilitate the use of corporate non-financial information is that firms should take efforts to better clarify the relationship between non-financial information and firm value (Dickins and Higgs, 2005).

Reflecting on topics for further research, we suggest to concentrate more on the association between properties of analysts' earnings forecasts and non-financial disclosure in other communication venues such as conference calls, press releases, management forecasts or webcasts. Prior studies mainly focus on the disclosure of non-financial information in annual reports to obtain insights into the extent of non-financial information reporting. Despite previous results, it is still a black box how non-financial information is considered as input into forecasts and stock recommendations by financial analysts. Future research could for instance adopt a protocol analysis allowing to capture detailed insights into how analysts incorporate non-financial information in their forecasts and which tools are used to value the implications of non-financial information. In addition, there is ample evidence about the information sources upon which financial analysts rely to gather non-financial information. It is important to gain more insight into the extent to which financial analysts collect non-financial information privately or publicly. Such research maps the potential information asymmetry between investors and financial analysts.

Most studies use a pre-defined list of non-financial information items and identify the extent to which each information element is used by financial analysts. However, the construction of this list might be constrained by the researchers' judgement to define and categorize non-financial information (Abhayawansa, 2011). An alternative approach to content analyze analyst reports is to consider all non-financial information elements included in the analyst reports, and group these elements into various non-financial information categories. In addition, it is still unclear for which purposes each financial analyst relies on a non-financial information element. For instance, financial analysts might include a non-financial information item in their reports either with the intention to provide some background information about the firm to investors or with the intention to use it as input for firm valuation (Abhayawansa and Guthrie, 2012).

Finally, the question arises whether additional information requirements should be set. Recently the European Commission launched a directive to require firms to disclose social and environmental-related information, but still many non-financial information elements such as forward-looking information or product-related information have to be reported voluntarily. However, regulators face difficulties in setting non-financial information requirements as the importance of non-financial information is depending on firm and industry characteristics (Skinner, 2008; Stark, 2008). A common framework including non-financial information would be irrelevant for all firms (Stark, 2008). The literature review also provides evidence that the emphasis placed on non-financial information by financial analysts is conditioned by the nature of the covered firms. In other words, firm-specific factors drive the decision of financial analysts to use non-financial information. This finding allows us to suggest that setting information requirements for all firms is ineffective.

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