Does the level of assurance statement on environmental disclosure affect investor assessment?

An experimental study

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Abstract

Purpose – The purpose of this study is to examine whether different levels of assurance statements of environmental disclosures affect investment choices in the French context where environmental assurance was voluntary until 2012 and became regulated and mandatory since then.

Design/methodology/approach – The authors conducted an experiment during the voluntary context – which represents the vast majority of countries – on a sample of 108 financial analysts.

Findings – Environmental disclosure has a positive impact on investment recommendations. More surprisingly, financial analysts are less likely to give recommendations in favor of a company that displays environmental disclosure with low-level assurance than for a company with no assurance statement at all.

Research limitations/implications – When assurance is voluntary and there are at least two levels, this study results suggest that firms should avoid selecting the lowest level of assurance because it negatively affects investor decisions. From this perspective, firms should devote sufficient effort and resources to obtain at least Level 2 environmental disclosure assurance.

Practical implications – Given the recommendations made by financial analysts, the authors could expect that firms may prefer to engage in a higher level of assurance or to provide no assurance rather than minimize their financial efforts and resources to select a lower level of voluntary assurance regarding environmental disclosure.

Social implications – This study has implications for the voluntary assurance practices of environmental disclosure and can provide support to regulators to promote higher standards in environmental assurance. It documents the relevance to increase the level of requested assurance for environmental disclosure.

Originality/value – To the best of the authors’ knowledge, very few studies have examined the additional effect of assurance on environmental disclosure in investors’ decisions. The experiment is conducted with financial analysts in the context of voluntary assurance.

Keywords Environmental disclosure, Assurance statement

Paper type Research paper

1. Introduction

In April 2014, the European Commission adopted Directive 2014/95/EU, which focused on non-financial reporting, including environmental disclosures (ED), and was targeted at amending the existing Directive 2013/34/UE. The new directive states that providing non-financial information should contribute to monitoring firms in accordance with stakeholder requirements. To achieve
this overall objective of welfare within the European Union (EU), some type of assurance of such non-financial information by an independent assurance provider is encouraged[1].

Most publicly traded companies in the EU and around the world have been providing ED for many years. Among disclosing companies, an increasing number exhibit some type of assurance related to such non-financial reporting (KPMG, 2014). Until recently, providing assurance for corporate social responsibility (CSR) disclosure was mandatory in only a few countries (Ackers and Eccles, 2015; Gillet-Monjarret and Rivière-Giordano, 2017; KPMG, 2016). Some countries have only recently initiated the standard setting process or have begun to propose guidelines but not regulations. For example, the Japanese Association of Assurance Organizations for sustainability has issued practical guidelines for the assurance of sustainability information in 2007. The same year, the Royal Dutch Institute for Registered Accountants (Royal NIVRA, 2007) issued a standard concerning the assurance engagements relating to sustainability reports. The Swedish recommendation regarding the independent assurance of separate voluntary sustainability reports is also based on this Dutch assurance standard and was issued by the Swedish Institute for the Accountancy Profession (updated version in December 2008).

In 2008, the Institute of Chartered Accountants of Spain (Instituto de Censores Jurados de Cuentas de Espana (ICJCE)), developed the ICJCE Action Guide which provides details about the procedures that an auditor should apply for verifying sustainability reports. In Italy, the current version of a guideline named Research Document n° 190 was issued in 2015 by the Italian Association of Auditors (Assirevi) and represents a model for limited assurance report on social or sustainability reporting for use by independent auditors. More recently, Australia and New Zealand have proposed joint general guidelines on the verification, validation and assurance processes of environmental and sustainability reports (Australian/New Zealand Standards, 2013). Finally, two countries, China (Chinese Ministry of Finance, 2006) and Brazil (Conselho Federal de Contabilidade, 2012), have approved a global standard on assurance engagement other than the audit and review of financial information. However, in the past decade, most countries have not been strictly regulating ED assurance.

In this specific context of voluntary assurance for ED, the level of such assurance depends on the companies. This condition means that management has the choice of mandating assurance providers for a certain type of assurance by considering the costs it agrees to incur. This level of assurance is expressed in an assurance statement, also referred as a verification statement or assurance report. This statement documents the findings of the assurance provider (Perego and Kolk, 2012) and includes a clear expression of the assurance conclusion formed based on the evidence obtained about the subject matter information (ISAE3000, 2013).

Moreover, the level of assurance statement also depends most of all on the maturity of environmental reporting. A moderated statement is provided when less than 50 per cent of the firm perimeter can be verified and when the data reliability has been assessed at 80 per cent. A reasonable statement is provided when more than 50 per cent of the firm perimeter can be verified and when assurance providers can assess the data reliability at 95 per cent (Grant Thornton, 2005). Consequently, choices made by companies on a specific level of environmental assurance[2] (EA) create a new informational context for investors. Indeed, compared to the timeline of financial reporting and its assurance, CSR reporting and its assurance are “still in its infancy” (Tschopp and Huefner, 2015, p. 574). Accordingly, the perception of prevailing economic agents such as investors concerning the level of EA needs to be explored for further guidance.

The case of France is unique, as it illustrates the evolution of assurance from a voluntary to a regulated status. This research aims at studying the France case in a voluntary context, that is before 2012, when companies had the choice to request EA or not. Assurance statements were available in three levels – namely, the moderate and reasonable levels mentioned previously, as well as a moderate attestation focusing on the reporting process only. This additional level was
understood as a first stage level in that the opinion could not be given on the reliability of the data provided, but only on the process of collecting this information. After 2012, companies falling within the scope of the French Grenelle 2 law[3] were required to obtain EA. As such, this research presents a study in a historical context aimed at analyzing the impact of EA on financial investment decisions before 2012 that is in the context of voluntary assurance and divided into three levels. It thus illustrates the usefulness of EA for investors in a voluntary context representative of a large majority of countries.

While prior research documents that environmental reporting has an impact on investors’ decisions (Deegan, 2004; De Villiers and Van Staden, 2010; Orens and Lybaert, 2007; Solomon and Solomon, 2006; Thompson and Cowton, 2004; Van der Laan Smith et al., 2010), investigating the specific impact of EA in this context remains underexplored. Hence, the objective of this paper is to examine the impact of the presence of and the level of assurance on investor assessment[4]. We conducted an experimental study using an online survey and collected 108 responses from the French Association of Financial Analysts in the context of voluntary assurance for ED. The experimental design aims to address two questions:

Q1. We examine whether the presence of an EA statement has a positive impact on investment decisions.

Q2. We investigate the specific impact that a given level of assurance may provide.

Our empirical findings first suggest that the presence of an EA statement alone does not influence financial analysts’ assessments. However, EA does discriminate for analysts when the level of assurance is low. Indeed, financial analysts show a preference for ED with no assurance statements rather than a low level of assurance. Overall, our results indicate that no assurance is better than limited assurance.

This study contributes to the field of social and environmental accounting and assurance in two ways. First, we provide an assessment of the different levels of assurance so that managers of disclosing firms can choose the amount of financial resources to allocate to EA when it is on a voluntary basis. Second, this study facilitates a refocus on the alignment of French practices on the ISAE 3000 international recommendations, but most importantly the elimination of Level 1 assurance, which jeopardized financial investments. The French case analysis allows us to provide further insights into how the EU should regulate EA. Our results suggest that assurance requirements should be upgraded (in the same manner as accounting disclosures) to be most effective – but such upgrade would require that clear and proper standards on CSR issues (rather than the general ISAE3000) are developed to reduce or eliminate any leeway, which is reflected in the current CSR assurance practices and statements.

The remainder of the paper is structured as follows. Section 2 explores the regulatory context of this research and refers to the prior literature in the domain to justify our research questions. Section 3 presents the research method, which consists of an experiment. Section 4 presents empirical findings. Finally, Section 5 proposes avenues of discussion and conclusions.

2. Background and literature review

2.1 Regulatory context of EA

Several accounting firms and institutional bodies have described firms’ practices concerning EA. The number of top-40 listed companies in France (CAC 40) displaying EA has dramatically increased from 31 per cent in 2003 to 87.5 per cent in 2010 (Deloitte, 2011; KPMG, 2009). During the same period, listed companies outside the CAC 40 had not
committed themselves to EA in large numbers (from 3 per cent in 2003 to less than 25 per cent in 2010). Notwithstanding this huge discrepancy between firms, an international survey documents that Europe is the region where EA growth for listed companies has been higher than any other regions during the past decade (Corporate Register, 2008, p. 30). In comparison, CSR assurance in the USA has remained very low, even though CSR reporting has significantly increased (Corporate Register, 2008, p. 38) (Figure 1).

The most popular assurance standard on a global scale is the ISAE 3000, which proposes two levels of assurance: the reasonable assurance standard and the moderated assurance standard. The level of assurance defines the level of work involved in assurance engagement.

Were assurors or auditors to be completely certain about every aspect and detail of a report, they would offer absolute assurance, but of course the constraints of time, effort, costs/benefits and the nature of the subject matter mean absolute assurance is never given (Corporate Register, 2008, p. 14).

The reasonable assurance statement is framed in a positive manner:

The reported environmental data accurately reflect Company A’s environmental performance during the Year Y.

In contrast, the moderated assurance statement on data is framed in a more negative manner:

Nothing has come to our attention which causes us to believe that the reported environmental data do not accurately reflect Company A’s environmental performance during the Year Y.

As explained above, another assurance level has been in place in France and consists of a moderated assurance statement on reporting procedures (CNCC, 2004). This level is required for companies with procedures that are implemented but for which reporting is not sufficiently mature to assess the data assurance. The assurance provider’s task merely consists of analyzing procedures as a preliminary step to an in-depth review, which is likely to lead to a moderated or reasonable assurance. This first level of moderated assurance that resulted from procedures employed by the assurance provider was based on the agreed-upon procedures and framed in a negative manner:
Based on the work carried out, we don’t have any remarks to convey on (mention the proceedings concerned or the subject matter).

Accordingly, there have been three levels of assurance available in France over the period 2003-2011. Several surveys identified which levels of assurance were used by the primary French listed companies.

As shown in Table I, within the 2005-2013 period, we note an evolution in trends in the type of assurance used. At an early stage, the main French listed companies use two main types of verification, “moderated assurance on procedures or agreed procedures” that we classify as “limited assurance” (level 1) and “moderated assurance” (level 2) otherwise. Further into the decade, “limited assurance” decreases and cedes to more “moderated assurance.” However, throughout the entire period, the use of “reasonable assurance” (Level 3) does not become a common practice. Thus, because of the scarcity of EA Level 3 until now in France, we focus our study on the assurance statements of Levels 1 and 2.

2.2 Prior literature

2.2.1 CSR information and investor assessment. Prior research in the field of social and environmental accounting examines the use of ED in investors’ decision-making. Except for some contradictory findings (Campbell and Slack, 2008; Friedman and Miles, 2001), most of the prior literature concludes that ED does have an impact on firm value (Cahan et al., 2016; Lu et al., 2017) and investors’ decision-making (Deegan, 2004; Solomon and Solomon, 2006; Thompson and Cowton, 2004; Van der Laan Smith et al., 2010), which is consistent with observations from surveys conducted by accounting firms (KPMG, 2009; Deloitte 2011). While some prior research documents that the relevance of ED is challenged by investors, De Villiers and Van Staden (2010) emphasize that these findings are based on interviews, whereas in reality, such information is indeed considered in decision-making. Moreover, these authors agree that institutional investors have shifted and are now much more interested in ED. Other prior works document the general relevance of non-financial disclosure for traditional users of financial reporting[6]. Said et al. (2003) show that firms that use not only financial but also non-financial performance measures present higher mean levels of returns on assets and higher levels of markets returns. Specifically, the use of non-financial measures improves firms’ current and future stock market performance. Similarly, Orens and Lybaert (2007) show that financial analysts increasingly consider non-financial information in their reports (in terms of frequency and quantity). According to Aerts et al. (2007), an increase in ED entails that earnings forecasts by financial analysts are more accurate. However, the authors concede that this effect is less prevalent for companies in sensitive industries. The relevance of CSR information by financial analysts is, nevertheless, questioned by Saghrour and Eglem (2008), who conducted in-depth interviews to analyze to what extent and how analysts are led to integrate non-financial information (notably environmental and social) into their diagnosis. The researchers find that analysts conduct a rather quick reading of CSR reports and that most adopt a pragmatic reasoning in that they will only be interested in sustainability issues if it becomes a new requirement of their clients, who must be ready to pay for this extended mission. More recently, Clarkson et al. (2013) demonstrate that when ED is considered as an additional signal to proactive environmental strategies, such disclosures may contribute to an increase in the stock price of the company.

Based on the findings suggesting that environmental reporting may influence financial providers, some researchers seek to investigate at a more detailed level whether the nature (quantitative, monetary or qualitative) or the orientation of the disclosure (positive, negative or neutral) presents specific effects. For example, Chan and Milne (1999) show that investors react negatively when facing negative ED, whereas they find no impact in the case of a positive disclosure. More recently, Coram et al. (2009) have demonstrated that the assurance
### Table I.

Evolution of assurance level used by French listed companies

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<td>30 French firms listed on the Euronext Paris, all included in the SBF 120. Some of them (15) also belong to the CAC40</td>
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<td>30 big firms (compartment A): some of them are listed on the CAC40 (15) + 30 SMEs (compartment B &amp; C)</td>
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**Notes:**

- a Small or medium-sized enterprises;
- b the auditors diligence mainly involves agreed procedures, that is, an analysis of the procedure to collect information and an account of the resultant observations in their report.
of non-financial indicators presents a positive effect on stock price estimates (made by sophisticated financial report users) only when the assured information is positive. The authors document an effect of the assurance that would be context specific. This finding means that the financial report users consider the assurance only when they are suspicious about the reliability of the information, that is, when the disclosed information is positive.

Notwithstanding this overall use of ED, specific and contextual factors may affect the manner and the extent to which investors or financial analysts assess ED. For example, Van der Laan Smith et al. (2010) show that whether ED is considered by investors depends on their country allowance.

In addition to ED, listed firms increasingly request an assurance statement of their reporting. It is, therefore, important and timely to investigate the specific impact of this assurance statement on financial decision-making.

2.2.2 Assurance of CSR reporting and investor assessment. To date, the impact of an assurance statement on financial decision-making has been seldom investigated. According to Dierkes and Antal (1985), an external audit of ED is a necessary condition for user trust and reliability. In other words, an external ED assurance may force companies to change their behavior by considering the concerns expressed by users. To achieve this goal, companies must disclose information that satisfies the expectations of the target groups. In contrast, Epstein and Friedman (1994) report that a slight majority of their study’s respondents did not request an assurance of CSR disclosures. The researchers explain this result with the rationale that shareholders do not consider accountants to be sufficiently competent to verify non-financial indicators. From an optimistic perspective, for investors accustomed to using audited financial information, an assurance statement of CSR reporting is nevertheless likely to improve the perceived reliability of the financial users (Coram et al., 2009). Casey and Grenier (2015) indeed document that in the context of the USA, CSR assurance is not only valued by equity markets but that this positive influence is even more pronounced when the assurance is provided by an accounting firm. They nevertheless conclude that accounting firms use ineffective marketing for their CSR assurance services to their large US clients. Moreover, Steinmeier and Stich (2017) find that sustainability assurance is used by investors in their decision-making because it enables them to more effectively monitor managers. The authors indeed argue that firms can reach an economically optimal level of environmental and social expenditures and that the sustainability assurance particularly helps managers identify sustainability investment opportunities. Based on the underlying internal sets of information available, information asymmetry between managers and investors is, thus, reduced. With regards to the type of assurance provider, Steinmeier and Stich (2017) provide only weak evidence that assurance provided by an auditor is associated with a stronger effect on the managers’ optimal decisions.

Simnett et al. (2009) demonstrate that only a few firms request an assurance statement of their environmental reporting (6, 43 and 47 per cent in the USA, the UK and Australia, respectively). However, an increasing number of individual shareholders have also expressed the need to have an ED, and they want this information to be assured (De Villiers and Van Staden, 2010). Furthermore, while Pflugrath et al. (2011) show that the credibility associated with CSR reporting by financial analysts in these same three countries (the USA, the UK and Australia) is higher if an assurance has been applied, Kolk and Perego (2010) have demonstrated that companies are less likely to have their sustainability reports assured in shareholder-oriented countries. The companies’ reluctance can be explained by the assurance not always being valued by the market (Cho et al., 2014). On the contrary, Casey and Grenier (2015) report that in the context of the USA, quantifiable economic benefits are associated with assurance provided by an accounting firm. They conclude that CSR assurance is valued by equity markets and results in lower cost of capital, analyst forecast errors and analyst forecast
dispersion. Despite this economic benefit from obtaining a CSR assurance, they identified factors explaining the low demand in the context of the USA; that is:

- an intense regulatory oversight which is supposed to serve as a substitute form of credibility enhancement; and
- in the specific context of highly leveraged firms, a stringent bank monitoring which is supposed to indirectly suppress the assurance demand.

More recently, Cheng et al. (2015) found that assurance increases the willingness of investors to invest more when ESG indicators have high relevance to the company strategy. These findings suggest that the assurance of ESG indicators is a positive signal for the importance of this reported information to investors. Moreover, an assurance statement signals increased credibility in the specific context of a manager whose pay is indexed to the firm’s social performance (Brown-Liburd and Zamora, 2015).

Based on the prior knowledge concerning the spread of assurance practices and the expectations from investors, we conduct an empirical study to specifically examine the impact of the presence or absence of an EA on investment decision and, furthermore, to examine whether the level of EA matters. Considering this literature and background, the following research questions were posed:

**RQ1.** Does positive environmental disclosure increase investment?

**RQ2.** Does a higher level of assurance statement on environmental disclosure increases investment?

### 3. Research method

#### 3.1 Participants

According to Chan and Milne (1999, p. 268), “The definition of an “investor” is not so much a current shareholder but an individual who possesses the necessary skills to evaluate investments”. Thus, we have selected an audience of investment professionals who have experience in making portfolio decisions and who act as financial analysts (Chan and Milne, 1999; Gillenkirch et al., 2014; Holm and Rickardsson, 2008). Our proxy for financial analysts is furthermore relevant because their actual job is to provide forecasts and recommendations to buy or sell securities to investors (Dinh and Gajewski, 2005). As such, the sample of analysts contacted consisted of members of the French Society of Financial Analysts.

We conducted the experiment through a randomized allocation of respondents in four different groups, allowing us to neutralize the impact of external variables (known or unknown) on the variables of investigation. Then, these four groups were randomly assigned to one of the three manipulated groups or to the control group. We thus applied a double randomization as it targets “avoiding the concentration of individuals presenting specific feature in one group” (Igalens and Roussel, 1998, p. 29).

#### 3.2 Internal validity and external validity

The choice to utilize a population of professionals directly involved in the investment decision-making process is the result of a trade-off. Many experimental studies occur in laboratories, which may strengthen internal validity. However, most of these empirical studies use populations of students because of the difficulty in obtaining the participation of investment professionals. In our study, we have chosen to strengthen the external validity of the study by using professional financial analysts through an online survey despite the risk of a lower response rate.
As such, we control for the internal validity of the study by limiting external variables that could influence the responses of professionals. This design choice is meant to reduce the volume of information used by financial analysts to control for other factors as explanatory variables that would affect the dependent variables such as industry, stock price or prospects for growth.

3.3 Experimental design

In accordance with Chan and Milne (1999), Milne and Chan (1999), Milne and Patten (2002) and Holm and Rickardsson (2008), each group of investment professionals were asked to consult the annual reports excerpts of two companies, A and B, and to simulate an investment recommendation by allocating a total amount of €50,000. The experiment aims at testing two specific variables, ED and EA (all else being equal), which should affect investors’ decision-making. In our case, we used a design with a control group (Jolibert and Jourdan, 2006, p. 162). We then compared the impact of each additional variable on the invested amount of each manipulated sub-sample.

Concerning the experimental instrument, the minimum frame of disclosure available to all groups consists of financial statements for Firms A and B. The control group (Group 1) needed to choose to invest an amount of €50,000 between A and B solely based on financial statements. The detailed instrument is displayed in Appendix.

Financial statements are based on two French listed firms in the chemistry, pharmacy and cosmetics industry[8]. Firm A is a better performer than B[9]. Group 2 receives excerpts of annual reports containing the same financial statements but with additional disclosure compared to the control group. Firm A displays general information, while Firm B displays environmental indicators. In our study, ED are exclusively indicators so that the assurance (if any) should be restricted in scope. It is important to note that all environmental indicators are displayed for years y and y – 1 and show improvement in firm environmental performance[10]. In Group 3, the additional disclosure for Firm B includes environmental indicators plus an assurance statement that is moderated on the data (EA Level 2). The content of the assurance statement is framed exactly the same as those disclosed by CAC40 French firms. In Group 4, the additional disclosure for Firm B consists of environmental indicators plus an assurance statement that is moderated on the process of data collection (EA Level 1). Again, the content is identical to those disclosed by French listed firms. For Groups 2, 3 and 4, general information provided for Firm A is adapted in length to display the same number of pages as for Firm B. The different experimental conditions are summarized in Table II.

The comparison between the dependent variable values for the three manipulated groups allows us to answer our research questions below:

RQ1. Does positive environmental disclosure increase investment?

RQ1 is positively answered if \( O_{2B} > O_{1B} \) (Treatment 1).

RQ2. Does a higher level of assurance statement on environmental disclosure increases investment?

RQ2 is be positively answered if:

- \( O_{3B} > O_{2B} \) (Treatment 2);
- \( O_{4B} > O_{2B} \) (Treatment 3); and
- \( O_{3B} > O_{4B} \) (Treatment 4).
3.4 Regression models

In line with the prior literature, three control variables are included in the regression models:

1. the risk associated with the financial decision;
2. the investment horizons; and
3. the respondents’ specialization.

Different concepts of the CSR financial justification, and thus of the risk associated with the financial decision, are debated in the literature. Proponents of agency theory argue that CSR encompasses actions that are mainly initiated in favor of management but to the detriment of the firm profitability, thus incurring additional risks, agency costs and the disinterest of financial analysts. In contrast, advocates of the stakeholder approach define CSR as a set of corporate politics that are essential to manage social and environmental risks and indirectly to prevent the negative financial consequences because of a potential CSR disaster. The stake for CSR reporting is to provide “scope for exploring the effectiveness of different types of risk assessment” (Cohen and Simnett, 2015, p. 60), which is particularly relevant in the underlying context of “a broad range of qualitative and quantitative, but not necessarily monetized, information and relationships” (p. 60). More specifically, Jo and Na (2012) conducted a literature review on the question: “Does CSR reduce firm risk?”, which allowed the identification of five justifications supporting the risk-reduction hypothesis in context of CSR:

1. CSR engagement increases insurance-like protection, hence risk management;
2. environmental risk management is negatively related to the cost of capital and CSR engagement can lower the firm cost of equity;
3. CSR is merely an opportunity rather than a cost if the company succeeds in reducing its risks on a common issue between the firm and the society;
4. firms engaged in CSR are more likely to disclose information and therefore improve their transparency, which contributes to a reduction of information asymmetry and hence perceived risk; and
5. the better the CSR performance, the lower the capital constraints because of the long-term orientation and perspective that consists of reducing risks.

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<th>Groups</th>
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<td>Control group</td>
<td>B Financial statements</td>
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<td>Manipulated group</td>
<td>B Financial statements Environmental indicators EA Level 1</td>
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In accordance with this literature, the nature (positive or negative) of the relationship between risk and financial investment decision was not anticipated.

Most experiments that addressed CSR measured the horizons of the financial decision and proposed various conclusions. Belkaoui (1980) analyzed the impact of the disclosure on the abatement costs of pollution on investment decisions made by three types of external users: bankers, accountants and students. The researchers reported that belonging to a professional category affects the decision. Indeed, this additional information is considered by bankers in both the short term and in the long term but only in the long term by accountants and not at all by students. Similarly, Milne and Chan (1999) demonstrated that accountants reward the narrative corporate social disclosure in the long term and penalize it in the short term, whereas investment analysts penalize such information in the long term and reward it in the short term. Chan and Milne (1999) propose a detailed explanation of the respondents’ investment strategy and conclude that, from a long-term perspective, users can decide to recognize the long-term benefits of ED or can react negatively by criticizing the environmental costs involved. From a short-term perspective, users are unaffected by either the positive or the negative ED; alternatively, they can invest in a sinner firm in which they would not have invested in the short term. This last result is confirmed by Milne and Patten (2002), who show that accountants reward negative environmental performance in the short term because some risk-taking is assumed to be favorable in the near future. While most previous experiments document a main effect of CSR disclosure on the financial decisions made in the long term, Rikhardsson and Holm (2008) provide different conclusions from the literature; they argue that investment allocation decisions are more affected when disclosed environmental information is qualitative and considered from a short-term perspective. As short-term investments are considered riskier, firms have an interest in showing that they are in control of their environmental risks. In accordance with this controversial literature on the financial investment horizons, the sign of the relation between horizon and financial investment decision was not anticipated.

Additionally, we tested the impact of the financial analyst profile (i.e. specialized in sensitive industries or not) on the investment allocation decision. The consideration of such a control variable aims to extend beyond the results of Holm and Rickardsson (2008), who demonstrated that investors with different experience levels (experienced and novice) make different investment decisions. Consequently, we run the following regressions:

\[
B = b_0 + b_1 \text{ED0} + b_2 \text{A01*ED0} + b_3 \text{RISK} + b_4 \text{HORIZON} + b_5 \text{SPE}
\]

+ e (Regression 1a)

\[
B = b_0 + b_1 \text{ED0} + b_2 \text{A012*ED0} \times b_3 \text{RISK} + b_4 \text{HORIZON} + b_5 \text{SPE}
\]

+ e (Regression 1b)

where:
- B: Financial investment made in Company B;
- ED0: ED is coded (1), when provided (Groups 2, 3 and 4) and (0) otherwise;
- A01*ED0: Coded: (1) if environmental data is disclosed and is assured, (0) otherwise. It means (0) for Groups 1 and 2 and (1) for Groups 3 and 4;
- A012*ED0: Coded: (1) if environmental data is disclosed and presents an assurance statement of level 1, (2) if environmental data is disclosed and presents an assurance
statement of Level 2, and (0) otherwise; the codes assigned are (0) for Groups 1 and 2, (2) for Group 3 and (1) for Group 4;

- **RISK**: Perception of the risk associated with the financial investment, measured based on a Likert scale of five points;
- **HORIZON**: Coded (1) for the long term and (0) for the short term; and
- **SPE**: Coded (1) when analysts are specialized (see industries above) and (0) otherwise.

The quality of these two regression models has been measured in reference to the usual robustness tests.

### 4. Empirical findings

#### 4.1. Descriptive results

We collected 108 usable responses from which 93 professionals provided information relating to their job and to the duration of their professional experience. Descriptive statistics of their profiles indicate that they are mainly portfolio managers and their mean experience is greater than ten years (Table III).

The other descriptive statistics are displayed in Table IV below.

Among the global sample of collected answers, professionals invest an average of €23,314.81 in the firm with additional ED (namely, Firm B). This finding is consistent with the design of the study given that the financial performance of Firm A is slightly better than that of Firm B. This result is also consistent with Holm and Rickardsson (2008), who find that ED do not outweigh financial data. We can also note that a few respondents are specialized in environmental industries. This result is consistent with our design, which

---

**Table III.**

No. of answers: 108 usable responses

<table>
<thead>
<tr>
<th>Professional profile</th>
<th>N</th>
<th>Experience</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio manager</td>
<td>23</td>
<td>1 to 5 years</td>
<td>12</td>
</tr>
<tr>
<td>Buy-side analyst</td>
<td>14</td>
<td>6 to 10 years</td>
<td>19</td>
</tr>
<tr>
<td>Sell-side analyst</td>
<td>12</td>
<td>11 to 15 years</td>
<td>18</td>
</tr>
<tr>
<td>Issuer</td>
<td>12</td>
<td>16 to 20 years</td>
<td>27</td>
</tr>
<tr>
<td>Analyst in a research office</td>
<td>6</td>
<td>21 to 25 years</td>
<td>10</td>
</tr>
<tr>
<td>Credit manager</td>
<td>2</td>
<td>26 to 40 years</td>
<td>7</td>
</tr>
<tr>
<td>Buy-side analyst/asset manager</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buy-side analyst/credit manager</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total of answers to profile questions:</td>
<td>93</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table IV.**

Other descriptive statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>St. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>108</td>
<td>0</td>
<td>50,000</td>
<td>23,314.81</td>
<td>14,874.803</td>
</tr>
<tr>
<td>SPE</td>
<td>1</td>
<td>0.16</td>
<td>0.366</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Horizon</td>
<td>1</td>
<td>0.72</td>
<td>0.450</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk A</td>
<td>5</td>
<td>2.74</td>
<td>0.790</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk B</td>
<td>5</td>
<td>3.64</td>
<td>0.755</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:** SPE: Specialization of respondents in environmental industries; coded (1) for the industry specialization according to DAFSA classification and (0) otherwise; Horizon: Investment horizon of respondents; coded (1) for long term and (0) for short term.
does not consist of questioning investment analysts specialized in environmental information. Furthermore, respondents, on average, recommend investment from a long-term perspective and perceive Firm B as more risky than Firm A. Finally, after randomization of the sample in the four groups, we observe that the split is acceptable for comparing the decisions made by the different groups, with a delineation of respondents that is similar to that used in previous studies (Chan and Milne, 1999; Consolandi et al., 2009; Milne and Chan, 1999) (Table V).

4.2 Tests of comparison of means (ANOVA)

RQ1 and RQ2 are analyzed by comparing the mean amounts invested in Firm B given the specific information displayed in addition to financial statements. The results of the four experimental treatments are presented in Table VI.

Treatment 1 examines a comparison between no ED and positive ED. The results indicate that investment professionals invest €5,864.76 more in Firm B when environmental information is disclosed. This result is significant at the threshold of 10 per cent (in accordance with Student’s t-test and Mann–Whitney’s test).

Treatment 2 examines a comparison between positive ED with no EA and positive ED with EA Level 2. The comparison indicates that assurance of ED does not appear to have a favorable impact on the investment decision compared to excerpts from annual reports with no EA displayed. Indeed, respondents invest €5,485.35 less when ED is accompanied by an assurance Level 2. However, this result is not statistically significant.

Treatment 3 examines a comparison between positive ED with no EA and positive ED with EA Level 1. Here again, the comparison indicates that professionals invest €8,628.21 less when there is an EA statement of Level 1 (moderated assurance on the process of data collection) than when no assurance statement is provided. This result is significant at the threshold of 5 per cent (in accordance with Student’s t-test, Mann–Whitney’s test and Kolmogorov–Smirnov’s test).

Finally, the fourth treatment compares the amount of average investment in Firm B related to each level of assurance when it is displayed at Levels 1 and 2. We note here that investors who are provided with an EA Level 2 (moderated assurance on data) invest €3,142.86 more than when they have an assurance Level 1 (moderated assurance on the process of collection). However, this result is not statistically significant.

4.3 Regression model analyses

Table VII indicates that the propensity to invest in B decreases by €8,958 when an assurance statement is provided (regardless of the level of the assurance statement). This result contrasts with Pfugrath et al. (2011), who report that the credibility of the CSR report is higher when it is assured and when the assuror is an accountant. To take this further, it seems important to examine the relevance of the different levels of assurance statements rather than the impact of the assurance as a whole (see regression in Table VIII). We find that the negative impact of the assurance statement is greater than the financial benefit.

<table>
<thead>
<tr>
<th>Group</th>
<th>Disclosures</th>
<th>No. of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Financial statements only</td>
<td>31</td>
</tr>
<tr>
<td>2</td>
<td>ED without EA</td>
<td>26</td>
</tr>
<tr>
<td>3</td>
<td>ED + EA Level 2</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>ED + EA Level 1</td>
<td>30</td>
</tr>
<tr>
<td>Treatments</td>
<td>Treatment 1(a)</td>
<td>Treatment 2(b)</td>
</tr>
<tr>
<td>------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>N</td>
</tr>
<tr>
<td>1</td>
<td>31</td>
<td>22,596.8</td>
</tr>
<tr>
<td>2</td>
<td>26</td>
<td>28,461.5</td>
</tr>
</tbody>
</table>

Mean difference

<table>
<thead>
<tr>
<th>One-tailed tests (sig level)</th>
<th>t-test: 0.068**</th>
<th>t-test: 0.1205</th>
<th>t-test: 0.0155**</th>
<th>t-test: 0.2315</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann–Whitney: 0.0655**</td>
<td>Mann–Whitney: 0.1305</td>
<td>Mann–Whitney: 0.0165**</td>
<td>Mann–Whitney: 0.2315</td>
<td></td>
</tr>
<tr>
<td>Kolmogorov–Smirnov: 0.131</td>
<td>Kolmogorov–Smirnov: 0.377</td>
<td>Kolmogorov–Smirnov: 0.0375***</td>
<td>Kolmogorov–Smirnov: 0.339</td>
<td></td>
</tr>
</tbody>
</table>

Notes: (a) No ED/Positive ED; (b) Positive ED with no EA/Positive ED with EA Level 2; (c) Positive ED with no EA/Positive ED with EA Level 1; (d) Positive ED with EA Level 2/Positive ED with EA level 1; ** One-tailed significance at the 0.05 level; *** One-tailed significance at the 0.01 level; Two-tailed significance at the 0.01 level was also confirmed: 0.031***; Two-tailed significance at the 0.01 level was also confirmed: 0.075**
resulting from environmental reporting, but the ED does not appear as significant in the regression model. In accordance with Saghroun and Eglem (2008), this non-significant result can be explained by the observation that certain financial analysts may have minimal concern about the environment, either because of their industry specialization or because they believe that their opinion on the stock market is somewhat disconnected from environmental issues.

With regards to the risk variable, in accordance with Ioannou and Serafeim (2015), it seems that financial analysts perceived ED as an agency cost, which suggests that they propose pessimistic recommendations to the detriment of Firm B disclosing ED. Instead of constituting a level of risk mitigation, the ED of Firm B contributes to reducing the amount invested by financial analysts in this company. “The investment in environment is perceived by financial analysts as an adverse expense for the share price” (Saghroun and Eglem, 2008, p. 106). Furthermore, while Orlitzky and Benjamin (2001) show that the financial risk is negatively correlated with firm corporate social performance, they conclude that disclosing this corporate social performance has only a small impact on the financial risk. This result arises because such disclosure results from internally collected data in which the society does not place great trust. However, such trust between the stakeholders is deemed essential to reduce uncertainty and, therefore, minimize the perceived risk.

Although the horizons variable is not significant, its negative impact on the investment allocation decision confirms Milne and Chan (1999), who reported that, from a long-term

---

### Table VII
Analysis of regression model 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Predicted sign</th>
<th>Estimates</th>
<th>Significance of t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED01</td>
<td>(+)</td>
<td>5,925,540</td>
<td>1.610</td>
</tr>
<tr>
<td>A01*ED01</td>
<td>(+)</td>
<td>−8,958.279</td>
<td>−2.658</td>
</tr>
<tr>
<td>RISKB</td>
<td>(+/−)</td>
<td>−7,341.562</td>
<td>−4.145</td>
</tr>
<tr>
<td>HORIZON</td>
<td>(+/−)</td>
<td>−4,062.324</td>
<td>−1.360</td>
</tr>
<tr>
<td>SPE</td>
<td>(+)</td>
<td>−7,708.802</td>
<td>−2.095</td>
</tr>
</tbody>
</table>

Notes: *Two-tailed significance at the 0.10 level; **Two-tailed significance at the 0.05 level; ***Two-tailed significance at the 0.01 level

---

### Table VIII
Analysis of regression Model 1 BIS

<table>
<thead>
<tr>
<th>Variables</th>
<th>Predicted sign</th>
<th>Estimates</th>
<th>Significance of t-statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED01</td>
<td>(+)</td>
<td>3,927.828</td>
<td>1.120</td>
</tr>
<tr>
<td>A012*ED01</td>
<td>(+)</td>
<td>−4,302.234</td>
<td>−2.101</td>
</tr>
<tr>
<td>RISKB</td>
<td>(+/−)</td>
<td>−7,686.541</td>
<td>−4.281</td>
</tr>
<tr>
<td>HORIZON</td>
<td>(+/−)</td>
<td>−3,214.872</td>
<td>−1.078</td>
</tr>
<tr>
<td>SPE</td>
<td>(+)</td>
<td>−7,538.082</td>
<td>−2.019</td>
</tr>
</tbody>
</table>

Notes: *Two-tailed significance at the 0.10 level; **Two-tailed significance at the 0.05 level; ***Two-tailed significance at the 0.01 level
perspective, investment analysts penalize firms providing CSR disclosures. In our case, respondents stated that they invested in a long-term strategy (see the descriptive statistics), which caused a negative impact on the financial decision. Finally, as the respondents are not specialized in sensitive industries (see the descriptive statistics), it is not surprising that their lack of specialization leads to a decrease in the financial amount invested given that they have minimal awareness of environmental issues.

Table VIII reproduces the previous regression by measuring the impact of the two levels of assurance statement on the propensity to invest.

This model offers results that are similar to the previous model. The main result consists of confirming the negative impact of the assurance statement on the propensity to invest. According to the results presented in Table VI (Treatment 3), the negative impact of the assurance statement seems to be determined by that of Level 1. This result allows us to make additional contributions to the findings of Hodge and Subramaniam (2009), who concentrated on the impact of assurance Levels 2 and 3 on users’ confidence and their perception of reliability.

5. Discussion and conclusion
In this study, financial investment professionals participated in an experiment in which their task was to invest a fixed amount in either Firms A or B. Participants were provided general information on the group for Firm A, whereas they were provided with ED and an assurance statement for Firm B. We obtained and analyzed 108 responses with participants who belonged to either the control group or one of the three manipulated treatment groups.

The results indicate that the average amount of investment when positive ED is provided is higher than when there is no ED. This finding suggests that such ED has a positive impact on investment decision-making. This result is consistent with prior research (Clarkson et al., 2013; Deegan, 2004; De Villiers and Van Staden, 2010; Solomon and Solomon, 2006; Thompson and Cowton, 2004; Van der Laan Smith et al., 2010) that has documented the use of ED in investor decision-making. This conclusion is also in accordance with Orens and Lybaert (2007) and Aerts et al. (2007), who demonstrate that financial analysts increasingly consider non-financial information, particularly ED.

Conversely – and surprisingly – results indicate that an assurance statement on environmental disclosure does not increase investment. The propensity to invest in Firm B decreases when an assurance statement is provided (regardless of the level of assurance statement). This negative impact of the assurance statement on the propensity to invest seems to be primarily determined by the negative impact of Level 1 assurance statement. Indeed, we find that professionals invest a significantly lower amount when a Level 1 assurance statement is provided than when there is no assurance. This result suggests that a moderated assurance on procedures (or agreed procedures) conveys a negative signal that translates into a decrease in investment. Therefore, companies seem to have an incentive to provide the necessary efforts to achieve a higher level of assurance or at least to not publish this assessment of procedures. The expected assurance level is determined in the engagement letter. Assurance Level 1 signals that the company decided not to extend beyond this level notably because of financial constraints or because its procedures are not sufficiently mature to provide reliable data. Indeed, when the appropriateness of the procedures is considered insufficient, the assuror shall refuse to sign a higher assurance statement. By agreeing to provide Level 1 assurance, the assuror certifies that the company has made efforts to develop data collection procedures but also acknowledges that these procedures do not allow a proper assessment of data reliability. It must be emphasized that Level 1 assurance was not covered by the ISAE 3000 framework, which only considers
Levels 2 and 3 assurances; thus, the analysis of data collection procedures constitutes only a preliminary step in its in-depth review[11].

The contrasting results for RQ2 reflect a lack of consideration of Level 2 assurance from investors in financial decisions. Although Level 2 means that between 10 and 50 per cent of the reporting scope has been assured and that the reliability of 80 per cent of the data can be certified, such an assurance level statement is neglected by financial analysts. Consistent with prior research on the audit expectation gap (Koh and E-Sah, 1998; Noghondari and Foong, 2013; Ruhnke and Schmidt, 2014), assurance Level 2 appears to be insufficiently understandable to investors. Furthermore, the content of the assurance statement is subject of unresolved debates (Cohen and Simnett, 2015). First, while the statements provided by accounting firms make reference to the general ISAE 3000 standard, there is no information about how it was customized to the CSR subject matter – which is counterproductive in terms of understanding such assurance statement. Second, several unanswered questions remain about how to write the different levels of assurance statements (disclosure on key risks and risk factors, areas of misstatements, areas of testing, potential recommendations, presentation of a mixed assurance statement) to improve their understanding and eventually help them into account. Our result for assurance Level 2 is also consistent with Steinmeier and Stich (2017), who provide only weak evidence on the association between assurance and efficiency of the sustainable managerial decisions if a higher level of assurance is provided. Their findings reveal that even if a higher assurance level improves reporting accuracy through an in-depth analysis of the reporting processes, it does not necessarily guarantee a better understanding from investors, thus a better monitoring from managers. RQ2 allows us to at least examine one effect that was not explored fully, namely, the impact of the level of assurance on financial decisions. This study is also aligned with Hodge and Subramaniam (2009), who examined the impact of Levels 2 and 3 assurances on student trust. Our study provides complementary results by analyzing the impact of a Level 1 assurance statement on the decision-making of actual investors.

Based on our results, we can conclude that the level of assurance appears to have a specific impact on investment decisions. The assurance statement on ED cannot be viewed or measured like a binary variable. When there are different assurance levels available that can be requested by firms, investors negatively perceive the lowest level of assurance. Consistent with prior research documenting that negative environmental information was considered more strongly than positive information, our study shows that, in a voluntary assurance setting, no assurance appears better than limited assurance.

First, these results have implications for companies. Our research reveals that until 2012, French companies were financially penalized by an ED assurance Level 1. Instead of benefiting from increased investor credibility – based on voluntary assurance solicitation – they suffered from a decrease in financial investment because of the level of assurance obtained. In line with the recommendations from financial analysts, investors did not value the proactive engagement of these firms and their willingness to initiate an assurance process of their reporting. They penalized those firms which reporting was not mature enough by concentrating their financial investment in firms that were already able to demonstrate the data reliability. Therefore, when assurance is voluntary and there are at least two levels, our study results suggest that firms should avoid selecting the lowest level of assurance because it has a negative impact on investor decisions. From this perspective, firms should devote sufficient efforts and resources to obtain at least Level 2 ED assurance.

Second, our results allow us to legitimize the professional changes inherent to the new regulation of assurance practices having followed the French Grenelle 2 Law enforcement in 2012. Since then, the French National Institute of Auditors (CNCC) developed a specific
standard on sustainability report assurance in line with the ISAE3000 requirements, putting thus an end to the assurance Level 1 and concentrating the French auditor opinion on assurance Levels 2 and 3. In other words, in the context of voluntary assurance, professionals in those countries have an interest to align their practices with the ISAE 3000 international recommendations, that is provide only Levels 2 and 3 assurance. The quality of the reporting framework must, therefore, be considered as a prerequisite for these two levels of assurance and not as a level of assurance in its own right – which, in our view, constitutes another important professional implication. Since the removal of assurance Level 1, its previous objective was integrated as a preliminary step of the assurance Levels 2 and 3, as the first step of the assurance process starts with the CSR reporting proceedings assessment and the internal control review. Therefore, assurance is now much more aligned on financial audit – not only while planning the audit program but also in the way of writing the assurance statement.

Like all studies, ours is subject to limitations. First, our study notes an issue of understandability for Level 2 assurance without being able to explain whether it results from the negative connotation of the assurance provider’s opinion, a lack of financial decision-makers’ training or a lack of clarity on what this level of assurance represents. Thus, it would be interesting to initiate a new experimental study to precisely test the understanding of assurance Level 2 according to

- whether the conclusion is expressed in negative or positive form;
- whether the decision-maker has been more or less trained; and
- adapted versions of the text. As this level is the most assured, it would be interesting to improve its intelligibility (Table I).

Second, we focus on the context of a stakeholder-oriented country, that is, France (Kolk and Perego, 2010 in reference to La Porta et al., 1997), to test the impact of assurance on the decision of the financial analysts. Given that in shareholder-oriented countries, the credibility associated by financial analysts to CSR reporting seems higher if assurance has been requested by companies (Pflugrath et al., 2011), it would be interesting to extend this study by replication in and/or comparison with such a context, for example, Australia, Canada, the UK or the USA (La Porta et al., 1997).

Finally, in accordance with prior research demonstrating the growing involvement of accountants as assurance providers (Mock et al., 2007, 2013), we do not consider other assurance providers. However, Owen et al. (2000) accuse accountants of conducting these missions for strictly financial reasons and, thus, without an objective approach, and Perego (2009) documents that accountants provide recommendations and opinions of inferior quality to those of non-accountants. Saghroun and Eglem (2008) also conclude that most financial analysts interviewed would be interested in assuring CSR information and mainly require the intervention of a specialized and independent organization, which is distinct from the accountants. Therefore, future research could focus on the financial impact of an assurance statement signed by non-accountants in different contexts of recommendations and opinions.

Acknowledgments
The authors wish to thank Den Patten, Joseph Johnson, Amy Hageman, Jamie O’Neill, and the participants of the 2015 French Congress on Social and Environmental Accounting Research (3rd CSEAR France Conference) in Cergy-Pontoise, the 27th International Congress on Social and Environmental Accounting Research in Saint Andrew and the 2015 Conference of the American
Accounting Association’s Public Interest Section for their helpful comments and suggestions provided on earlier versions of this paper. Charles Cho also acknowledges the financial support provided by the Erivan K. Haub Chair in Business & Sustainability and the Global Research Network program through the Ministry of Education of the Republic of Korea and the National Research Foundation of Korea (NRF-2016S1A2A2912421).

Notes

1. The specific language of the Directive states the following:

“Indeed, disclosure of non-financial information is vital for managing change towards a sustainable global economy by combining long-term profitability with social justice and environmental protection. In this context, disclosure of non-financial information helps the measuring, monitoring and managing of undertakings’ performance and their impact on society (Directive 2014/95/EU, p. L330/1, §3).

5. Member States shall ensure that the statutory auditor or audit firm checks whether the non-financial statement referred to in paragraph 1 or the separate report referred to in paragraph 4 has been provided.

6. Member States may require that the information in the non-financial statement referred to in paragraph 1 or in the separate report referred to in paragraph 4 be verified by an independent assurance services provider” (Directive 2014/95/EU, p. L330/5).

2. Environmental assurance can be defined as an independent third-party verification of the environmental reporting.

3. Listed companies, non-listed public limited companies and limited partnerships, which total assets or revenues are at least of 100 million Euros and the average number of permanent employees during the year is at least 500.

4. The concept of “investor assessment” relates to examining the investor’s financial decision after a specific disclosure (an assured or not-assured environmental disclosure in our case) is made. In practice, investor assessment consists of determining the amount invested in a specific company.

5. Since 2012, for companies where the assurance is compulsory, French accountants have been providing assurance for CSR reporting as independent third parties through a reasonable or limited assurance statement. Accountants can also intervene in other missions relative to “other works on social information” in companies for which assurance is not compulsory or in companies where they are retained for a complementary mission in addition to the regulated mission. These missions target proposed attestations, consultations and reports resulting from agreed-upon procedures.

6. This finding is thus consistent with the recent trend of regulation requiring ED as additional and useful information for financial decision-making.

7. Before conducting the experiment, we conducted a pilot test on a sample of 20 Master in Finance students to validate the experimental instrument (extracts of annual reports and survey).

8. DAFSA (Documentation d’Analyse Financière Société Anonyme) classification.

9. In Firm B, the disclosure of environmental information and the procurement of an assurance statement should compensate for a slightly weaker financial performance than that of Firm A.

10. For instance, among the 12 indicators, water consumption for Firm B decreases from 73,685,478 million cubic meters in year $y-1$ to 72,506,511 cubic meters in year $y$.

11. Since 2012, French practices have been aligned with the ISAE 3000 because Level 1 assurance no longer exists, and the French National Institute of Auditors proposes only Levels 2 and 3 assurance models. Given that internal control constitutes a preliminary step of the financial audit, analysis of CSR reporting procedures has become a prerequisite for the assurance.
References


Capitalcom (2012), 5ème Baromètre Annuel Capitalcom 2012 Sur La RSE Au Sein Du CAC 40, Communiqué de Presse.


Conselho Federal de Contabilidade (2012), “Normas brasileiras de contabilidade”, NBC TO – DE ASSEGURAÇÃO CONTÁBIL NBC TO 3000, NBC TO 3402 e CTO 01, Brasília.


Royal NIVRA. (2007). “Assurance engagements relating to sustainability reports”.


**Further reading**

Appendix. The experimental instrument of the survey

Decision of financial investment
You must answer the following questions only after consulting releases annual reports of companies A & B extracts.

1. Your customer has a sum of €50,000. Specify the amount that you advise him to invest in each of the companies, knowing that the sum of the two investments must be equal to €50,000.
   A :
   B :

2. Specify the importance you have given to the following documents for your recommendation:

<table>
<thead>
<tr>
<th>Financial Position</th>
<th>Non-useful Information</th>
<th>Information lightly important</th>
<th>Information moderately important</th>
<th>Important information</th>
<th>Very useful information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit and loss account</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Assurance on consolidated account</td>
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<tr>
<td>Environmental disclosures</td>
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<tr>
<td>Assurance on ED</td>
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<tr>
<td>Assurance on process of collect of ED</td>
<td></td>
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</tr>
</tbody>
</table>

3. Specify on the following scale your perception of risk related to the financial investment in each of the two companies:

<table>
<thead>
<tr>
<th></th>
<th>Very low risk</th>
<th>Low risk</th>
<th>Moderated risk</th>
<th>High Risk</th>
<th>Very high risk</th>
</tr>
</thead>
</table>

A :
B :

4. Have you formulated your opinion with a view to:
   Short term (less than 1 year)
   Long term (more than 1 year)

5. Profile questions
Please specify

5.1. Your job:
   Sell-Side Analyst
   Buy-Side Analyst
   Credit analyst
   Analyst in a rating agency
   Analyst a research office
   Asset Manager
   Issuer
   Other (please specify)

(continued)
5.2. Your industry specialization (according to SFAF):
- Resources
- Basic Industries
- General Industrials
- Cyclical Consumer Goods
- Non-Cyclical Consumer Goods
- Cyclical Services
- Non-Cyclical Services
- Utilities
- Financials
- Information Technology
- Small and Mid Caps
- Other (please specify)

5.3. Number of years of experience:

5.4. Contact (Name, Company, E-mail address).

This optional question is only intended to facilitate data collection. The information will remain confidential.

Corresponding author
Charles H. Cho can be contacted at: ccho@schulich.yorku.ca

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