

Communication about environmental information: what drives the effect on income smoothing as proxy of earnings quality?

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Abstract

The purpose of this paper is to examine the association between corporate environmental reporting and income smoothing made by companies listed in Paris Stock Exchange. We use earnings smoothness as proxy of earnings quality desirable by investors and we measure environmental reporting by index score using content analysis method, the index was composed by items from French law of New Economic Regulation, the global compact, Global Reporting Initiative and new Acts on environmental protection. Our results show a positive relationship between the two variables; firms with high level of environmental reporting are less incited to smooth earnings.

Keywords: Environmental reporting, Income smoothing, French companies

Introduction

The extent to which company managers should consider non-financial factors in making decisions, rather than focusing only on maximizing financial profit, has been the subject of much researches in current years.

The latest studies, in the field, were interested to financial determinants of accounting results manipulation (political costs, financial reporting ...) and have neglected the non-financial elements impact, such as environmental reporting scope (Gamble *et al.*, 1996; Fekrat, Inclan, Petroni, 1996; Freedman and Patten, 2004; Hasseldine, Salama and Toms, 2005; Freedman and Stagliano, 2008; Cho, Roberts and Patten, 2010; Campbell and Slack, 2011; Eljido-Ten, 2011; Cong and Freedman, 2011; ...).

The main objective of this work is to investigate the relation between income smoothing (SMTH) and environmental reporting. Both concepts are extensively covered in the analytical and empirical literature, in accounting and management. However, their association is studied in an incomplete fashion.

Chalayer (1994, 1995), Jeanjean (2001) and Stolowy and Breton (2003) are the famous studies in the French context that are studied the concept of income smoothing. However, due to imperfect auditing in the real world of economy, managers have incentives to take discretionary actions over reported income to maximize their own benefit. Healy and Wahlen (1999, p.366) argue that income smoothing (as kind of earnings management) exists when managers attempt to manipulate some interested parties or to influence contractual outcomes that depend on reported accounting numbers.

In spite of the focus on of managers on income smoothing and the large literature on why managers tend to smooth earnings, the literature has not provided a link between the roles that managers place on smooth earnings and environmental reporting.

Prior literature and development of hypotheses

Environmental reporting (ENVD)

Environmental reporting can be defined as a concept that describes the various means by which firms communicate information about the effect of the environmental aspects on their activities.

In recent years, there has been a sharp growth of Corporate Social Responsibility (CSR) initiatives meant to upgrade the social and environmental standards of firms beyond the minimal requirements of law.

CSR describes a firm's obligation to protect and improve social and environmental welfare now as well as in the future, by generating sustainable benefits for stakeholders.

Many researchers have investigated the occurrence of corporate environmental disclosure in annual reports. In particular, the frequency and scope of environmental disclosure have increased substantially since the late 1970 and are now relatively common (Patten, 2002). The increase in environmental disclosures has corresponded with an increase in community concern regarding environmental and ecological matters (Hasseldine *et al.*, 2005).

We attempt to study the importance of environmental items as part of CSR; this choice is motivated by the scope of growing damages and ecological catastrophes. Many studies examine the impact of ecological and environmental disclosure on corporate performance and others variables (Hasseldine *et al.*, 2005; Cho, 2009; Chiang, 2010; Bessire and Onée, 2010; Coetzee and van Staden, 2011).

Income smoothing (SMTH)

According to (Dechow, Ge and Schrand, 2010) earnings smoothness has been of interest in the accounting literature, but the incentives and effects of smoothness are still not well understood.

Earnings smoothing can be either "artificial" or "real" (Albrecht and Richardson, 1990). Real smoothing involves decisions that influence cash flows and dissipate organization value. Examples include changing the timing of investments and providing promotional discounts or vendor financing to risky customers to expand sales toward the end of the quarter. By contrast, artificial smoothing does not affect cash flows. Generally Accepted Accounting Principles (GAAP) provided an advantage of reporting flexibility in order to achieve this kind of smoothing.

The related literature has afforded alternative explanations for earnings smoothing. Barnea, Ronen, and Sadan (1976) argue that earnings smoothing is a signaling mechanism. In an overlapping generations model, Dye (1988) shows that current shareholders may require earnings smoothing to influence perceptions of potential shareholders about firm value when the manager's contract with current shareholders is unobservable.

Hypothesis

Environmental reporting effect. This paper examines the link between communication of environmental information and the level of income smoothing.

Environmental accounting scholars proposed environmental reporting as a tool through which increasing environmental accountability duties may be discharged, since it can alert a wide variety of stakeholders regarding corporate environmental consequences (Cormier, Ledoux and Magan, 2011; Clarkson, Overell and Chappelle, 2011).

Institutional, stakeholder and legitimacy theories are the most utilized in the environmental accounting literature to explain environmental disclosures (Cho, 2009; Cong and Freedman, 2011; Deegan and Unerman, 2011; Cormier *et al.*, 2011). Stakeholder theory holds that environmental reporting is made because they are demanded by the stakeholders (Gray, Kouhy and Lavers, 1995). This theory asserts that companies have a social responsibility that requires them to consider the interests of all parties affected by their actions.

According to legitimacy theory (Dowling and Pfeffer, 1975; Patten, 2002), by diffusing environmental information, the company makes itself look lawful in the impressions of public and this alleviates public pressure on the company.

In regard to the third theory, institutional theory examines the impact of environment on companies' decisions and their expectations; it is recognized that firms' environments possess wealth that managers want.

Many studies have utilized (Gray *et al.*, 1995; Laksmana and Yang, 2009; Cong and Freedman, 2011) these theories to explain the role of corporate citizenship and corporate environmental performance in determining earnings attributes (such as income smoothing) of US companies.

In the same context, Yip *et al.* (2011) find, in two US industries (one with high political visibility and one with low political visibility), a negative relationship between CSR reporting and earnings management in the oil and gas industry and a positive relationship in the food industry. They identify the motivation of ethical concern in this finding.

Studies interested by effects of environmental occurrence, are unanimous that the quantity of environmental disclosures has been found to increase following the publication of negative environmental events such as spills and disasters (Gray *et al.*, 1995; Patten, 2002; Freedman and Patten, 2004).

The studies cited above display how environmental reporting may affect earnings quality (such as earnings management, accruals quality etc.). In our research we examine whether the ENVD is related to income smoothing as a proxy of earnings quality. Thus, we expect that businesses, which communicate more information about the effect of their activities on the environment and community, have more stable earnings growth and less downside volatility, and therefore, more desirable earnings qualities than others companies.

Based on the above we hypothesize:

Hypothesis: Environmental reporting is negatively associated with income smoothing.

Control variables effect

The size effect (SIZE). Moses (1987), Tucker and Zarowin (2006) argue that larger firms may have greater motivation to smooth income rather than smaller firms; this is because larger firms are subject to greater inspection from the government as well as the public. Burgstahler and Dichev (1997) provide evidence that small firms are managing earnings more aggressively than large firms are to avoid reporting earnings losses. Conversely, Ashari *et al.* (1994), obtain non significant relationship between the smoothing practices and the firm size. A more recent finding by Michelson, Jordan-Wagner and Wootton (2000) found that smoother companies are larger in size than non-smoothing companies.

The industry effect (INDT). The differences within industries may affect income smoothness ability of the companies and their incentives to smooth earnings (Atik, 2009). Therefore the association between income smoothing behavior of the sample companies and the industry (INDST) they activate in is looked for.

The audit quality effect (AUDQ). We choose audit quality as a control variable because of the importance accorded by literature to Big 41 auditors. In addition, some studies (Francis and Wang 2008; Francis and Yu 2009) argue that Big 4 auditors are more sensitive to the legal liability changes and adjust their behavior to the changes consequently, but non-Big 4 auditors are less inclined to the legal liability. In the same vein, Dechow *et al.* (2010) argue that audit quality has an implication on the credibility of financial statements.

The effect of debt (DEBT). Ghosh and Moon (2010) use debts level in examining the relation between financing and earnings quality. They affirm that earnings quality first increases and then declines with increasing debt levels. However, Valipour and Moradbeygi (2011), find a significant and positive relationship between debt and earnings quality.

¹ The Big 5 became the Big 4 after the demise of Arthur Andersen in 2002. Big 4 are: PricewaterhouseCoopers; Deloitte Touche Tohmatsu; Ernst & Young; KPMG

Sales variability effect (SALES). Lev (1983) shows that a high level of sales enables companies to enjoy consistent results. For US firms, Chambers and Payne (2011) argue that sales volatility affect positively accruals quality. Laksmana and Yang (2009) and Francis *et al.* (2004) utilized the sales variability as innate determinants of earnings attributes. We illustrate all variables in Table 1.

Table1

Variables description

Variables	Type	Code
Income smoothing	dependent	SMTH
Environmental reporting	explanatory	ENVD
Firm size	control	SIZE
Audit quality	control	AUDQ
Industry	control	INDT
Debts level	control	DEBT
Sales variability	control	SALES

Research design

Sample selection and data

France is ranked fourth in the rate of publishing environmental reports (or sustainable development reports) by its largest companies (Capron, 2003, p.4). It was one of the first countries convinced of the importance of implementing an environmental measure within the organization (Capron and Gray, 2000).

This interest allocated to the extra-financial field is illustrated by a large number of rating agencies, the famous organization is “L’Association de Rating Environmental et Social des Entreprises” (ARSE²).

The current economic crisis has further increased discussion on social responsibility. France's commitment to CSR is characterized by its full participation in many international negotiations. This commitment is proven by recent legislation including the Law on New Economic Regulations and Law N° 2010-788 of 12 July 2010 related to a national commitment to the environment. Also, we note the promotion of responsible investment by various devices and improving transparency with a labels policy. Finally, initiatives by private actors demonstrate the collaboration of French society in corporate social responsibility.

Our data are gathered from Worldscope Data Base (for earnings information) and DataStream Data Base (for other variables). Our study focuses on a final sample³ of 128 non-financial companies as part of SBF 250 index during a period of 2005-2010.

We refer to companies' websites in order to download all annual reports and special reports (sustainable development report, environmental report ...).

Variables description

Dependent variable. We use the ratio of cash flow volatility to earnings volatility to measure earnings smoothness (SMTH). This measure captures the extent to which accrual accounting has smoothed out the underlying volatility of the firm's operations, which is consistent with prior research on income smoothing (e.g., Leuz, Nanda, and Wysocki 2003; Francis, LaFond, Ohlson, and Schipper 2004; Bowen, Rajgopal, and Venkatachalam 2008; McInnis, 2010). Cash flow (earnings) volatility is the standard deviation of cash flows from operations (earnings before extraordinary items) scaled by the

² For more information see www.arse-sa.com.

³ eliminations of some companies for the following reasons:
 -date of the financial year end is different from 31 December
 - unavailability of information's to be used for this paper

average total assets estimated at the annual level over the five years t-5 to t-1 with a minimum of four year data. Large values of SMTH indicate greater income smoothing.

Francis *et al.* (2004) use the same measurement as Leuz *et al.* (2003) study to measure income smoothing. Leuz *et al.* (2003) use smoothness as a proxy for earnings management. They suggest the following method to measure earnings smoothness:

$$SMTH = (\sigma(NI_{i,t}/Assets_{i,t})) / (\sigma(CFO_{i,t}/Assets_{i,t}))$$

Where:

σ_i = firm i standard deviation;

$NI_{i,t}$ = firm i, time t net income before extraordinary items;

$CFO_{i,t}$ = firm i, time t operating cash flows;

$Assets_{i,t}$ = firm i, time t average total assets.

Larger values of Smooth indicate low income smoothing, which is assumed to be a good earnings attribute.

Independent variable. For measuring environmental reporting, a review of past research shows several techniques. The majority of studies, in the field, have used content analysis method based on indexing and weighting scales (Wiseman, 1982; Patten, 2002).

According to Wiseman (1982) the simplest structure of content analysis techniques makes out the presence or absence of bring up of a particular event in a document (annual report for example).

Previous studies assessed environmental reporting mainly from annual reports and other regulatory filings such as 10Ks, many of which rely on a Wiseman (1982) based content analysis index to measure the extent of environmental reporting. The Wiseman index focuses on the financial consequences of corporate environmental activities and puts more weight on quantitative reporting. Using this measure, poor environmental performers may actually have higher disclosure cores than good performers because they have greater exposure and must discuss any material financial information in their regulatory filings such as annual reports and 10Ks.

In order to conduct a new measurement of the environmental reporting, we opt for a scale composed from 38 items (see Appendix). We are based on national and international initiatives related to environmental concern. In French level, we remark an emergence in legislation such as the role played by a new regulation introduced under Article 116 of the 15th May 2001 Act.

In other hand, the Global Reporting Initiative (Clarkson *et al.*, 2011), the Global Compact (for more information about the scope of the Global Compact see Rasche and Gilbert, 2012) and the ISO 26000 helped us to establish the items that compose the measurement scale.

Index items are empirically verified by Ben Rhouma (2008), Aerts, Cormier and Magnan (2008) and recently by Cormier *et al.* (2011).

The rating is based on a score from zero to three; three points are awarded for an item described in monetary or quantitative terms, two when an item is described specifically, one for an item discussed in general and zero for no information about the item (Sun, Salama, Hussainey and Habbash, 2010).

The valuation of items was made by two persons, and we then made a rapprochement between the two results.

We consider that the use of a coding scale to qualify a firm's ENVD is appropriate for two causes. First, it allows some incorporation of different sorts of information into a single figure that is comparable across firms in terms of importance. Second, while other disclosure studies rely on word counts to measure environmental reporting (e.g., Neu, Warsame and Pedwell, 1998; Williams and Ho Wern Pei, 1999), a qualitative scale allows for the researcher's judgment to be used in rating the value or quality of the disclosures made by a firm. While this process is more subjective, it guarantees that irrelevant or redundant generalities are not regarded as strategic social and environmental reporting (Aerts *et al.*, 2008).

Hypothesis verification and results

Descriptive statistics for variables

Table 2 summarizes the descriptive statistics of our variables; Panel A presents descriptive statistics for continuous variables and Panel B shows descriptive statistics for the dummy variable.

Table 2

Descriptive statistics for all variables

Panel A: Descriptive statistics for continuous variables					
Variable	Obs.	Mean	Std. Dev.	Min	Max
SMTH	750	0.894	0.630	0.005	2.435
ENVD	733	37.482	29.053	0.000	94.000
DEBT ^a	733	0.007	0.178	-0.052	4.838
SIZE	733	7.413	1.934	2.721	12.083
SALES ^a	733	1.074	1.323	0.007	24.254
Panel B: Descriptive Statistics for dummy variables					
Variables	Groups	Frequency/ companies	Frequency/ observations	Percent	Cumulative percent
AUDQ N=733	Non Big Four: 0	33	196	25.650	25.650
	Big Four: 1	95	568	74.350	100
INDT N=733	Sensitive ^b industries: 1	86	515	67,100	67,100
	Non sensitive industries: 0	42	253	32,900	100

^a original values (from data base) are divided by total assets of the previous year (Francis et al., 2004; Laksmana & Yang, 2009)

^b sensitivity to potential environmental legislation, usually categorized as the petroleum, chemical, metals, and paper industries (Patten, 2002)

In our variable, the mean of the variable of interest SMTH is 0.905, this value is close to that found by studies of Francis *et al.* (2004) and Laksmana and Yang (2009). According to Francis *et al.* (2004), larger value of SMTH (i.e., less negative) imply less income smoothing. We note that ENVD mean is 37.482, compared to the maximum value possible that can be obtained (114)⁴. Despite the mandatory requirement of the environmental reporting of French listed companies, we note that the level of actual disclosure is very low. But, this average has increased progressively compared to what was found in studies before the advent of the French law about the new economic regulations of 2002; the thesis of Ben Rhouma (2008) shows three means of environmental reporting of 2001, 2002 and 2003, she obtains respectively 7.55, 18.51 and 26.17.

We explain this low level of reporting by the heterogeneity of our sample; it includes industries not affected by non-financial disclosure (technology, services industry ...).

For our firm's size (natural log of total assets = 7.413), is high, the mean value is close to than this attained by Hong and Andersen (2011), larger than found in the study of Dechow and Dichev (2002) and lower than obtained by Laksmana and Yang (2009). We tend to study large companies because the big companies have stable earnings and they are more experienced (Hong and Andersen, 2011).

⁴ (114) is calculated as: the maximum value accorded to an item multiplied by the total number of items, i.e., $3 \times 38 = 114$.

Relation between environmental reporting and income smoothing: empirical validation. This relationship will be analyzed by a regression in panel data. The following model encloses ENVD as an explanatory variable with some control variables to determine the level of income smoothing.

$$SMTH_{i,t} = \beta_0 + \beta_{1,t} ENVD + \beta_{2,t} SIZE + \beta_{3,t} DEBT + \beta_{4,t} AUDIT_Q + \beta_{5,t} INDT + \varepsilon_{i,t}$$

Pre-testing Model. Multicollinearity is a situation where two or more of the independent variables are highly correlated; therefore, it has damaging effects on the regression analysis results. Since the model employs more than one independent variable, it is of importance to check the existence of multicollinearity.

The high value of the variance inflation factor (VIF) is generally seen as indicative of severe multicollinearity. By referring to Table 3, we note that the VIF values of our variables are less than 2 and tolerance values are greater than 0.3. This indicates that the multicollinearity doesn't exist in the Model.

Table 3

Model Multicollinearity Test

Variables	VIF	Tolerance
ENVD	1.75	0.571
SIZE	1.67	0.599
INDT	1.26	0.793
AUDQ	1.15	0.869
SALES	1.14	0.879
DEBT	1.03	0.971
VIF mean 1.33		

Table 4 shows that our model suffer from a heteroskedasticity problem (a large chi-square would indicate that heteroskedasticity was present ($p > \chi^2 = 0.007$)). In the estimation of the Model, we will apply the White (1980) test in order to control for heteroskedasticity in the error terms.

Table 4

Heteroskedasticity test for the panel regression

Test	Statistic	df	p > Chi2
White's Test	45.49	25	0.007

Results and discussion

The explanatory power is significantly high (36.3%), compared to similar studies, this value is acceptable. In the similar context, the study of Francis *et al.* (2004) shows an R-squared less than 20% in all models. In addition, Sun *et al.* (2010) obtained an adjusted R² equal to 6.3 % and Peng (2011) found values of adjusted R² ranging between 5% and 17%.

Regarding the STATA output in Table 5, we conclude, from the regression results, that the relation between ENVD and SMTH is negative and significant (at 1% level). In the assumption that smaller (more negative) value of income smoothing suggest more favorable attribute (Francis *et al.*, 2004 and Laksmana and Yang, 2009), our results show that environmental reporting exert a significant effect on income smoothing, so, our hypothesis is confirmed. These findings align with those found by Laksmana and Yang (2009). For the other variables, INDT and SIZE have a positive and significant (at 1%) effect on SMTH. The reason comes, perhaps, from the pressures on these businesses, as large

companies may smooth earnings to reduce political costs, because they are closely monitored and more scrutinized than are small companies. Burgstahler & Dichev (1997) present another explanation; they said that it would be easier for large-sized companies to report positive changes in earnings than positive earnings, while small-sized companies may not have the same ability as large-sized counterparts in reporting positive earnings.

About the audit quality, it doesn't affect income smoothing ($p > t = 0.137$). This situation is explained by the low number of French companies which are controlled by big audit firms. In recent years, these companies accept to adopt (voluntary) social or environmental auditing (called societal audit). This procedure enhances the transparency and good governance, but compared to Anglo-Saxon companies, the French firms stay less efficient in this field. For this reason, we find a poor effect of audit quality on income smoothing.

We also found that the effect of industry sensitivity on income smoothing is significantly positive; this confirms that the effect of government control over certain industries is effective; otherwise the effect is part of the political costs incurred by these companies. Leuz *et al.* (2003) find that firms in jurisdictions with weak legal quality are more likely to engage in income smoothing.

Our results show a non significant effect ($p > t = 0.577$) of debts level on income smoothing; Francis *et al.* (2004) found that the firms with lower earnings quality have lower debt ratings.

Finally, we have obtained a negative effect (significant at 5%) of sales variability on income smoothing; in this context, Lev (1983) argues that companies with high sales enjoy constant earnings.

Table 5

The regression output for the relation between income smoothing and environmental reporting

variables	coeff.	Std.Err.	t	P> t	[95% Conf.	Interval]
ENVD	-0.328	0.027	-2.61	0.008	-0.016	0.093
SALES	-0.565	0.235	-2.36	0.018	-1.887	-0.420
DEBTS	0.196	0.352	0.56	0.577	-0.494	0.888
SIZE	0.023	0.007	3.35	0.001	0.415	1.565
AUDQ	0.037	0.025	1.49	0.137	-0.012	0.086
INDT	1.847	3.588	2.96	0.003	1.161	2.532
constant	0.882	0.179	1.93	0.000	0.530	1.233
N= 733	Adj-R ² = 0.363		F(6, 607) = 9.37		Prob > F = 0.000	

Conclusion

Findings

This paper attempts to extend empirical and theoretical knowledge and to add to current literature of earnings quality. It draws results based on a sample consisting of non-financial French companies listed in the Paris Stock Exchange SBF 250 index from the period 2005-2010.

Our paper contributes to the existent literature by studying both the use of the same sample and time-frame. Consequently, conclusions concern only French organizations without generalizing on an international context.

This work looks into the relationship between the level of environmental reporting and income smoothing. A score of disclosure was calculated for each company, we have used a content analysis of annual reports.

We find that firms in the SBF 250 publish good environmental information that positively affects the level of smoothness.

This was explained by the reason that socially responsible firms enjoy greater customer and employee loyalty and are less likely to have unexpected negative events; therefore, they are more likely to have stable earnings than their counterparts.

As a practical implication, our study may offer an actual image of the French firms in terms of social responsibility and environmental concern. These firms could be missing an opportunity to take advantage of high level of environmental reporting as a competitive tool allowing an image

improvement and an elevated notoriety. Moreover, this work adds evidence to the scarce empirical research in relation to non-financial area.

Limitations and Future Research

The work may suffer from some limitations, we will attempt to develop new environmental reporting index that focuses more on the aspects of reliability and constancy, and to build an updated index to new French regulations and laws.

A potential extension of this study is to investigate the underlying issues over a longer time period. A probable comparison between two periods, before and after International Financial Reporting Standards (IFRS) adoption, can be made.

References

- Ashari, N., Koh, H. C., Tan, S. L., & Wong, W. H. (1994). Factors affecting income smoothing among listed companies in Singapore. *Accounting and Business Research*, 24(96), 291-301.
- Aerts, W., Cormier, D., & Magnan, M. (2008). Corporate environmental disclosure, financial markets and the media: An international perspective. *Ecological Economics*, 64, 643-659.
- Albrecht, W. D., & Richardson, F. M. (1990). Income smoothing by economy sector. *Journal of Business Finance & Accounting*, (winter), 713-30.
- Atik, A. (2009). Detecting income-smoothing behaviors of Turkish listed companies through empirical tests using discretionary accounting changes. *Critical Perspectives on Accounting*, 20, 591-613.
- Barnea, A., Ronen, J., & Sadan, S. (1976). Classificatory smoothing of income with extraordinary items. *The Accounting Review*, 56(1), 110-122.
- Ben Rhouma, A. (2008). *Etude des déterminants de la divulgation environnementale et sociale des entreprises françaises*. Ph.D. thesis, University of Nice-Sophia Antipolis, 370 pages.
- Bessire, D., & Onnée, S. (2010). Assessing corporate social performance: Strategies of legitimization and conflicting ideologies. *Critical Perspectives on Accounting*, 21(6), 445-467.
- Bowen, R., Rajgopal, S., & Venkatachalam, M. (2008). Accounting discretion, corporate governance, and firm performance. *Contemporary Accounting Research*, 25, 310-405.
- Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, 24(1), 99-126.
- Campbell, D., & Slack, R. (2011). Environmental disclosure and environmental risk: Sceptical attitudes of UK sell-side bank analysts. *The British Accounting Review*, 43(1), 54-64.
- Capron, M., & Gray, R. (2000). Experimenting with Assessing Corporate Social Responsibility in France: An Exploratory Note on an Initiative by Social Economy Firms. *The European Accounting Review*, 9(1), 99-109.
- Capron, M. (2003). *L'économie éthique privée : La responsabilité des entreprises à l'épreuve de l'humanisation de la mondialisation*. Economie Ethique N°7, United Nations Educational, Scientific and Cultural Organization, Paris.
- Chalayer, S. (1994). Les incitations aux pratiques de lissage des résultats: une synthèse de la littérature. *Actes du 15ème Congrès de l'Association Française de Comptabilité*, 2, 851-865.
- Chalayer, S. (1995). La manipulation des accruals à des fins de lissage des résultats. *16th Conference of the French Association of Accounting*, 2, 1207-1222.
- Chambers, D., & Payne, I. (2011). Audit quality and accrual persistence: evidence from the pre- and post-Sarbanes-Oxley periods. *Managerial Auditing Journal*, 5(2), 437-456.
- Chiang, C. (2010). *Environmental matters in financial reports: current audit approach change?* A paper written for the Auckland Region Accounting Conference Manukau Institute of Technology, 16 pages.
- Cho, C. H. (2009). Legitimation strategies used in response to environmental disaster: a French case study of Total S.A.'s Erika and AZF incidents. *European Accounting Review*, 18(1), 33-62.
- Cho, C. H., Roberts, R. W., & Patten, D. M. (2010). The language of US corporate environmental disclosure. *Accounting, Organizations and Society*, 35(4), 431-443.

- Clarkson, M. P., Overell, B. M., & Chapple, L. (2011). Environmental reporting and its relation to corporate environmental performance. *ABACUS*, 47, 1, 27-60
- Coetzee, C. M., & van Staden, C. J. (2011). Disclosure responses to mining accidents: South African evidence. *Accounting Forum*, 35, 232-246.
- Cong, Y., & Freedman, M. (2011). Corporate governance and environmental performance and disclosures. *Advances in Accounting*, 27(2), 223-232.
- Cormier, D., Ledoux, M. J., & Magnan, M. (2011). The informational contribution of social and environmental disclosures for investors. *Management Decision*, 49(8), 1276-1304.
- Dechow, P., Ge, W., & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50, 44-401.
- Deegan, C., & Unerman, J. (2011). *Financial accounting theory*: European edition, Second Edition, McGraw Hill.
- Dowling, J., & Pfeffer, J. (1975). Organizational legitimacy: Social values and organizational behavior. *Pacific Sociological Review*, 18(1), 122-136.
- Dye, R. A. (1988). Earnings management in an overlapping generation's model. *Journal of Accounting Research*, 26(2), 195-235.
- Elijido-Ten, E. (2011). Media coverage and voluntary environmental disclosures: A developing country exploratory experiment. *Accounting Forum*, 35(3), 139-157.
- Fekrat, M. A., Inclan, C., & Petroni, D. (1996). Corporate environmental disclosures: competitive disclosure hypothesis using 1991 annual report data. *The International Journal of Accounting*, 31(2), 175-195.
- Francis, J., & Wang, D. (2008). The joint effect of investor protection and Big 4 audits on earnings quality around the world. *Contemporary Accounting Research*, 25(1), 157-191.
- Francis, J., LaFond, R., Olsson, P.M., & Schipper, K. (2004). Costs of equity and earnings attributes. *The Accounting Review*, 79(4), 967-1000.
- Francis, J.R., & Yu, M. (2009). The effect of big four office size on audit quality. *The Accounting Review*, 84(5), 1521-1552.
- Freedman, M., & Patten, D. M. (2004). Evidence on the pernicious effect of financial report environmental disclosure. *Accounting Forum*, 28(1), 27-41.
- Freedman, M., & Stagliano, A. J. (2008b). Environmental disclosures: electric utilities and Phase 2 of the Clean Air Act. *Critical Perspectives on Accounting*, 19(4), 466-486.
- Gamble, G O., Hsu, K., Jackson, C., & Tollerson, C. D. (1996). Environmental disclosures in annual reports: An international perspective. *The International Journal of Accounting*, 31(3), 293-331.
- Ghosh, A., & Moon, D. (2010). Corporate debt financing and earnings quality. *Journal of Business Finance and Accounting*, 37, 538-559.
- Gray, R., Kouhy, R., & Lavers, S. (1995). Corporate social and environmental reporting: a review of the literature and a longitudinal study of UK disclosure. *Accounting, Auditing & Accountability Journal*, 8, 47-77.
- Hasseldine, J., Salama, A. I., & Toms, J. S. (2005). Quantity versus quality: the impact of environmental disclosures on the reputations of UK Plcs. *The British Accounting Review*, 37(2), 231-248.
- Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13(4), 365-83.
- Hong, Y., & Andersen, M. L. (2011). The relationship between corporate social responsibility and earnings management: an exploratory study. *Journal of Business Ethics*, 104, 461-471.
- Jeanjean, T. (2001). Incitations et contraintes à la gestion du résultat. *Comptabilité-Contrôle-Audit*, 7(2), 62-76.
- Laksmana, I., & Yang, Y. W. (2009). Corporate citizenship and earnings attributes. *Advances in International Accounting*, 25, 40-48.
- Leuz, C., Nanda, D., & Wysocki, P. (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics*, 69, 505-527.
- Lev, B. (1983). Some Economic Determinants of Time-Series Properties of Earnings. *Journal of Accounting and Economics*, 5, 31-48.

- McInnis, J. (2010). Earnings smoothness, average returns, and implied cost of equity capital. *The Accounting Review*, 85, 315-341.
- Michelson, S. E., Jordan-Wagner, J., & Wootton, C. W. (2000). The relationship between the smoothing of reported income and risk-adjusted returns. *Journal of Economics and Finance*, 24(2), 141-159.
- Moses, O. D. (1987). Income smoothing and incentives: empirical tests using accounting changes. *The Accounting Review*, (April), 358-77.
- Neu, D., Warsame, H., & Pedwell, K. (1998). Managing public impressions: environmental disclosures in annual reports. *Accounting, Organizations and Society*, 23, 265-282.
- Patten, D.M. (2002). The relation between environmental performance and environmental disclosure: a research note. *Accounting, Organizations and Society*, 27, 763-773.
- Peng, E. Y. (2011). Accruals quality and the incentive contracting role of earnings. *Journal of Accounting Public Policy*, 30, 460-480.
- Rasche, A., & Gilbert, D. U. (2012). Institutionalizing global governance: the role of the United Nations Global Compact. *Business Ethics: A European Review*, 21, 100-114.
- Stolowy, H., & Breton, G. (2003). La gestion des données comptables : une revue de la littérature. *Comptabilité-Contrôle-Audit*, 9(1), 125-152.
- Sun, N., Salama, A., Hussainey, K., & Habbash, M. (2010). Corporate environmental disclosure, corporate governance and earnings management. *Managerial Auditing Journal*, 25(7), 679-700.
- Tucker, J. W., & Zarowin P. A. (2006). Does income smoothing improve earnings informativeness? *The Accounting Review*, 81(1), 251-270.
- Williams, S. M., & Ho Wern Pei, C. A. (2009). Corporate social disclosures by listed companies on their web sites: an international comparison. *The International Journal of Accounting*, 34, 389-419.
- Wiseman, J. (1982). An evaluation of environmental disclosures made in corporate annual reports. *Accounting, Organizations and Society*, 4(1/2), 123-133.
- Yip, E., Van Staden, C., & Cahan, S. (2011). Corporate social responsibility reporting and earnings management: the role of political costs. *Australasian Accounting Business and Finance Journal*, 5, 17-34.

Appendix

Environmental disclosure items
• Investments • Operation costs • Future investments • Future operating costs • Financing for investments • Environmental debts • Risk provisions • Risk litigation • Provision for future expenditures
Laws and regulations conformity
• Litigation, actual and potential • Fines • Orders to conform • Corrective action • Incidents • Future legislation and regulations
Pollution abatement
• Emission of pollutants Discharges

- Waste management
- Installation and process controls
- Compliance status of facilities
- Noise and odors

Sustainable development

- Natural resource conservation
- Recycling
- Life cycle information

Land remediation and contamination

- Sites
- Efforts of remediation
- Potential liability- remediation
- Implicit liability
- Spills (number, nature, efforts of reduction)

Environmental management

- Environmental policies or company concern for the environment
- Environmental management system
- Environmental auditing
- Goals and targets
- Awards
- Department, group, service affected to the environment
- ISO 14000
- Involvement of the firm in the development of environmental standards
- Involvement in environmental organizations (e.g. industry committees)
- Joint projects with other firms providing environmental management services