Analysing the Environmental Content of Financial Analyst Reports by developing an ESG Framework that incorporates Business Opportunities and the Product Perspectives

Pontus Cerin[1, 2]

1) Unit of Accounting and Finance, Umeå School of Business
Umeå, Sweden
2) Unit of Economics, KTH Royal Institute of Technology
Stockholm, Sweden

SIRP WP 10-04

Sustainable Investment and Corporate Governance Working Papers,

Sustainable Investment Research Platform

FUNDED BY MISTRA sirp.se Sustainable Investment Research Platform

Analysing the Environmental Content of Financial Analyst Reports by developing an ESG Framework that incorporates Business Opportunities and the Product Perspectives

Pontus Cerin[1, 2]

1) Unit of Accounting and Finance, Umeå School of Business
Umeå, Sweden
2) Unit of Economics, KTH Royal Institute of Technology
Stockholm, Sweden

Abstract

Unlike most previous research that merely looks at the perceptions of analysts, this report examines the environmental information financial analysts actually use in their analyst reports. Out of almost 4,500 analyst reports about 36 percent contain environmental information, varying between 3 to 79 percent depending on industry sector where, in general, analyst reports in sectors with more severe environmental aspects to a larger degree contain environmental information. The type of environmental information that the analysts foremost focus on in their reports are on how firms' products and product portfolios are adopted to *Environmental regulations facing customers/markets*, *Customer demands* and *Eco-Efficiency*. This product perspective is strongly related to discussions of business opportunities of the firm. In fact, a good 77 % of the financial analyst reports containing environmental information dealt with opportunities linked to environmental aspects. To a lower extent, financial analysts write about company specific risk issues like emissions and litigation. The financial analyst reports, furthermore, practically lacks environmental preparedness aspects – like environmental strategies, policies, management systems, reporting and auditing – that are core issues of the ethical and SRI analyses. The financial analysts, hence, focus on different environmental aspects than the ethically specialised analysts. For analysing the environmental content in the analyst reports in this study an ESG framework was developed that, unlike previous research, also detects the environmental performance in the product dimension.

Keywords: Financial Analyst Reports, ESG Framework, Environmental Information, Responsible Investments, Business Opportunities, Product Perspectives

Abstract

Unlike most previous research that merely looks at the perceptions of analysts, this report examines the environmental information financial analysts actually use in their analyst reports. Out of almost 4,500 analyst reports about 36 percent contain environmental information, varying between 3 to 79 percent depending on industry sector where, in general, analyst reports in sectors with more severe environmental aspects to a larger degree contain environmental information. The type of environmental information that the analysts foremost focus on in their reports are on how firms' products and product portfolios are adopted to *Environmental regulations facing customers/markets*, *Customer demands* and *Eco-Efficiency*. This product perspective is strongly related to discussions of business opportunities of the firm. In fact, a good 77 % of the financial analyst reports containing environmental information dealt with opportunities linked to environmental aspects. To a lower extent, financial analysts write about company specific risk issues like emissions and litigation. The financial analyst reports, furthermore, practically lacks environmental preparedness aspects – like environmental strategies, policies, management systems, reporting and auditing – that are core issues of the ethical and SRI analyses. The financial analysts, hence, focus on different environmental aspects than the ethically specialised analysts. For analysing the environmental content in the analyst reports in this study an ESG framework was developed that, unlike previous research, also detects the environmental performance in the product dimension.

1 Introduction

The mainstream financial community, in general, the mainstream financial analysts, more specifically, are oftentimes in literature seen reluctant towards corporate issues like corporate handling of environmental and social aspects. This report investigates the actual inclusion of environmental aspects into the financial analyst reports in order to detect which information on extra financial aspects that is actually used by mainstream actors in the investment value chain. Furthermore, this report investigates the value relevance of corporate environmental and social aspects to firm financial performances

The aim of this report on extra financial analysis is to reveal to what extent and how the mainstream financial analysts incorporate environmental aspects into their financial analyst reports dedicated to the investors and fund managers. This information is analysed by applying and further developing a multi-item framework that was created by Cormier and Magnan (1999; 2003) for analysing the environmental information in corporate environmental reports. In this study the framework is developed to distinguish between preparedness, company and product related environmental information as well as to encompass social and corporate governance information.

2 Developing an ESG Framework for Analysing the Extra-Financial aspects in Financial Analysts' Reports

In this part of the research project, the focus in on the multi-item analyse framework that enables the exploration of what environmental information is included in financial analyst reports by the analysts in the financial industry to retrieve an understanding of what information these analysts actually use and consider in their valuation reports. The framework for retrieving how analysts in the financial community use and consider environmental, in particular, and corporate responsibility information, in general, this part of the research project is applying the framework for a company's voluntary environmental reporting strategy developed by Cormier and Magnan (1999), and later adjusted as a multi-item instrument for analysis of environmental reports (Cormier and Magnan, 2003).

Here, in this study, their framework is extended to structure the content analysis of financial analysts' reports with respect to environmental information. The framework developed below is, however, designed to encompass the structure for a content analysis of not only environmental, but also social and corporate governance issues as well.

2.1 In general

Since evidence exists that financial analysts buy and sell recommendations these reports ought to influence the actions of the portfolio managers. Research indicates that these recommendations subsequently affect the actions taken by portfolio managers and, thereby, the stock market and then ultimately the cost of capital of firms (cf. Demirakos et al., 2004; von Nandelstadh, 2003). These reports as well as the analysts producing them constitute a linchpin in the investment value chain when mitigating the information asymmetries between the firm managers and those investing in them.

Research looking into socially responsible investments (SRI) has often dealt with, or tried to deal with, the value relevance of environmental, social and corporate governance information, on the one side, and, on the other, the profitability and premium stock market prices of firms (e.g. Cerin and Dobers, 2001a; 2008; Halme and Niskanen, 2001; Konar and Cohen, 2001, Derwall *et al.*, 2004; Hassel *et al.*, 2005; Nilsson *et al.*, 2008). Similarly, the Swedish Society for Financial Analysts (SFF) have made recommendations for their members to incorporate environmental aspects into their assessments by pressing the importance of a company's of environmental concerns and performance for estimating the financial feat.

The Analyst Society's recommendation, Environmental Information for Financial Analysts, statues: "For an increasing number of firms, a positive environmental profile has become an important element in their marketing strategy of the firm, and a lack of such a profile constitutes a risk factor" (SFF, 2000, p. 58). More importantly, the society suggests that "Environmental factors will increasingly influence the future cash flows of firms in both a positive and negative way. Equity valuation, credit analysis, and other economic decisions that involve financial analyses are based on forecasts of future earnings or cash flows. These forecasts are influenced by or complemented with sensitivity analysis and risk estimation. The opinion of the Society is that such estimation will be increasingly determined by environmental factors." (SFF, 2000, p. 58).

Recently, the Swedish Society for Financial Analysts went even further, developing their *'Recommendations on Corporate Responsibility'* to express the pivotal role environmental issues may have in developing products that meet the demands of concerned and environmentally regulated customers, but also as jeopardising the sole existence of the company itself if not having the systems for environmental and social aspects in place within the own organisation or upstream (SFF, 2008).

2.2 Interview or content based analysis of financial analysts and environmental aspects

Some studies have been carried out studying actors' perceptions on the importance of environmental and social information – applying a responsibility or a sustainability perspective. Corporate environmental and sustainability managers have been interviewed about the relevance of this information for the company. Too often these studies are satisfied by just obtaining the view of the sustainability manager or the ethical analyst which, of course, is somewhat erroneous if ones believes this reflects the true identity and real actions of the company. Similar asymmetries may arise between the picture retrieved by the researcher if the information gathered is solely based on the views of the ethical analyst and not complemented by the views of the so called "mainstream analyst". For more on this critique on how researchers too often tend to view the organisation assessed as a black box where actors have similar beliefs and act similarly go to Cerin (2005) or Swanström and Cerin (2006).

Orens and Lybaert (2007) have statistically analysed the financial analysts' use of non-financial information compared to the information in corporate annual reports by utilising two different models: *One*, to examine the content of financial analyst reports , *two*, to survey the analysts with a questionnaire. The non-financial issues dealt with in the study were not predominantly environmental or of a social responsibility character, but *forward-looking information*, *information about management and shareholders*, *background information about the company* as well as *intellectual capital information*. In general their assessment established that the content analysis method and the survey method did not differ significantly except for forward-looking information and internal-structure information. Here, the survey results showed a positive relationship between these information aspects to the analysts' forecast accuracy. The content analysis of the financial analysts' reports shows, however, no significant relationships between the use of forward-looking information and internal-structure information, to the analysts' forecast accuracy.

Obtaining the views of the mainstream actor may, furthermore, reflect the perceived political correct answer and not the answer that reflects the actions of the organisation as an attempt to protect the ongoing procedures, e.g. business as usual, by putting up a facade copying the image wanted or expected by society. There exists a whole field of theory on these adversaries that exists within organisations and that may face the actor wanting to retrieve an accurate picture from the outside and in, which is problematic not only for researcher but indeed for the principals trying to steer their companies towards their own aims. Actors in an organisation may decouple the information to the outside from their actions as means to avoid outside pressure (Meyer and Rowan, 1977) and managers that also adjust their reporting to their different superiors – i.e. decouple the information to the different superiors even to the degree that the reports may become conflicting – are the managers that succeed better within the studied organisation, according to Brignall and Modell (2000).

Furthermore, there exists an inherent risk that an organisation may adopt an *isomorphic* copying of other firms' environmental and sustainability reports, that is copying other firms' communication to stakeholders. This may enable the firm to conduct its business as usual which is in line with the critique from Rikhardsson and Welford's (1997) on the business community, for hijacking the environmentalism. Carrying out business as usual is to copy its own past behaviour in its present real actions and performance – *automorphism* (Schwartz, 1997; Czarniawska, 2002). In the case of discrepancy in reporting (image – cf. Brytting, 2002) and actions (identity – cf. Brytting, 2002) we see how an isomorphic de-coupling of image creation to stakeholders defends and encompasses an automorphic business as usual behaviour.

These detected gaps between image and identity (e.g. the actions of an organisations) do not have to results from a well-structured process, since environmental and sustainability information supplied by some companies in their reports is not always well thought through according to a study on the environmental reporting by Swedish banks and insurance companies where a large portion of the environmental managers did not know to whom they were reporting and sometimes not really why. This resulted in reports that were copying reports from companies that had by others been identified as forerunners and as a result the own report may get decoupled from real identity the financial actor (Björklund, 2006).

Interview and survey based research by Deegan and Rankin (1997), Mills et al. (2001) and Hunt and Grinnell (2004) indicate that the information in the financial statements is to some extent considered by financial analysts. A survey on financial analysts in the U.S. by Hunt and Grinnell (2004), however, shows a lack of knowledge about environmental reporting initiatives, and low perceived interest in environmental issues in the investment industry. Similarly, the holistic interview study by Swanström and Cerin (2006) illuminates the indeed low interest in environmental aspects among financial analysts and portfolio managers in the Nordic Countries, which in fact was the only stakeholder group of ABB that had so deficient knowledge of environmental aspects in industry that made it impossible for them to answer the questions put to them. All other stakeholder groups – encompassing a good 100 interviewees from suppliers, customers within ABB and academia – were well or rather well acquainted with industry environmental aspects and often very eager to discuss the topic. The mainstream analysts and portfolio approached, in general, showed a low interest of the topic to express it benevolently.

The lack of knowledge along with deficient interest among the analysts may, moreover, explain the Hunt and Grinnell (2004) survey's low response rate on 7.9 percent. A study by Fayers et al. (2000) in Australia identified only a small shift towards including environmental performance in investments and the results from Mills et al. (2001) interviews with investment professionals in Australia illuminates that they do not place the same emphasis on environmental concerns as other valuation factors.

These results illustrating the deficient knowledge on environmental aspects and the lack of interest in environmental issues among analysts contradicts some previous quantitative research that demonstrates the important link between the environment and equity. The society for analysts in Sweden (SFF) also seems to believe that members should be conscious of environmental issues in valuing companies. Little, if anything, is, however, known about the actual amount of environmental information dealt with in the financial analysis as well as in investment decision making.

Then, it is also important to acknowledge that there are different segments of financial analysts and to increase the understanding of what information the financial analysts regard important or what information they actually use for investment recommendations. A segmentation of the answers is,

thus, vital. An assessment on the aggregate analyst community is, hence, not providing the full understanding and tables comparing ESG analyst preferences to financial analyst, as in table 5 above, increases the possibilities for how to successfully address the analyst and the investment community on environmental aspects. Already in 1998 Pettersson and Earl, (1998) investigated the views of various analyst groups in London on environmental aspects. The results from their assessment can be clustered into three distinctive analyst clusters and the environmental areas of interest grouped into five as done by Cerin (2000). The General Fund Analysts expressed a preference towards financially linked data, finance data, while Ethical Fund Analysts prefer information regarding environmental performance and risk & compliance data. However, no clear results could be drawn from the cluster of Credit and Insurance Risk Analysts, but they appear to fancy finance data as well as risk & compliance data (Pettersson and Earl, 1998). No analyst cluster paid much attention to stakeholder involvement and environmental opportunities.

The purpose of this study, as stated in the Introduction Section above, on financial analyst reports is to analyze what environmental aspects the financial analysts actually take into account in their equity valuation reports. In contrast to the earlier interview and survey-based research – where analyst perception of the importance of environmental valuation process is analysed – a content analysis method is applied in this investigation on the actual use of environmental aspects in financial analyst reports. The framework for this study is based on the method applied by Cormier and Magnan (1999), on corporate voluntary environmental reporting, later on presented as a multi-item instrument for analysis of environmental reports (Cormier and Magnan, 2003). The framework has, thereafter, been applied to two financial analyst pre-studies looking into how North American and European analysts, when analysing the Oil and Chemical industries of North America and Europe, incorporate environmental aspects into their reports to the investors (cf. Nilsson *et al.*, 2008; cf. Nilsson, 2008).

2.3 Enhancing the importance of corporate reporting by illuminating financial analyst report content

Both Previts et al. (1994) and Roger and Grant (1997) maintain that content analysis of sell-side analyst reports reveals vital insights about the needs of the users of environmental reports which may, in turn, enhance the reporting practices of firms. This is truly vital information for the reporters of corporate non-financial information from inside-and-out, since several studies – on non-financial information in corporate voluntary stand alone reports (i.e. not included in the annual report), – have shown that there is a lack in understanding who the retrievers of such information are and a discrepancy between the intended receivers and the actual readers of such reports (cf. Cerin, 2000; 2005; cf. Ljungdahl, 2000; cf. Massarsch and Enell, 2008). As summarised by Cerin (2006a) the intended audience is often staff, customers, investors and authorities while the actual readers are usually restricted to competitors' environmental staff, consultants (wanting to sell reporting aid, e.g. to competitors) and to student (of which a small portion may become future employees). Even more astonishing is the discoveries by Ljungdahl (1999) and Björklund (2006) that the corporate agents performing the communication of company environmental responsibilities – often the environmental, sustainability or CSR manager – do not always know why and to whom they are communicating to. This perceived total lack of understanding whom they are communicating to (and why) – which in Björklund's study also was a sign of giving up due to a lack of feed back from stakeholders – is fortunately not widespread, but is a vital sign of the

need for feedback to the corporate staff reporting from the inside to the outside world to adjust the message and information to the needs for the company important external stakeholders.

These obstacles in voluntary communicating non-financial or rather non-easily tangible aspects from the company to its external stakeholders were in the budding phase of environmental reports in the late 1990's an effect of isomorphism where firms tended to copy the communication of other firms that had been seen as superior by the community i.e. various environmental reporting awards. Many firms felt it was a necessity to create these reports on environmental aspects and commonly copies the success stories and, hence, endangering the linkage to the company's own activities in the own environmental reports. This phenomenon when the reports are copying the structure and content of other firms' and at times leaving out the own firm's specific conditions is labelled decoupling which could be done on purpose or not. In fact, even though environmental reporting in Ljungdahl's (1999) study was considered necessary among many agents few could explain why, and rather refer to that "Everybody else does it". The decoupling activities may also be a way for the firm to carry out business as usual and, thus, hijack the environmental agenda (cf. Rikhardsson and Welford, 1997).

Now, the development of voluntary reporting on corporate responsibility aspects, exceeding the legal requirements, have undergone some radical changes since the late 1990's into a more standardised form. One major player in this standardisation process is the Global Reporting Initiative (GRI) which has also developed supplements for many industries now in GRI's 3rd version of the Sustainability Reporting Guidelines. The international developments and spread of companies' corporate responsibility reporting globally from the mid-1990's up till now can be tracked and analysed in the KPMG international surveys presented every third year (KPMG, 1993; 1996; 1999; 2002; 2005; 2008).

Since KPMG started their international surveys on the reporting on environmental and social aspects, this voluntary corporate reporting trend in industry has steadily increased (KPMG, 2008) except for some countries that were on the responsibility reporting forefront in the mid 1990's like Norway and Sweden (cf. KPMG 2005; Cerin, 2006a). Voluntary responsibility reporting has augmented considerably in number of reports from being indeed a rare corporate activity in the early 1990's to become a mainstream activity among the world's largest corporations. For instance, the number of companies in the 250 top companies of the Fortune 500 exceeds today 50% (KPMG, 2008). The environmental reporting is highest in sectors with high environmental impacts, but some remarkable increases in reporting have occurred in finance and IT firms (Cerin, 2002b; 2006a; KPMG, 2008).

Even though initiatives like the protocol by GRI and the corporate commitment to UN Global Compact there is no guarantee that the financial sector will find the reports useful, as detected to be the case with financial professionals in Scandinavia (Swanström and Cerin, 2006). The investment professionals were – detected in that study – awaiting more stringent performance measurements to be provided by those initiatives and, as a consequence, requiring the companies to adopt performance oriented communication in the future. Studies like Cerin and Dobers (2001a) and Sjöström (2009) have detected that it is legitimacy building internally for corporate staff working with corporate responsibility issues when their work receive positive attention from sustainability indexes (by ending up high in the rankings) as well as from financial analysts (predominantly ethical ones) that demand company meetings concerning corporate handling of environmental and social responsibilities.

This research project that illuminates the financial analysts' use of environmental information in their analyst reports may, therefore, serve as an enabler of increased legitimacy for environmental

issues within corporations as well as larger adherence to corporate social responsibility units and their work internally within the firms – if it is found that financial analyst reports contain environmental information that is relevant to future firm values.

2.4 Retrieving the use of environmental information in the financial sector

As illuminated above the assessment on the essence of environmental information for financial analysts, a qualitative approach is adopted in this research project, looking at what information that is actually used in the financial analyst research reports on firms that then is studied by investors and portfolio managers. In doing so, the environmental information in analyst reports has to be found – in the reports that are selected for the study – and, thereafter categorised and finally scored in order to get a value on the quality the found environmental data provides. Below is a brief description on the methodology applied in this part of the study:

A quantitative approach

- How environmental information is used by financial analysts when valuing companies?

The method

- Research reports compiled by financial analysts from large investment banks are collected;
- Keywords are used for retrieving environmental information in financial analyst reports;
- A coding instrument, is used to classify the environmental performance information in the analysts' research reports by applying an ESG framework to categorise environmental information into environmental aspects and those into environmental items;
- The rating is done with a score from "zero to three". Three points are given if an item is described in monetary or quantitative terms, two points if an item is described specifically and one point if an item is described in general terms.

Nilsson *et al.* (2008) and Nilsson (2008) have applied the methodology to structure the content analysis of financial analysts' reports with respect to environmental information in his study on *"Exploring environmental information in sell side analysts' research reports"*. Cormier and Magnan's (2003) instrument were used to measure the environmental reporting level in annual and environmental reports from European firms. The framework of Cormier and Magnan (2003) has also been used earlier in Cormier and Magnan (2002) and Cormier *et al.* (2002). Furthermore, similar frameworks have e.g. been utilised by Al-Tuwairqi *et al.* (2004) and Barth *et al.* (1997).

The Cormier and Magnan (2003) framework was slightly altered to fit the means of the Nilsson *et al.* (2008) and Nilsson (2008) studies. The original framework for the coding of data within environmental reporting has six categories, with a total of 32 items according to the Nilsson studies. These six categories are: *expenditures and risk*, *laws and regulations*, *pollution abatement*, *land remediation and contamination*, *sustainable development* and *environmental management*. When examining the Cormier and Magnan (2003) framework for *Environmental reporting ratings* one can see that the framework consists of six categories that are divided into 32 items which are supplemented by eight sub-items.

So, Nilsson's studies examine these six categories with 32 items plus four of the sub-items of the Cormier and Magnan (2003) study, but now escalated to the item level. The other four sub-items are omitted in the Nilsson studies. One extra item, Environmental taxes, which did not exist in the Cormier and Magnan study is added under the category *Laws and regulations*. The Nilsson studies (Nilson *et al.* 2008; Nilsson, 2008), hence, contain 27 items divided into six categories. When

comparing the Nilsson studies to the original it is important to note that some items' denominations have been altered compared to the Cormier and Magnan (2003) study. For more information on the Cormier and Magnan (2003) framework consult the article in Journal of Accounting and Public Policy or turn to Appendix II in this report for a brief overview.

Since Nilsson's studies examine the level of environmental performance information in financial analysts' research reports from different investment banks two additional categories are introduced. It is common that these sell side analysts use value relevant information to motivate relative valuations. The two additional categories that have been added to the framework to better fit the equity valuation perspective are: *Competitive advantage/disadvantage* and *Political risks*. Under these two categories a total of six items has been added by Nilsson. The resulting framework (Nilsson *et al.* (2008); Nilsson, (2008) for content analysis, with 43 environmental items, is depictured in table 6 below:

Table 1: The framework for content analysis used by Nilsson et al. (2008) based on the framework of Cromier and Magman (2003).

Framework for environmental content analysis in Nilsson *et al.* (2008) based on Cormier and Magnan (2003)

Expenditures and risks	-Expenditures for pollution control equipment and facilities -Operating costs for pollution control equipment and facilities -Future estimates of expenditures for pollution control equipment and facilities -Financing for pollution control equipment or facilities -Environmental liabilities -Risk provision -Provision for charge
Laws and regulations	-Litigation -Fines -Orders to conform -Corrective actions -Incidents -Future legislation or regulation requirements -Environmental taxes
Pollution abatement	-Emission information -Water discharge information -Solid waste disposal information -Control, installations, facilities or processes described -Compliance status of facilities -Noise and odours
Sustainable development information	-Conservation of natural resources -Recycling -Life cycle information
Land remediation and contamination	-Sites -Efforts of remediation -Cost/potential liability -Spills -Liabilities
Environmental management	-Environmental policies -Environmental management system -Environmental auditing -Goals and targets -Awards -Department or office for pollution control -ISO 14001/EMAS -Participation in elaboration of environmental standards -Joint projects with other firms on environmental management
Competitive advantage/disadvantage	-Products -General -Market development -Relative valuation/Motivation of investment case
Political	-Risks/environmental opposition -Ecologically sensitive areas

2.5 Developing an ESG Framework for content analysis of Environmental, Social and Governance aspects

The framework applied in this research project to detect the use of environmental information in analyst reports is considerably further developed and refined compared to the ones utilized in Cormier and Magman (2003) and Nilsson (2008). The major differences are ***threefold***:

- ✓ ***Firstly***, the ESG framework encompasses not only environmental aspects but also social and governance issues as well.
- ✓ ***Secondly***, the environmental aspects has been divided into environmental preparedness, environmental performance and environmental impact categories, but importantly here is that environmental performance is in its turn separated into environmental performance of the firm as well as into the environmental performance of the company's products linked to the market requirements.
- ✓ ***Thirdly***, the aspects of the ESG framework are supplemented with an indicator to detect whether the environmental aspects (found in analyst reports) are dealing with business opportunities or business risks or both.

This research project has, as a consequence, due to the new ESG framework's division into the product and market perspective as well as due to the utilising of an indicator that focus on the business opportunity or risk character of analysed environmental information a large potential to capture related business opportunities linked to aspects outside the judicial borders of the assessed firm.

The environmental risk side information concerning company sites has, however, in previous frameworks and methodologies and also corporate voluntary reportig on ethical matters, almost been universally prevailing (cf.: Ingram and Frazier, 1980; Wiseman, 1982; Freedman and Wasley, 1990; Barth *et al.*, 1997; Bewley and Li, 2000; Cerin, 2002a; 2006a; Cormier and Magnan, 2002; 2003; Cormier *et al.*, 2002; Patten, 2002; Al-Tuwairqi *et al.*, 2004; Clarkson *et al.*, 2008; Nilsson *et al.*, 2008; Nilsson, 2008). Previously, there has also been deficient use of environmental performance that illuminates factual environmental resource use, toxicity, emissions, judicial, regulatory or financial aspect and not claiming environmental policies, management systems or disclosures to be environmental performance aspects. Environmental aspects related to the company itself and its sites within its judicial borders largely concerns various emissions, litigation and fines as well as legislation facing the judicial company, but this is far away from those environmental aspects that are associated with the products of the firm, its customers and associated cash flows that is so vital for estimating the future value for the firm as illustrated both theoretically and empirically by (Cerin and Dobers, 2001b; Cerin, 2002b; Cerin and Karlson, 2002; Cerin, 2006c; 2006d).

Instead, a focus concerning environmental aspects is introduced in the new ESG framework developed in this report that has moved towards performance related measurements on products and offerings affecting the customer as well as linkages to newer type of environmental regulation that extends the producer responsibility over the product life-cycle, i.e. the European Commission's (EC, 2001) more holistic approach, Green Paper on Integrated Product Policy (IPP), end of life treatment regulations like ALV, RoHS and the in the European Parliament newly passed regulation proposal by the commission to put CO_2 emission demands on each auto manufacturer that their newly registered cars must comply on average in order to avoid penalty payments, which becomes increasingly stringent over the next decades (cf. EC, 2001).

Again, an extensively extended version of the Cormier and Magnan (2003) framework is here, in this paper, developed and used to structure the content analysis of financial analyst reports' information on environmental aspects, but now also incorporating the value chains in which the analysed firms operate within and are dependent on. A firm may have its environmental preparedness (i.e. environmental policy and management systems) in place as well as superior environmental performance (i.e. emissions from plants), but the very crucial environmental aspects that influence the financial stand of the firm may herein from the sensitivity of its products and services in use or from production processes upstream as discussed by Cerin (2006c) when denominating Value Chain Stewardship. The efficiency and attractiveness of the products and services are likely to drive the cash flows of the firm – more so than the risks associated with waste on industry sites – as shown in the Ecological Economics business incentives and property rights analyses by Cerin and Karlson (2002) and the lion-part of financial analysts tend to utilise the discounted cash flow when valuing firms and their stocks by forecasting future cash flows and discounting them by the required rate of return (Demirakos et al., 2004).

The ESG – environmental, social and governance – framework is developed by utilising information categories in global initiatives and one ESG information provider on corporate issues linked to environmental, social and governance aspects. The foundation for the information categories is retrieved from GRI (Global Reporting Initiative), ECCE (the use of EFI - Extra Financial Information, ECCE, 2007), SA8000 (Social Accountability standard), OECD Principles of Corporate Governance, OHSAS 18001 (Occupational Health and Safety Assessment Series), UN Global Compact and GES Investment Services.

Since the authors have been closely involved in the development processes of several initiatives, serving as a foundation for developing this framework, and similar initiatives on environmental reporting there is a strong experience1 on what aspects that are relevant for estimating the relevance and materiality of environmental, social and governance information. A profound long experiences is attained by working with environmental aspects within industry, oftentimes blue-chip and large corporations, for well more than a decade as well as concurrently within the industry-research collaboration at Chalmers University of Technology – CPM. CPM is the Competence Centre for Environmental Assessment of Product and Material Systems. This product perspective has been introduced into the ESG Framework for estimating the sensitivity of firm due to future legislation as well as approaching resource scarcities. This introduced perspective is in the Framework grouped and labeled as Product/Market Specific Environmental Performance.

[1] The authors have been a part of several international initiatives that focus on reporting of corporate/organizational responsibility aspects: GRI Economic Indicators Measurement Working Group in London (2001), Green House Gas Protocol Initiative, the GHG accounting along the value chain module (2001-2002), ISO 14063 Environmental Communication secretariat in Stockholm (2001-2005), ISO 14064 Climate Change Working Group and member of the group that translated GRI G3 into Swedish (2008), among others.

Table 2: The framework for content analysis of this study based on the frameworks of Cromier and Magnan (2003), Nilsson (2008), Nilsson et al. (2008) GRI G3 (2007), ECCE (2007), SA 8000 (www.sa-intl.org), OECD Principles of Corporate Governance (www.oecd.org, 2004), OHSAS 18001 Occupational Health and Safety (www.bsigroup.co.uk/OHS).

ESG Framework

Environmental		
Environmental Preparedness	Environmental policies Environmental management system/organisation Environmental auditing Reporting environmental aspects Strategy Extent of the company certified to ISO 14001 series/EMAS Extent of employee environmental training Implementing environmental management along the value chain Managing environmental risks	Environmental Preparedness
Pollution abatement and energy saving	Air Emission Water discharge Solid waste disposal Control, installations, facilities or processes described Compliance status of facilities Noise and odours Site restoration Energy saving Greening of transports	Company Specific Environmental Performance
Laws and regulations, site specific	Litigation Fines Incidents Fulfilling Environmental laws and regulations Future legislation or regulation requirements Environmental taxes	
Laws and regulations, product /market specific	End of life treatment Producers Responsibility (ERP) Integrated Product Policy Environmental regulations facing customers/markets	Product/Market Spec. Env. Performance
Product performance	Customer demands Life Cycle Assessments (LCA) Design for the Environment (DfE) Eco-efficiency Recycling	
Environmental impact categories and targets	Conservation of natural resources Deforestation Biodiverstiy Climate change	Env. Impact Categ.
Social		
Employment practices	Intergration of HR resources into corporate strategy HR/Occupational health and safety policy Improvements of occupational health and safety conditions Management of working hours Training and development Diversity management and equal opportunity Accidents, incidents and deviation OHSAS 18001	
Human rights	Freedom of association and collective bargaining Child labour Forced labour Discrimination Indigenous rights Investment and procurement practices SA8000	
Community involvement	Activities for the community Societal impact of company's products and services Social and economic development Corruption Anti-competitive behaviour Public Policy	
Corporate Governance		
Corporate Governance	Responsibilities of the board Board composition Remuneration of directors and key executives Complience with local corporate code Investor relations Stakeholder roles in corporate governance Shareholder rights Equitable treatment of Shareholders Audit and internal controls Transparency	

3 Selecting the Industries, financial analyst reports and coding of environmental data content analysis

Since the ABB, Akzo Nobel and SCA constitute a part of this research project the natural choice is to select firms that are competing in the same segments. The difficult part, as it showed in the project can be to make a proper selection on which industry peers to choose and apply an industry standard that is well accepted within the financial community.

The Global Industry Classification Standard (GICS) is developed by MSCI – being a major supplier of global indices and benchmark-like products and services – together with Standard & Poor's (S&P) – which is a major financial data and investment services company and provider of global equity indices. GICS is used as a basis for S&P and MSCI financial market indexes. Each company within the indices is assigned to a sub-industry, and to a corresponding industry, industry group and sector, according to the definition of its principal business activity.

The aim of GICS is to enhance investment research and asset management process for financial professionals globally. The structure of the GICS is a result of abundant discussions with asset owners, portfolio managers and investment analysts worldwide to comply with their needs for a trustworthy and transparent standard for industry classification (MSCI Barra, 2009). A similar system like ICB (Industry Classification Benchmark), a classification structure maintained by Dow Jones Indexes and FTSE Group also exists which has well acceptance internationally too, but GICS constitutes the lynchpin in the financial community on industry classification. That is why it is adopted in this research project.

The GICS structure consists of 10 *Sectors*, 24 *Industry Groups*, 68 *Industries* and 154 *Sub-Industries* as of May 2, 2009. When the matching of firms to *Industries* was carried out to enable assessments of financial analyst reports the GICS consisted of the same number of *Sectors* and *Industry Groups* as in May 2009, but the number of *Industries* was 67 and the *Sub-Industries* numbered 147 as of November 5, 2007. The classification of 67 *Industries* has been applied to the research carried out in this report.

In Table 8 below the relation of the *Sectors*, *Industry Groups*, *Industries* and *Sub-Industries* are shown for the three Industries that we assess in this research project. The three *Industries* selected are the three industries to which the three companies participating in this research project belongs to according to the GICS. The three companies are ABB, Akzo Nobel and SCA and their industries within the GICS are Electrical Equipment, Chemicals and Paper & Forest Products, respectively.

Table 3: Relation of the *Sectors*, *Industry Groups*, *Industries* and *Sub-Industries.*

GICS (Global Industry Classification Standard)			
Sector	**Industry Group**	**Industry**	**Sub-Industry**
Materials	Materials	Chemicals	Commodity Chemicals, Diversified Chemicals, Fertilizers & Agricultural Chemicals, Industrial Gases, Speciality Chemicals
Materials	Materials	Paper & Forest Products	Forest Products, Paper Products
Industrials	Capital Goods	Electrical Equipment	Electrical Components & Equipment, Heavy Electrical Equipment

When we started to assess the environmental information content of 4,477 financial analyst research reports for 427 companies in this research project the division of firms into *Industries* was retrieved from one prominent ESG information provider to investment banks and portfolio managers. The financial information provider has a high market penetration in several markets and is a strong player in its geographical region. The data used for placing firms within there industries came from that ESG provider's data, but their groupings did unfortunately not quite follow the GICS for the first years that our study covered. The information provider to the financial community had adopted a mixture of *Industry Groups* and *Industries* where some companies of one *Industry* were placed correctly within its *Industry* while others were placed within its *Industry Group* and sometimes within someone else's *Industry Group*. The newer company GICS data of that information provider was, however, all correct. The only erroneous classification existed for their first year of data, which we unfortunately had used. When this was detected, the assessments that had been carried out so far had to be altered and the companies in the research project had to be assigned to their correct *Industry* belongings. The progress of this research project halted for a while and it had to be sorted out what industry classifications that actually were erroneous and considerably amount of work in the research project had to be redone.

3.1 Selecting financial analyst reports and keywords for fetching environmental data

There is an enormous amount of financial analyst reports that are being assessed in this research project, namely 4,477 reports, all in PDF format. These are retrieved by having access to the database Thomson Financial Investext at Umeå School of Business. Thomson Financial's Investext encompasses a collection of over 6 million investment research reports written by expert analysts at 450 of the top investment banks and consulting firms. Historic coverage, dating back to 1982, is available from more than 900 contributors. Reports are offered on a delayed basis, with an average embargo of 8 days. Investext includes research from 17 of the Wall Street Journal's top 20 investment banks, including several analyst organisations that are exclusively available through Thomson Financial. Top firms include Merrill Lynch, Morgan Stanley, Credit Suisse First Boston, UBS, Deutsche Bank and Bear Stearns

The reports for this research project were downloaded during late 2007. Short analyst reports contain only rather brief information that are unlikely to contain any lengthy depictions on environmental aspects. Similar to Nilsson *et al.* (2008), only 15 pages long analyst reports, or longer have, therefore, been selected for this research project. A search with a number of keywords for finding the content of environmental data in the selected analyst report has then been carried out. Since these financial analyst reports are in PDF format, the search function of Adobe Acrobat software is utilised making it possible to search in multiple documents simultaneously. The study utilises the same search keywords as Nilsson *et al.* (2008) and Nilsson (2008), except for one additional which is CSR (Corporate Sustainability Management). The Nilsson studies' key words are influenced by the content analysis framework applied in those studies, but also inspired by earlier studies within the field of environmental reporting and environmental performance measurement, like Salomone and Galluccio (2001), Hughes et al. (2001) and Ilinitch et al (1998). The search words of this study are displayed in Table 9.

When the Search keywords in the financial analyst reports are identified, then the document are opened and the paragraphs with the words looked for are copied onto a separate word-file where all analyst reports' environmental information is gathered, clustered and displayed per analyst report. These extracts of environmental information in the word-file are then assessed in order to

decide what environmental item it belongs to and what score it should be given. The actual searching through the PDF-files with search keywords was performed by four of the very top student obtaining the Masters degree in Accounting late spring at Umeå School of Business 2007 and constituted their first work assignments after the exam. The actual assessment and valuation of paragraphs that contain the detected search keyword was done by the researchers behind this research project.

Table 4: Search keywords applied to retrieve environmental information included in analyst reports.

Search keywords for retrieving environmental information in analyst reports		
1. Carbon	2. CSR	3. Eco-efficiency
4. Ecology	5. Ecological	6. EMAS
7. Emission	8. Environmental	9. ISO-14000 -14001
10. Natural resource	11. Noise	12. Odour
13. Pollution	14. Recycling	15. Spills
16. Sustainable	17. Toxic	18. Waste

There were 367 sell-side financial analysts research reports on the Chemicals industry, Electrical Equipment industry and the Paper & Forest Products produced by some 82 investment banks. The banks with most analyst reports containing environmental information came from, in descending order, Deutsche Bank, Citigroup, Credit Suisse, ABN AMRO, UBS Warburg, HSBC, UBS, Bear Stearns, Fulcrum Global Partners, ING, Ing Financial Markets, Salomon Smith Barney and Commerzbank Securities. The full list over investment banks producing analyst reports on the Chemicals, Electrical Equipment and Paper & Forest industries can be viewed in Appendix III.

3.2 Coding and rating of Environmental Data

In order to deal with the qualitative information on environmental issues in the financial analyst reports, that constitute the lion-part that has to be assessed in this research project, the information fetched needs to be transformed into quantitative data that can e.g. be dealt with for descriptive analyses. Therefore, the environmental content for each environmental item of the ESG-framework developed in this report will be turned into figures. For achieving this, a coding tool needs to be applied.

Following Cormier and Magnan (2003) – which also has been adopted by Nilsson (2008) and Nilsson *et al.* (2008) – the rating is carried out with a score ranging from zero to three for each environmental item, as follows:

- ✓**three** points is given if an item is described in monetary or quantitative terms,
- ✓**two** points if an item is described specifically,
- ✓**one** point if an item is described in general terms and,
- ✓**zero** points if the environmental item is not mentioned at all.

Since the maximum score on each item in the ESG-framework is three, the maximum score that is possible for the environmental information in one financial analyst report is 111 points which corresponds to score 3 for each item times 37 environmental items. If all items – covering environmental, social and governance aspects – of the ESG framework should be coded then the total possible maximum score would be 3 times 68 ESG items (37 environmental items + 21 social items + 10 governance items) totaling 204 points which is virtually impossible for any financial analyst report to acquire.

So, this environmental content score 111 is not really achievable, especially if considering that on average almost 64 % of the analyst reports in this study do not contain any environmental information at all when searching for environmental search keywords in financial analyst reports – see table 10 below. The score for those analyst reports without any environmental information is 0 out of 111. The reports that lack environmental information are – percentage wise – not at all evenly distributed along the different sectors. The percentage of financial analyst reports that do not contain environmental information range from almost 97% in the Semiconductor Equipment & Products to just more than 21% in the Water Utilities industry. Environmental information is, hence, almost non existent in some sectors while for some other sectors, the majority of the financial analyst reports contain environmental information and constitute there a mainstream phenomenon.

4 Results from analysing the environmental content of financial analyst reports

4.1 The amount of environmental information in financial analyst research reports

Table 10 below depicts the percentages of the browsed through analyst reports that contain environmental data that was detected by the environmental search keywords used. The process is described in section 3.1. When analysing the quality of environmental information and subsequent coding it to numerical values as described in section 3.2 it was detected that in fact some of the environmental search keywords found in the search did in fact not at all have anything to do with environmental aspects as to how firms affect our common milieu. So, when analysing the text paragraphs surrounding the detected search keywords it was found that when the word environment was found it could refer to how the environment is affecting one aspect of business or the product performance instead of the other way around, namely how firms and their offerings affect the environment – which was searched for in this research project.

Table 10 Percentage of Financial Analyst Reports per Industry that Contain Environmental Key Search Words

Percentage of Financial Analyst Reports that Contain Environmental Information per Industry

Semiconductor Equipment & Products	3,2%	Transportation Infrastructure	35,2%
Telecom	7,7%	***Totally for all industries***	***36,33%***
Trading Companies & Distributors	11,1%	**Paper & Forest Products**	**36,5%**
Airlines	12,5%	Industrial Conglomerates	38,7%
Pharmaceuticals	13,9%	Marine	40,5%
Air Freight & Logistics	18,8%	Oil & Gas	41,9%
Construction & Engineering	23,9%	Commercial Services & Supplies	46,9%
Aerospace & Defense	24,8%	Utilities	47,2%
Construction Materials	26,3%	**Chemicals**	**50,2%**
Industrial*	27,3%	Machinery	51,2%
Road & Rail	31,5%	Metals & Mining	58,6%
Building Products	32,0%	**Electrical Equipment**	**60,0%**
Containers & Packaging	34,6%	Water Utilities	78,6%

* Industrial is not an industry, but sector that in this table is excluding the industries of: Aerospace & Defence; Air Freight & Logistics; Airlines; Building Products; Commercial Services & Supplies; Construction & Engineering; Electrical Equipment; Industrial Conglomerates; Machinery; Marine; Road & Rail; Trading Companies & Distributors; Transportation Infrastructure.

In this research project all research reports exceeding 15 pages were searched for environmental search keywords as described in section 3.1. It is, however, not possible to tell the percentage of the financial research reports found to contain the searched for environmental search keywords that do not at all treat how firms and their offerings affect the environment, since the paragraphs surrounding the identified search keywords have only been analysed for the three sectors selected for this research project. For these three sectors, however, it is found after having analysed the paragraphs linked to the identified search keywords that 82 % of the financial analyst reports that contain environmental search keywords actually deal with environmental aspects dealing with how the firm and its offerings are affecting the common milieu. So, the question now is, what percentage of the financial analyst reports – covering the *Chemicals*, *Electrical Equipment* and *Paper and Forest Products* industries – that really contain environmental search keywords about how firms affect the environment?

Table 11 Percentages of Financial Analyst Reports that contain Environmental Information

	Financial Analyst Reports		
Industry	Percentage of reports that contain environmental search keyword	Percentage of reports with environmental keywords that also contain information related to how firms affect the environment	Percentage of reports that contain environmental information related to how firms affect the environment
Chemicals	50,2%	83,5%	41,9%
Paper & Forest Products	36,5%	69,4%	25,3%
Electrical Equipment	60,0%	88,5%	53,1%

4.2 The environmental aspects and items in financial analyst research reports

Firts the environmental search keywords are retrieved from the financial analyst reports and thereafter they are analysed regarding quality which is graded into numerical numbers ranging from 1 to 3 for each environmental item that exists in the ESG Framework which is developed in this research project. These coding of the quality of environmental information in the analyst reports into numerical values are shown further down. Below, in figure 1, the average environmental scores per financial analyst report per each of the three industry sectors analysed are displayed.

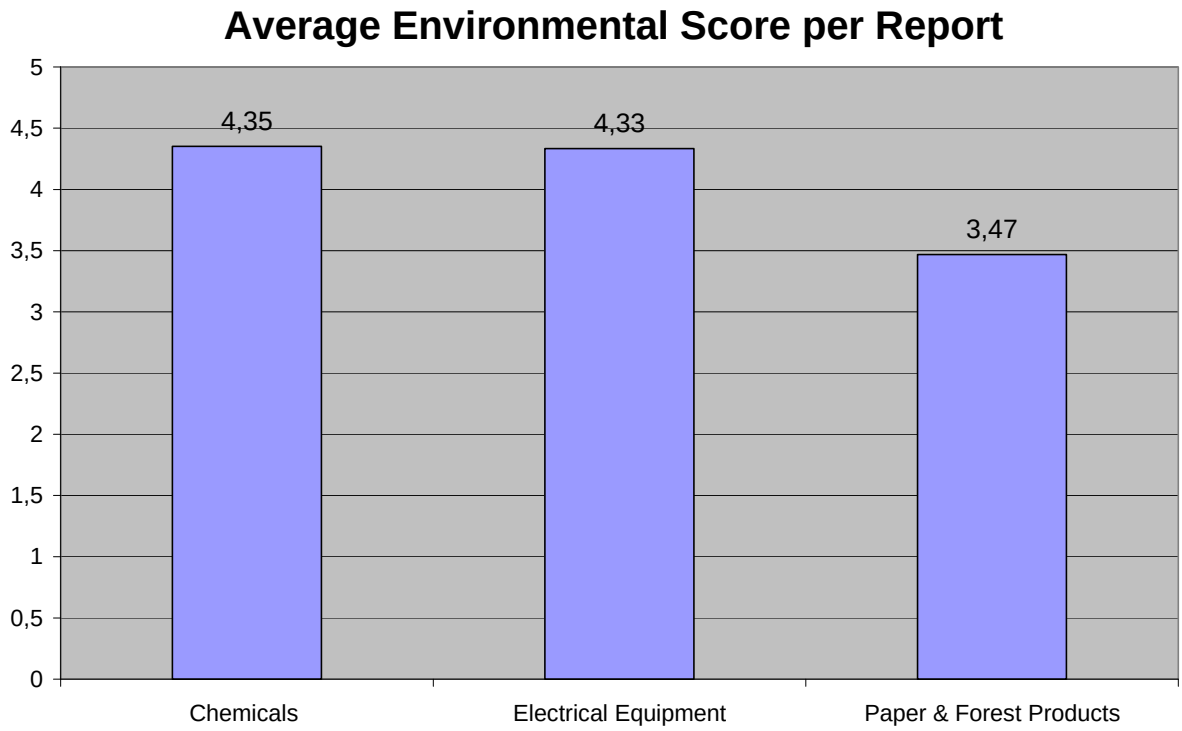


Figure 1: Average company environmental score per industry in financial analyst reports.

The mean environmental scores by industry and financial analyst report is in the Nilsson *et al.* (2008) and Nilsson (2008) articles shown for both A) the case where all financial analyst reports are included into the comparison, i.e. even those 65 % of the reports that do not contain environmental information at all as well as for B) the case where those analytical reports that do not contain any environmental information at all are omitted from the sample. The average score for environmental content in financial analyst reports per industry in the Nilsson studies, consequently, are: 1.40 for the A group and 4.10 for the B group. If looking at the two sectors examined in that study, the Chemical and Oil/Gas industries for the Panel B Group, that only encompasses analyst reports containing environmental information we see that the average environmental content of these sectors' financial analyst reports differ where the Chemical sector reports' have the average score 4.41 and the Oil/Gas 3.51.

As seen in figure 1 above the mean environmental scores by financial analyst reports is is broken down into three industries *Chemicals*, *Electrical Equipment* and *Paper & Forest Products*. The figures displayed concerns the environmental content – the number of environmental items covered and to

what degree or quality – merely of those financial analyst reports that do contain environmental information. The reason is due to the fact that the no reporters of environmental information are so plentiful, in average constituting some 64 % of all financial analyst reports for all industries. So, an average score of environmental information in analyst reports per industry would then heavily be reflecting the non-reporters of non-financial information, which is not desired here. The non-reporters of environmental information are, thus omitted from the assessment of environmental items covered and to what depth by financial analyst reports.

So, the average environmental information score for financial analyst reports are in the *Chemicals* sector 4.35, *Electrical Equipment* 4.33 and for *Paper & Forest Products* 3.47. The corresponding numbers for the two sectors of the Nilsson articles are *Chemical* 4.41 and *Oil/Gas* 3.51. The maximum total score that would be achievable for the financial analyst reports if all environmental items were discussed in quantitative terms (that is score 3 on each item) – would be the score 111 (37*3) for the analysed analyst reports in this study and in the Nilsson (2008) and Nilsson *et al.* (2008) papers 129 (43*3). The average environmental information per analyst report per industry compared to the total possible environmental score that an analyst report can achieve is, hence higher in this study than in the studies of Nilsson (2008) and Nilsson *et al.* (2008).

Figure 2 below illustrates the focus each environmental item receives in the financial analyst research reports. The environmental items are displayed in the ESG Framework in Table 7 above. The figure consists of 39 environmental items which are clustered into 4 environmental aspects. It is quite clear, when studying Figure 2 that there is a big difference in how much attention each item is given and how well each environmental they are dealt with in the analyst reports. To enhance the understanding of Figure 2 Table 12 illuminates the labels of each environmental item as well as grouping them into environmental aspects.

As seen in Figure 2 below the five environmental items most dealt with in the financial analyst research reports for the three industries – Chemicals, Electrical Equipment and Paper & Forest Products – are numbers 29, 30, 33, 39 and 23. The ones most dealt with 29, 30 and 33 belong to the Product/Market Specific Environmental Performance. Environmental item 39 belongs to the environmental aspect Environmental Impact Categories and finally number 23 belongs to the Company Specific Environmental Performance environmental aspect.

The environmentally related items that the financial analysts have dealt the most with in their analyst reports are items 29 and 30. These two deal with the customer and market perspectives, looking at regulations facing the customers as well as their demands which can be seen in Figure 2 in combination with Table 12. The foci in these items are, thus, on the products and offerings of the firm. To what extent can the product portfolio of the firm fulfil the needs of the customers' wishes or regulatory demands facing them? Items 29 and 30 are the items that the financial analysts in this study focus on the most in their reports are, thus, linked to future cash flow issues and the soundness of firms for issues such as the ability to pay lenders as well as cover payrolls.

Also item 33 is grouped with the Product/Market Specific Environmental Performance and deals with Eco-Efficiency which is also related to environmental performance facing the customers – but also the firm – as well as related costs for environmental issues or resource use and links back to the attractiveness of the products and inflow of cash to the firm.

Among the top five environmental items that the financial analyst reports deals with is the Toxicity and Health item, belonging to the Environmental Impact Category Aspect. The Company Specific Environmental Performance aspect is represented among the top five environmental items by the Future Legislation or Regulatory Demands item – number 23. Company related approaching

legislation may pose a financial risk for the company that then has to adapt to new roles for its operations.

Perhaps astoundingly, the financial analyst reports do not put any greater attention to the Environmental Preparedness aspect, according to the reports used in this study. This is contrary to the focus of the ethical analysts display in table 5 above. The only environmental item, within the Environmental Preparedness aspect that receives some attention within the financial analyst reports is Managing Environmental Risks. The others – Environmental Preparedness aspects seems to have been regarded as having little influence on future value of the firms and have, hence, been omitted from the lion part of the analyst reports.

Furthermore, there, is a lack of information from those items that deal with policy issues as well as management tools for products environmental issues in the Product/Market Specific Environmental Performance even though that aspect is of great concern in financial analyst reports when dealing with performances and regulation.

Concerning the presence of Environmental Impact Category aspects, see figure 2 and figure 3 below, it is clear that these are in general not much dealt with in the financial analyst reports, except for the environmental item Toxicity and Health which is one of the most well reported environmental items in the analyst reports. Another item that is dealt with in financial analyst reports to some extent is Conservation of natural resources / cost of scarcity, which is of course more important to some industries, e.g. those depending on biological resources as input to their production – than other industries might be.

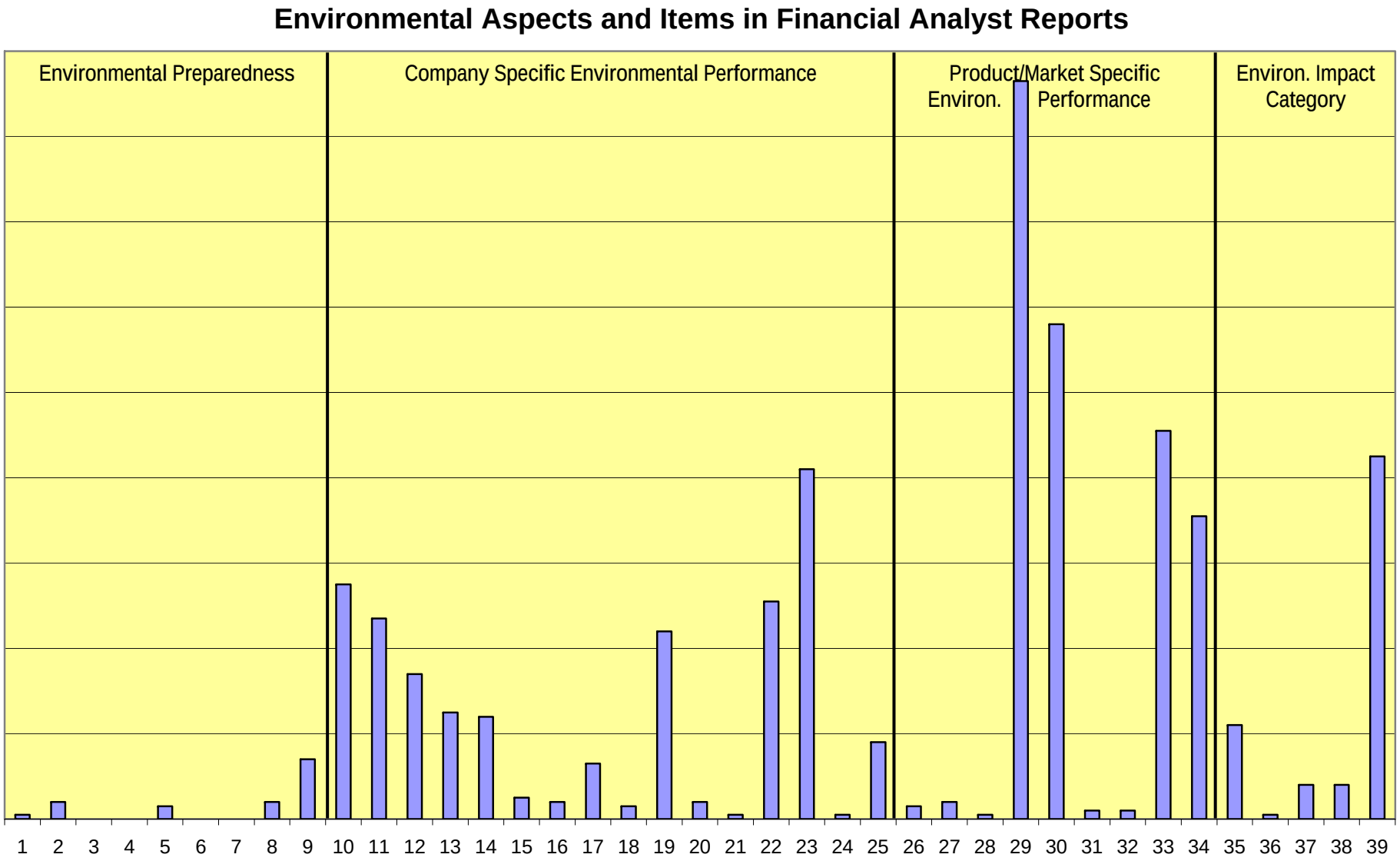


Figure 2: Distribution of company environmental items scores in financial analyst reports.

Table 12 Company environmental items scores of the ESG Framework used to categorise environmental information in financial analyst reports

	ENVIRONMENTAL ITEM	ENVIRONMENTAL ASPECT
1	Environmental policies	**Environmental Preparedness**
2	Environmental management system/organisation	
3	Environmental auditing	
4	Reporting environmental aspects	
5	Strategy	
6	Extent of the company certified to ISO 14001 series/EMAS	
7	Extent of employee environmental training	
8	Implementing environmental management along the value chain	
9	Managing environmental risks	
10	Air Emission	**Company Specific Environmental Performance**
11	Water discharge	
12	Solid waste disposal	
13	Control, installations, facilities or processes described	
14	Compliance status of facilities	
15	Noise and odours	
16	Site restoration	
17	Energy saving	
18	Greening of transports	
19	Litigation	
20	Fines	
21	Incidents	
22	Fulfilling Environmental laws and regulations	
23	Future legislation or regulation requirements	
24	Environmental taxes	
25	CO2 (eq.) emissions trading, carbon permits, credits, allowances	
26	End of life treatment	**Product / Market Specific Environmental Performance**
27	Producers Responsibility (ERP)	
28	Integrated Product Policy	
29	Environmental regulations facing customers/markets	
30	Customer demands	
31	Life Cycle Assessments (LCA)	
32	Design for the Environment (DfE)	
33	Eco-efficiency	
34	Recycling	
35	Conservation of natural resources / cost of scarcity	**Environmental Impact Category**
36	Deforestation	
37	Biodiversity / ecology	
38	Climate change / Global warming	
39	Toxicity and health	

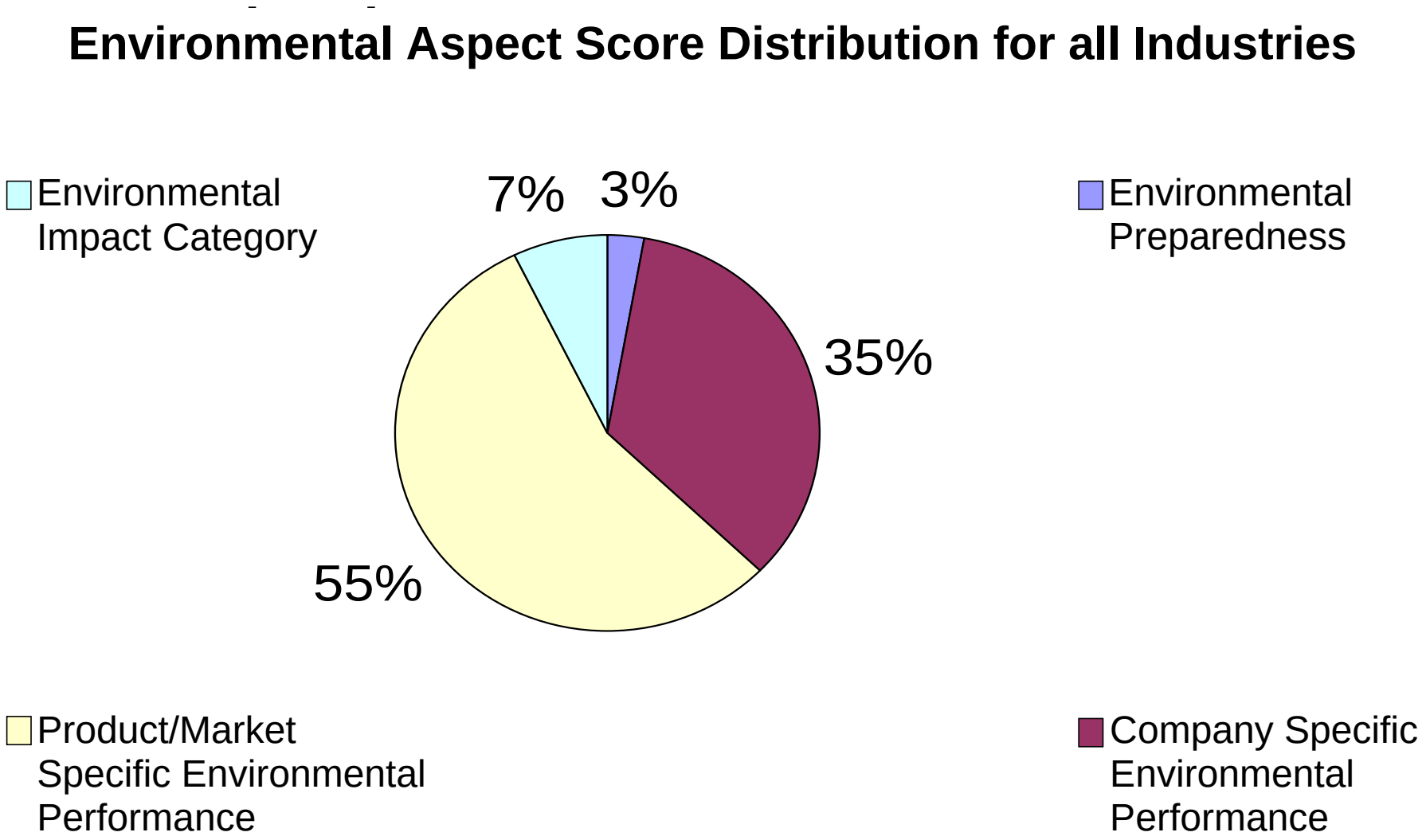


Figure 3 Distribution of company environmental aspect scores in financial analyst reports.

4.3 Industry and company distribution of environmental information in financial analyst research reports

As just mentioned in the end of Section 4.2 regarding the environmental item *Conservation of natural resources / cost of scarcity* (within the environmental aspect *Environmental Impact Category*) that it is dealt with differently by financial analyst reports, depending on which company and adhering industry the financial assessment cover.

In figure 4 below, it is displayed how differently environmental items are dealt with in financial analyst research reports depending on which industry the analysed company[2] belongs to. Analyst reports on firms from subsequent three industries – Chemicals, Electrical Equipment and Paper & Forest Products – are, hence, dealt with.

The average score per environmental item and per financial analyst report, displayed below (Figure 4), are furthermore clustered along their environmental aspects, displayed in the ESG framework (table 12) above, to indicate the focus towards *Environmental Preparedness*, *Company Specific Environmental Performance*, *Product/Market Specific Environmental Performance* and *Environmental Impact Category*. Further, in figure 5 and figure 6, the environmental information is displayed as environmental aspect score (clustered environmental items) distribution for industries in figure 5 and for companies in figure 6.

Environmental Preparedness aspect – Figure 5
If discussing the environmental items per cluster group, environmental aspects we see clearly that for all industries there is almost no information on items belonging to the *Environmental Preparedness* aspect present in the analyst reports. The maximum achievable score per item is 3 and the top disclosed item (average) has the score 0.12 and three other ones about half that score, but most items receive scores close to 0. Chemicals contains some information on *Implementing environmental management along the value chain* and reports concerning both, but to a even lesser extent, Chemicals and Forest & Paper Products have information on *Managing environmental risk*.

Company Specific Environmental Performance aspect – Figure 5
The *Company Specific Environmental Performance* aspect is a rather well represented environmental aspect in the financial analyst reports for all three industries of this study. The maximum achievable score per item is 3 and the top disclosed item (average) has the score 0.31, another one slightly below then followed by several items receiving scores between 0.18 to 0.25. In fact, no environmental item has totally been omitted from financial analyst reports. Reports on all three industries contain considerable information on *Future legislation or regulatory requirements*, *Fulfilling environmental laws and regulation* and Litigation *and liabilities*. Reports on Chemicals and Paper & forest products have all information on various emissions – *Air emission, Water discharge* and *Solid waste disposal*. The item *Site restoration* is disclosed in reports on Electrical Equipment industry and the item *Carbon (eq.) emissions trading and carbon permits, credits, allowances* is disclosed by the industries Electrical Equipment and Paper & Forest Products.

[2] *Analysed company*, refers to companies that are analysed in the financial analyst research reports and in this study the companies described in these analyst reports all belong to three selected industries.

Product/Market Specific Environmental Performance aspect – Figure 5
This aspect, *Product/Market Specific Environmental Performance*, is the most readily disclosed environmental aspect where some of the environmental items are very well disclosed compared to other environmental items of the applied ESG Framework of this study. The maximum achievable score per item is 3 and the top disclosed item (average) has the score 1.62 which is *Environmental regulations facing the customers/markets* in reports covering the Electrical Equipment industry and the second most covered item in reports on that industry is *Customer demands* – 1.33. For reports on the Forest & Paper Products *Recycling* is the most disclosed item with the score 1.4. Then, following these in the industries of Chemicals and Electrical Equipment *Eco-efficiency* is a highly disclosed environmental item, scoring 0.46 and 0.43 respectively. Items almost omitted in the financial analyst reports are *End-of-life treatment*, *Producer responsibility*, *Integrated product policy* and *Life cycle assessments (LCA).*

Environmental Impact Category aspect – Figure 5

Most of the items in the *Environmental Impact Category aspect* are not dealt with to any greater extent in the financial analyst reports except for one. The maximum achievable score per item is 3 and the top disclosed item (average) has the score 0.51. This top scoring item is *Toxicity and health* and is foremost dealt with in financial analyst reports covering the Chemicals industry. Analyst reports on the Forest & Paper Products industry scores 0.16 on the *Conservation of natural resources / cost of scarcity* item. Otherwise the items constituting the environmental category of impacts – i.e. *Deforestation, Biodiversity / Ecology and Climate change / Global warming* – are practically absent form the financial analyst reports.

Environmental Aspects in Financial Analyst Reports per Industry and Company

The distribution of environmental scores differs not only between the analyst reports of the three industries constituting this study, but dissimilarities also occur between the distribution of aspects in analyst reports of an industry an the reports covering the company that belongs to that industry. These variations are displayed below comparing the distribution of environmental aspects of three the industries Chemicals, Electrical Equipment and Paper & Forest Products to the three corporations Akzo Nobel, ABB and SCA, respectively.

The environmental aspect score distributions for those financial analyst reports that contain environmental information on the three industries and three firms of this study are best viewed in figures 5 and 6 below concerning the aspects and table 13 below concerning the items.

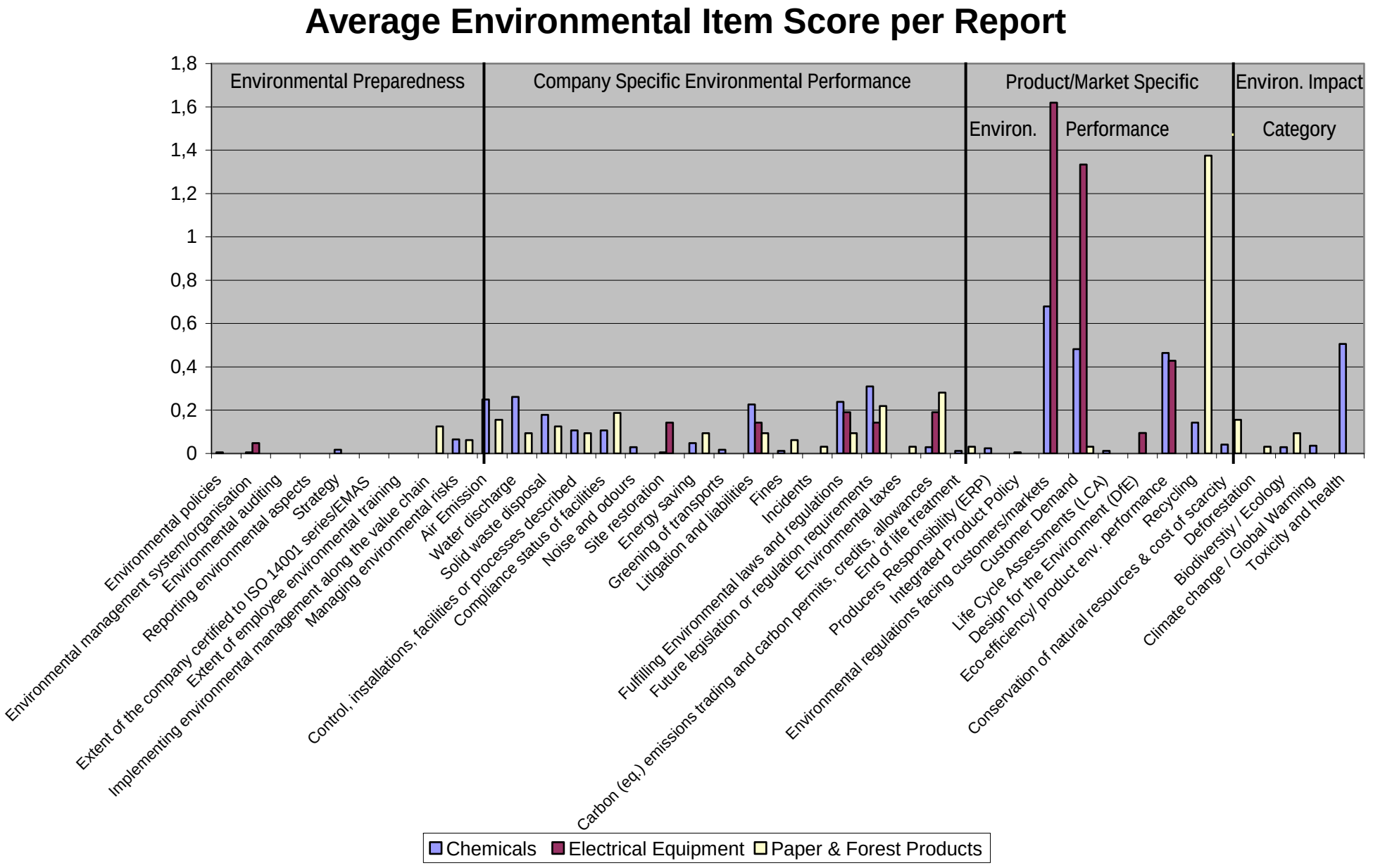


Figure 4 Average company environmental items scores per industry in financial analyst reports.

Comparing Chemicals Industry to Akzo Nobel

Chemicals Industry

Environmental Preparedness:

- ✓ Of the financial analyst research reports containing environmental information merely 2 percent deals with Environmental Preparedness aspects. The item most enclosed is Managing Environmental Risks.

Company Specific Environmental Performance

- ✓ 42 percent of the financial analyst reports that contain environmental information deals with the Company Specific Environmental Performance aspect. The items most enclosed are meeting current and future legislation requirements, litigation and liabilities, and various emissions from company sites.

Product/Market Specific Environmental Performance

- ✓ The Product/Market Specific Environmental Performance aspect is dealt with by 42 percent of the financial analyst reports that contain environmental information. The items most enclosed are environmental legislation facing customers and customer demands items followed by the item on eco-efficiency and product performance.

Environmental Impact Category

- ✓ 14 percent of the financial analyst reposts containing environmental information deals with Environmental Impact Category. The most enclosed item is Toxicity and Health.

Akzo Nobel

Compared to its industry – Chemicals – the financial analyst reports on Akzo Nobel have a considerably higher focus on the Company Specific Environmental Performance aspect relatively the other environmental aspects. The Company Specific Environmental Performance constitutes 85% of total score of the environmental information disclosed in reports on Akzo Nobel. The analyst reports on Akzo Nobel contain somewhat lesser information on the Environmental Impact Category aspect compared to reports on its industry. The aspect Environmental Preparedness is totally absent in the reports on Akzo Nobel while the aspect is minimally treated in reports on the industry.

Comparing Electrical Equipment Industry to ABB

Electrical Equipment Industry

Environmental Preparedness:

- ✓ Of the financial analyst research reports containing environmental information merely 1 percent deals with Environmental Preparedness aspects. The item most enclosed is Environmental management system/organisation.

Company Specific Environmental Performance

- ✓ 19 percent of the financial analyst reports that contain environmental information deals with the Company Specific Environmental Performance aspect. The items most enclosed are meeting current and future legislation requirements, litigation, carbon emissions trading and control facilities.

Product/Market Specific Environmental Performance

- ✓ The Product/Market Specific Environmental Performance aspect is dealt with by 80 percent of the financial analyst reports that contain environmental information. The items most enclosed are Environmental legislation facing customers and Customer demands items followed by the item on Eco-efficiency and Design for the environment.

Environmental Impact Category

- ✓ No financial analyst reports containing environmental information deals with Environmental impact category.

ABB

Compared to its industry – Electrical Equipment – the financial analyst reports on ABB have a lesser degree of attention on the Product/Market Environmental Performance aspect relatively the other environmental aspects. The Product/Market Environmental Performance aspect in analyst reports on ABB is, however, by far the most covered environmental aspect and constitute 60% of the total score of the environmental information disclosed in reports on ABB. The analyst reports on ABB contain considerably more information on the Company Specific Environmental Performance aspect compared to its industry. The Environmental Preparedness aspect is almost absent from the analyst reports on ABB and the aspect Environmental Impact Category is omitted from the reports which is rather similar to the score of the analyst reports on the industry.

Comparing Paper & Forest Products to SCA

Paper & Forest Products Industry

Environmental Preparedness:

- ✓ Of the financial analyst research reports containing environmental information merely 5 percent deals with Environmental Preparedness aspects. The item most enclosed is Implementing environmental management along the value chain.

Company Specific Environmental Performance

- ✓ 46 percent of the financial analyst reports that contain environmental information deals with the Company Specific Environmental Performance aspect. The items most enclosed are carbon emissions trading, meeting current and future legislation requirements, Compliance status of facilities and control equipment, and various emissions from company sites.

Product/Market Specific Environmental Performance

- ✓ The Product/Market Specific Environmental Performance aspect is dealt with by 41 percent of the financial analyst reports that contain environmental information. The item most enclosed is Recycling, by far, then after considerable drop followed by the items Customer demands and End-of-life treatment.

Environmental Impact Category

- ✓ 8 percent of the financial analyst reposts containing environmental information deals with Environmental Impact Category. The most enclosed item is Conservation of natural Resources / cost of scarcity.

SCA

Compared to its industry – Paper & Forest Products – the financial analyst reports on SCA have a considerably higher focus on the Product/Market Specific Environmental Performance aspect relatively the other environmental aspects. The Product/Market Specific Environmental Performance constitutes 67% of total score of the environmental information disclosed in reports on Akzo Nobel. The analyst reports on SCA contain no information on the Environmental Impact Category aspect compared to reports on its industry (8%). The aspect Environmental Preparedness is totally absent in the reports on SCA too, while the aspect is to a low extent covered in reports on the industry (5%).

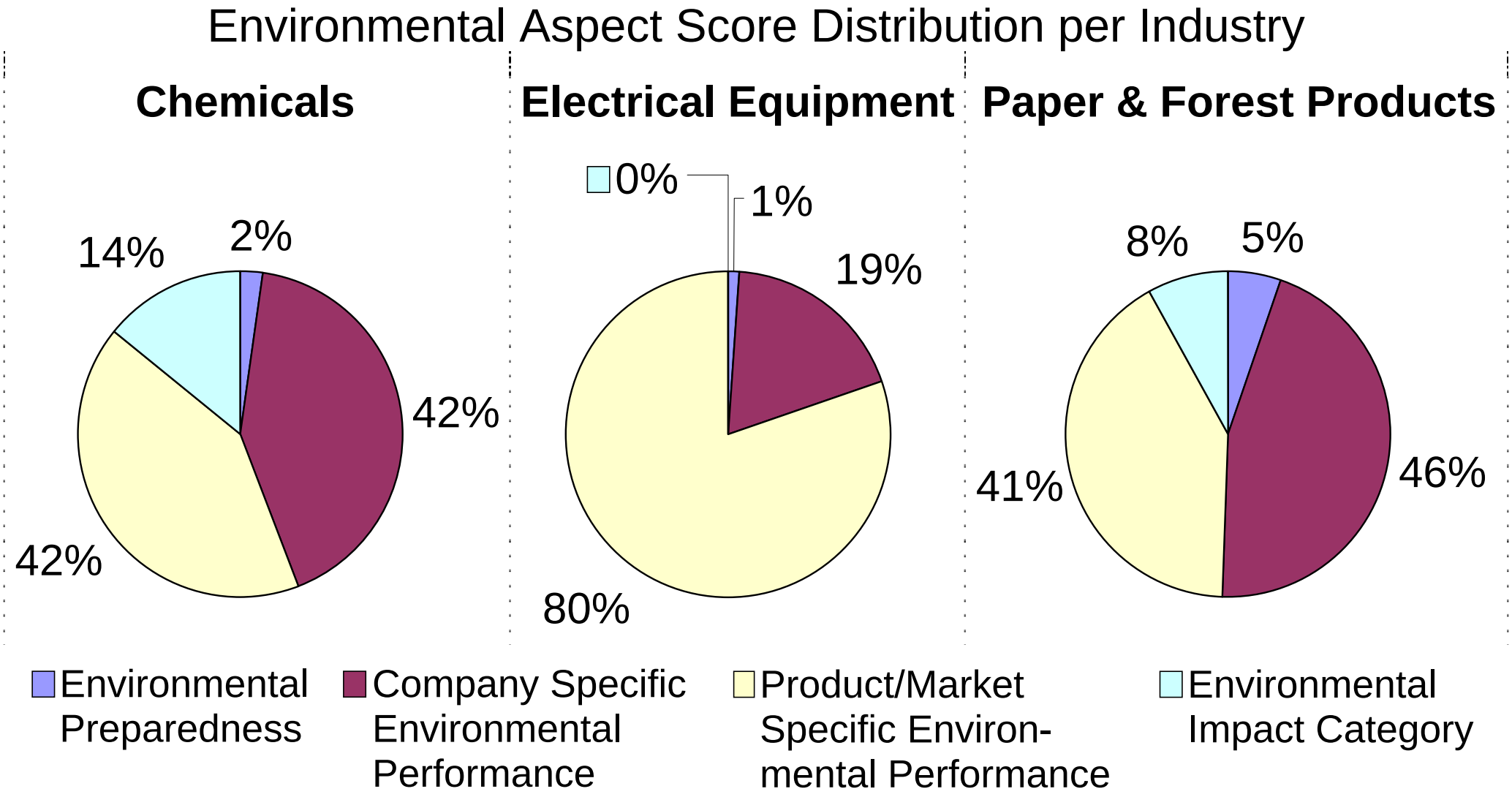


Figure 5 Distribution of company environmental aspect scores per industry in financial analyst reports.

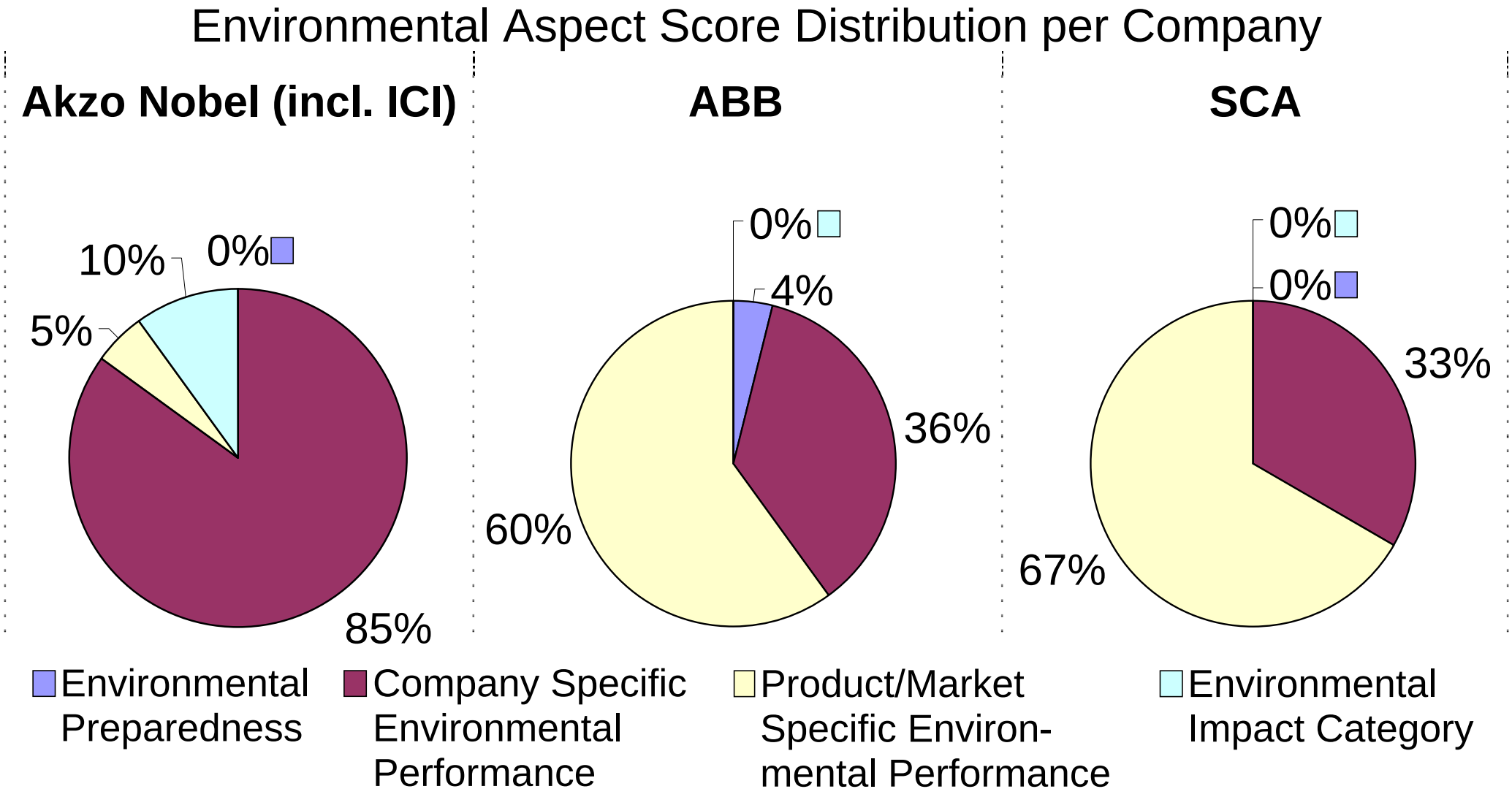


Figure 6: Distribution of company environmental aspect scores per firm – ABB, Akzo Nobel and SCA – in financial analyst reports.

Table 13 Average company environmental item scores per industry in financial analyst reports.

	Average Environmental Item Score per Financial Analyst Report				
	Environmental Item	**Chemistry**	**Electrical Equipment**	**Paper & Forest Products**	**All three industries**
	Score range: 0 to 3				
1	Environmental policies	0,0060	0	0	0,0045
2	Environmental management system/organisation	0,0060	0,048	0	0,0090
3	Environmental auditing	0	0	0	0
4	Reporting environmental aspects	0	0	0	0
5	Strategy	0,018	0	0	0,014
6	Extent of the company certified to ISO 14001 series/EMAS	0	0	0	0
7	Extent of employee environmental training	0	0	0	0
8	Implementing environmental management along the value chain	0	0	0,12	0,018
9	Managing environmental risks	0,065	0	0,062	0,059
10	Air Emission	0,25	0	0,16	0,21
11	Water discharge	0,26	0	0,094	0,21
12	Solid waste disposal	0,18	0	0,12	0,15
13	Control, installations, facilities or processes described	0,11	0	0,094	0,095
14	Compliance status of facilities	0,11	0	0,19	0,11
15	Noise and odours	0,030	0	0	0,023
16	Site restoration	0,0060	0,14	0	0,018
17	Energy saving	0,048	0	0,094	0,050
18	Greening of transports	0,018	0	0	0,014
19	Litigation	0,23	0,14	0,094	0,20
20	Fines	0,012	0	0,062	0,018
21	Incidents	0	0	0,031	0,0045
22	Fulfilling Environmental laws and regulations	0,24	0,19	0,094	0,21
23	Future legislation or regulation requirements	0,31	0,14	**0,22 C**	0,28
24	Environmental taxes	0	0	0,03	0,0045
25	CO2 (eq.) emissions trading, carbon permits, credits, allowances	0,030	0,19	**0,28 B**	0,081
26	End of life treatment	0,012	0	0,031	0,014
27	Producers Responsibility (ERP)	0,024	0	0	0,018
28	Integrated Product Policy	0,0060	0	0	0,0045
29	Environmental regulations facing customers/markets	**0,68 A**	**1,62 A**	0	**0,67 A**
30	Customer demands	**0,48 C**	**1,33 B**	0,031	**0,50 B**
31	Life Cycle Assessments (LCA)	0,012	0	0	0,0090
32	Design for the Environment (DfE)	0	0,095	0	0,0090
33	Eco-efficiency	0,46	**0,43 C**	0	**0,39 C**
34	Recycling	0,14	0	**1,4 A**	0,31
35	Conservation of natural resources / cost of scarcity	0,042	0	0,16	0,054
36	Deforestation	0	0	0,031	0,0045
37	Biodiversity / ecology	0,030	0	0,094	0,036
38	Climate change / Global warming	0,036	0	0	0,027
39	Toxicity and health	**0,51 B**	0	0	0,38
	Score Range: 0 to 100 %				
	Business opportunities from environmental aspects	85 %	76 %	53 %	79 %

A: The most reported item in financial analyst reports on firms in the industry.
B: The second most reported item in financial analyst reports on firms in the industry.
C: The third most reported item in financial analyst reports on firms in the industry.

4.4 The business opportunity perspective in financial analyst research reports

Earlier research suggests that environmental information to a larger extent is focused on the negative risk associated aspects while it to a lesser degree deals with the opportunity side associated with the environmental aspects of the analysed firm. The experimental study by Chan and Milne (1999) indicates that investors react strongly and negatively to information on poor environmental performance. Information on positive environmental performance show, on the other hand, no significant reaction among investors. Aerts *et al.* (2004) detected in their environmental disclosure study that North American companies operate in a more regulated environment compared to the European counterparts and, hence, report more on risk-related environmental aspects. Concerning information on sustainable development and environmental management the contrary was detected which is information that is permeated through voluntary reporting that is not regulated as the fiscal report is. The results in Nilsson *et al* (2008) and Nilsson (2008) indicate that the negative environmental information – downside information – is more frequently included in the financial analyst reports than positive environmental information – upside information. Hunt and Grinnell (2004) show in their survey research that analysts use environmental information foremost for evaluating downside risks.

Information concerning environmental liabilities, risk provisions in Nilsson *et al* (2008) and Nilsson (2008) is the most important items that often come in quantitative terms both in reporting due to reporting requirements in regulation and, thus, also in financial analyst reports. Also emissions from the company itself is reported upon since there are requirements to meet emission targets and, hence, also reported upon by the analysts. These aspects, as discussed above are dealt with in analyst reports for both the *Chemical* and *Oil/Gas* industries. The analysts also tend to focus on the environmental information about the firm's products, especially in the chemical industry, since increasingly product environmental aspects are becoming more important for the competitiveness of firms. The Nilsson *et al* (2008) and Nilsson (2008) found product environmental information to be more readily expressed for the *Chemical* industry while the *Oil/Gas* industry financial analyst reports rather concern general market development from an environmental perspective, where the products are more homogenous. Information about costs for land remediation and contamination was, furthermore, important for the analysts reporting on the *Oil/Gas* industry. Summarising the inclusion of risk and business information in the analyst reports of the Nilsson studies the downside risk-related information is considerably more reported on by analysts. The down-side risk is, if looking at the individual industries, somewhat more important for the Oil/Gas industry, while the upside-related environmental information, especially about products, are more relevant for companies in the Chemical industry. However, according to the Nilsson studies the upside-related information is considerably behind the downside supplied information in financial analyst reports for the two industries *Chemical* and *Oil/Gas*.

The Nilsson *et al* (2008) paper, furthermore, discusses the lack of strong support as somewhat surprising because of the very costly consequences of downside risks. A decade ago, Pettersson and Earl (1998) on the analyst community in London detected that regarding environmental information ***General Fund Analysts*** prefer financially linked data while ***Ethical Fund Analysts*** focus on *environmental performance* and *risk & compliance data*. The cluster of ***Credit and Insurance Risk analysts*** show no clear cut preferences, but a slight overweight towards *finance data* as well as *risk & compliance data*. **No analysts** paid much attention to *stakeholder involvement* and *environmental opportunities*.

So, the study by Pettersson and Earl (1998) shows that analysts in London asked for quantitative data to be included in corporate reports. To them, the important data describe risks, costs and strategies in measurable terms. The analysts did, nevertheless, not appear to appreciate information about environmental opportunities to any great extent. The value of such information was not realized by these actors. Cerin (2002a; 2006a; cf Cerin and Laestadius, 2005) argue, however, that in order to estimate the major financial risk of a corporation it is vital to place the company within its value chain to estimate dependencies that could affect the company's business. When looking at carbon emissions, for instance, the scope may follow A) the judicial entity enabling national aggregations as well as the direct financial risk due to possible environmental policy action to be ascertained. The other scope follow B) the life-cycle of the products of the companies owning the design, thereby elucidating the companies' overall financial risks as well as the opportunities presented throughout the entire value chains, on which it is dependent. For a company producing active products (i.e. consuming energy during use) or having energy intensive resource extraction these parts of the value chain will truly be determining the competitiveness of the firm when new policy instruments on carbon emissions are introduced and not the emissions from the company's judicial borders or bought energy used in office and assembly facilities (Cerin, 2002b). Cerin found, furthermore, that if just taking emissions from the judicial entities into account the carbon dioxide equivalent emissions per turnover from manufacturing companies of vehicles, white goods and telecom equipment would be fairly similar if the firms are based within the same country. Firms from these three sub-industries have, however, immensely different sensitivity towards greenhouse gas emissions. Regulatory changes or alterations in customer preferences along the value chains of these three sub-industries will affect respective firms immensely different – some will suffer severely while others will merely experience increased business opportunities from trade moving from one sector to another.

This has been called upon in journals on economics and law for designing effective policy instruments that goes beyond the judicial entity of the firm (Cerin and Karlson, 2002 on business incentives from introducing property rights to GHG emissions; Cerin, 2006d on bringing economic opportunity into line with environmental influence; 2006c on introducing e.g. GHG emissions value chain stewardship to the vehicle manufacturers) and has recently been adopted by legislation aiming at delimiting the emissions from the vehicle manufacturers' product portfolios driven by a proposal by the European Commission (EC, 2008) following the proposal by seven Directories General (EC, 2007). Quite uniquely the European Commission has presented a regulatory proposal that now has passed through the European Parliament. The approaching legislation will put a penalty tax on the car producer whose registered (that is sold) car fleet during a year in the European Union average vehicle GHG emissions per distance driven exceeds a set limit. In the short term a penalty has to be paid for each exceeding 130 g/100km and the long term target for 2020 will be considerably tougher (95 g/100km) than the ones set for 2012. The environmental performance within the judicial borders of the firm is not really relevant for estimating the future profitability of the firm when such noticeable alterations in the prerequisites for a firm's products occur.

The Swedish Society for Financial Analysts have, similarly, expressed the fundamental role environmental issues may have in developing products that meet the demands of concerned and environmentally regulated customers, but also as jeopardising the sole existence of the company itself if not having the systems for environmental and social aspects in place within the own organisation or upstream (SFF, 2008).

Drawing from the experiences in the paragraphs above we see that crucial aspects when determining business opportunities of firms – as well as the company risk – is to incorporate the

value chain of the analysed company to retrieve a more holistic picture on the determinants of the firm's future cash-flows and profits. Below, the inclusion of business opportunity aspects of the analysed firms is discussed. Comparisons are carried out between industry and firms; namely between Chemicals and Akzo Nobel, between Electricals and ABB and between Paper & Forest Products and SCA on the business perspective in respective reports.

All three Industries – Chemicals, Electrical Equipment and Paper & Forest Products

Of the financial analyst research reports containing environmental information 67 percent of them dealt with business opportunities without talking about environmental risks that are linked to the analysed firm in question, see table 14 and figure below. An additionally 12 percent of the analyst reports dealt with both business opportunities and risks that are associated with the firm. Thereby, 79 percent of the analyst dealt with environmental business opportunities in their research reports. 21 percent of the financial analyst reports contained only environmental information from a risk perspective without looking into the opportunity side of environmental issues.

Table 14 Percent of financial analyst reports displaying business opportunities from environmental aspects.

	Financial Analyst Reports Containing information on	
Industry/Company	business opportunities from Environmental Aspects	business opportunities as well as business risks from environmental aspects
All three Industries	67 %	79 %
* Chemicals	68 %	85 %
* * *Akzo Nobel (incl. ICI)*	*29 %*	*29 %*
* Electrical Equipment	76 %	76 %
* * *ABB*	*60 %*	*60 %*
* Paper & Forest Products	47 %	53 %
* * *SCA*	*50 %*	*75 %*

The overall results from the financial analyst reports covering the three industries – Chemicals, Electrical Equipment and Paper & Forest Products – is that financial analysts use environmental information as being a source for assessing business opportunities in four out of five cases, rather than being a source for risk measure of the analysed firm.

Comparing Chemicals Industry to Akzo Nobel

Chemicals Industry
Of the financial analyst research reports containing environmental information 68 percent of them dealt with business opportunities without talking about environmental risks that are linked to the analysed firm in question. In addition 17 percent of the analyst reports dealt with both business opportunities and risks that are associated with the firm. Thereby, 85 percent of the analysts dealt with environmental business opportunities in their research reports. 19 percent of the financial analyst reports contained only environmental information from a risk perspective without looking into the opportunity side of environmental issues.

Akzo Nobel
The reports on Akzo Nobel that contain environmental information have a higher degree of information dealing with business risks from environmental aspects and a lesser amount of business opportunity information. The opportunity perspective for ABB constitutes 29 percent of all disclosed environmental information while the business risks represent the remaining 71 percent.

No reports were found to deal with both business opportunities and risks linked to their disclosed environmental information.

Comparing Electrical Equipment Industry to ABB

Electrical Equipment Industry
Of the financial analyst research reports containing environmental information 76 percent of them dealt with business opportunities without talking about environmental risks that are linked to the analysed firm in question. An additionally 2 percent of the analyst reports dealt with both business opportunities and risks that are associated with the firm. Thereby, 78 percent of the analysts dealt with environmental business opportunities in their research reports. 22 percent of the financial analyst reports contained only environmental information from a risk perspective without looking into the opportunity side of environmental issues.

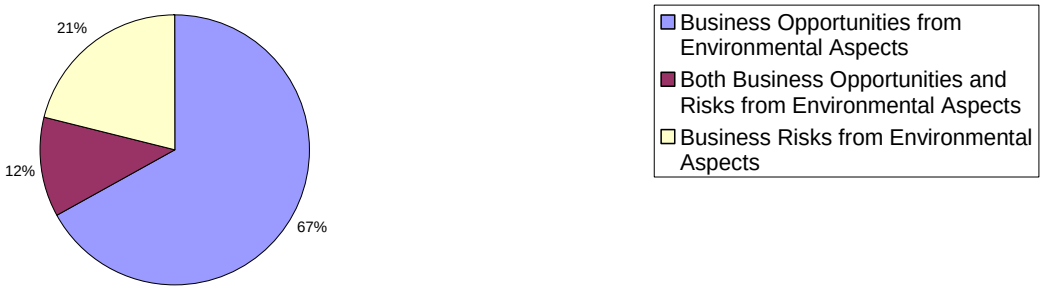
ABB
The reports on ABB that contain environmental information have a higher degree of information dealing with business risks from environmental aspects and a lesser amount of business opportunity information compared to industry average. Still, the business opportunity side constitutes the lion part of disclosed environmental information in analyst reports on ABB. The opportunity perspective for ABB constitutes 60 percent of all disclosed environmental information while the business risks represent the remaining 40 percent. No reports were found to deal with both business opportunities and risks linked to their disclosed environmental information.

Comparing Paper & Forest Products Industry to SCA

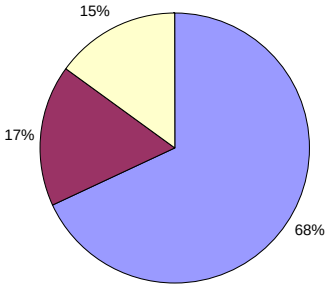
Paper & Forest Products Industry
Of the financial analyst research reports containing environmental information 47 percent of them dealt with business opportunities without talking about environmental risks that are linked to the analysed firm in question. An additionally 6 percent of the analyst reports dealt with both business opportunities and risks that are associated with the firm. Thereby, 53 percent of the analysts dealt with environmental business opportunities in their research reports. 47 percent of the financial analyst reports contained only environmental information from a risk perspective without looking into the opportunity side of environmental issues.

SCA
The reports on SCA that contain environmental information have a lower degree of information dealing with business risks from environmental aspects, but about the same amount of business opportunity information. The opportunity perspective for SCA constitutes 50 percent of all disclosed environmental information while the business risks represent 25 percent. The remaining 25 percent of the reports that contain environmental information deal with it both from a business opportunity as well as from a business risk perspective.

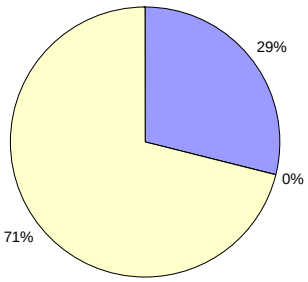
All three Industries
- Financial Analyst Reports Containing Information on



Chemicals
- Financial Analyst Reports Containing Information on



Akzo Nobel (incl. ICI)
- Financial Analyst Reports Containing Information on



Electrical Equipment
- Financial Analyst Reports Containing Information on

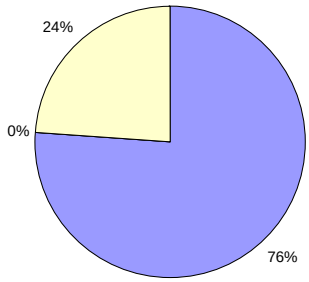
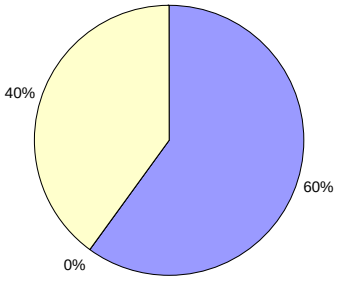
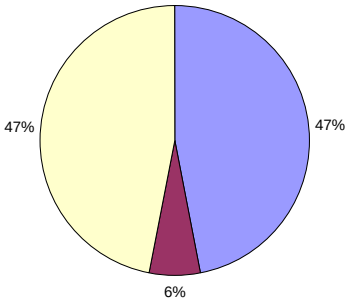


ABB
- Financial Analyst Reports Containing Information on



Paper & Forest Products
- Financial Analyst Reports Containing Information on



SCA
- Financial Analyst Reports Containing Information on

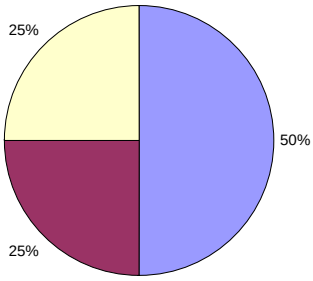


Figure 7: Percent of financial analyst reports displaying business opportunities from environmental aspects.

5 Citations from financial analyst reports on environmental matters

The financial analyst reports that have been assessed in this study empirically, that do contain environmental information, do it predominantly from a product perspective that is foremost concerned with business opportunities from the analysed firms' technologies and product portfolios. In section 4.2 above we see that 55 percent of the financial sell-side analyst reports that contain environmental information do it from a product and market perspective on environmental performance while merely 35 percent of the analysts relates to the environmental performance of the actual company, dealing with issues such as emissions and litigations.

In this section, some quotes from the analyst reports will be displayed to provide some examples on how the financial analysts formulate their texts containing environmental information. Particularly quotes that deal with the product perspective such as environmental product performance, meeting customer demands or legislation facing customers will be illuminated. Besides, analyst descriptions that deal with emissions and litigations from company sites as well as their view on need for mergers or acquisitions due to increasingly environmental standards, demands or resource deficiencies are also cited.

The following quote regarding ABB deals with how ABB's electrical infrastructure products fulfill customer needs to replace their own infrastructure, increasing fuel prices and environmental regulation and deregulation of electrical infrastructure (Heymann and Schoff, 2006):

> *"ABB is providing customers in these regions with grid systems (HVDC, HVDC Light, HV Cables, Semiconductors), network management and utility communications systems, electrical and control systems for power plants, substation automation, and turnkey substations and services. We believe that demand for this array of products and services is acyclical and will be driven by the need to replace aging infrastructures, create new transmission to service planned future generation, high fuel prices, environmental requirements, and deregulation of the electrical infrastructure."*
>
> Heymann and Schoff at Prudential Equity Group (2006)

The following quote regarding ABB deals with how ABB's oil & gas infrastructure products are well positioned in the increasing complexity and expenditures facing ABB's customers as a result of declining crude quality and environmental legislation (McMahon and Lin, 2004):

> *"ABB's position as provider of automation solutions to the oil & gas industry will benefit from increasing complexity and could receive a larger share of expenditures. For example, ABB's position as provider of deepwater solution is quite strong. Downstream: high refining margin, declining crude quality, and environmental legislation will drive capex."*
>
> McMahon and Lin at Bernstein Research (2004)

The following quote regarding SCA deals with how SCA is less exposed to the volatility of raw material (wood) prices due to their value chain integration by having supplies from own forests as well as recycling facilities down to non-cyclical products like hygiene products to the retail market (Manning and Lorenzen, 2005):

> *"SCA's own forest holdings and recycling facilities, reducing exposure to shifts in raw material prices in the market and raising efficiency and quality in supply."*
>
> *"SCA mitigates these fluctuations through vertical integration from ownership of forest and own waste paper collection to the finished hygiene or packaging product. Its net exposures to market prices are therefore generally only a fraction of total production."*

Manning and Lorenzen at ABN AMRO (2005)

The following quote regarding SCA deals with how merely 25% of SCA's movements in earnings come from changes in economic aspects like raw material aspects while the corresponding figure for the sector is up to 100% (Kjellberg and Blackshields, 2002):

> *"In a weak economy raw materials are normally inexpensive and in a strong economy raw material prices are high. On a net basis we estimate that 25% of SCA's underlying earnings movements are explained by changes in economic conditions. For other companies in the sector, changes in economic conditions explain 80–100% of the underlying movements in earnings."*

Kjellberg and Blackshields at Credit Suisse (2002)

A considerable amount of the financial analyst reports, covering the Chemicals industry, that contain environmental information do it from a resource scarcity and the resulting escalating costs as well as from a legislative perspective, increasingly leading to a higher demand for a less toxic product portfolio from the industry's customers. In this study, such examples on environmental information are, however, scares in the analyst reports on Akzo Nobel compared to their industry peers. This is, furthermore, coherent with the findings in section 4 where it is found that of the financial analyst reports that contained environmental information on Akzo Nobel 71 percent of them had a risk perspective linked to the environmental aspects displayed. The environmental risk perspective figure for the chemistry industry analyst reports in the study constitutes merely 32 percent of the analyst reports that contain environmental information. Therefore, citations from industry peers to Akzo Nobel are included below to provide examples on how financial analysts are reporting on environmental issues as business opportunities as well as from a perspective that includes the products and regulation involving them.

The following quote regarding BASF deals with how BASF is saving expenditures through energy and infrastructure savings as well as through wastewater treatment. These savings are quantified fiscally (Faitz, 2003):

> *EUR300m through logistical savings (pipelines instead of trucks), EUR150m through energy savings (using wastewater steam from one plant to power a turbine at another), and EUR50m through infrastructure savings (centralized services like fire department, wastewater treatment, catering). Currently, BASF puts total global savings through Verbund at EUR900m per year.*

Faitz at Julius Bär (2003)

The following quote regarding BASF deals with how an acquisition by BASF is founded growth opportunities as well as on attaining the stricter emission control legislation that may lead to market growth in emission catalysts (Dunwoodie and Satchell, 2006):

> *"It is a growth-driven acquisition, not one based on synergies, which the company indicated would only be modest. … these areas offer good opportunities for growth with changes in crude oil quality, and demand for higher yield, giving good growth in chemical and refinery catalysts. In addition, more strict emission control legislation is leading to attractive market growth in emission catalysts (5% market growth in the next few years is forecast)."*

Dunwoodie and Satchell at ING (2006)

The following quote regarding Danaher deals with how Danaher's products meet environmental legislative demands facing customers' fuel stations. The citation also illuminates the size of those services in fiscal numbers and as percentage of the segment turnover (Duignan and Antezano, 2004):

"Demand also is driven by EPA requirements for reduced emissions. Danaher can provide the necessary products to fully automate a fuel station and meet EPA requirements. Its services, which include monitoring compliance with EPA regulations and filing the necessary paperwork to various government overseers, are mostly provided to large retail chains. These services represent about $150 million in annual revenue, or about 23% of total segment sales."

Duignan and Antezano at Bear Sterns (2004)

The following quote regarding Danaher deals with how the demand for Danaher's products is driven by environmental legislation like the US EPA. This regulatory driven demand is estimated to constitute 30% of the demand for the company's products (Khoshaba *at al.*, 2003):

"The main drivers of demand for Retail/Commercial Petroleum equipment include environmental regulations, new site construction, infrastructure improvement projects as well as replacement and maintenance. We believe that nearly 30% of demand for the company's products is driven by a wide range of regulatory requirements, such as those mandated by the U.S. Environmental Protection Agency (EPA), as well as state and local governments."

Khoshaba, Athavale and Kabili at Deutsche Bank (2003)

The following quote regarding Eaton Corporation deals with how the fuel economy and emission requirements facing customers are driving product development in the industry. Eaton Corporation's managerial understanding in innovation and technological development have resulted in a $ 20 million outgrow its industry peers. Future emissions regulations will force the industry to into mergers and acquisitions (Armstrong and Fleischer, 2006):

"The forces driving strategic product development decisions in this segment are fuel economy, emissions requirements, and safety. Accordingly, Eaton must use technological expertise to develop innovative products that enable customers to meet these requirements. Eaton's technological innovation in recent years enabled this segment to outgrow its market by $20 million in 2005. Management attributes this achievement to new products that improve fuel economy, penetration in new market segments, and truck-related business."

"Looking forward, we believe that important areas of growth (and/or acquisition) will be products that help manufacturers to meet the exceedingly tough NAFTA emissions requirements that become effective in 2010."

Armstrong and Fleischer at Friedman Billings Ramsey Research (2006)

The following quote regarding Du Pont deals with how Du Pont has achieved an agreement with US EPA to delimit its nondisclosures merely to civil law litigations, which the firm now has reserved $ 15 million. Du Pont is seen as taking a proactive role, seeking toxic substance EPA regulation on the unregulated product in question (Ahmed, 2006):

"DuPont agreed in principle with the EPA regarding the company's liability regarding PFOA. The agreement resolved allegations of both ancient and recent nondisclosures, leaving for litigation before the agency's administrative law judge only the amount of the civil penalty. DuPont noted in a Securities and Exchange Commission filing that it was reserving USD15m for the possible civil penalty. DuPont from the outset of this case has taken a very conciliatory posture as to the EPA's investigation under the Toxic Substances Control Act (TSCA), pledging complete cooperation on the research front and indeed seeking EPA regulation of this previously unregulated product."

Ahmed at HSBC (2006)

The following quote regarding Mann deals with how its industry peers are launching global truck platforms to keep up with increasingly stringent emissions standards around the world to achieve

economies of scale, which will push midsized players like MAN into mergers and acquisitions (Hagmann *et al.*, 2003):

> *"Historically, truck products have been different by region but, due to the harmonisation of emission standards and the potential cost savings, DCX and Volvo are now aiming to launch one global truck platform in 2005-07E. If successful, we believe the large economies of scale in DCX and Volvo will increase the pressure on the medium-sized players like MAN and push companies into M&A."*
>
> Hagmann, Fagerlund and Edmunds at UBS (2003)

6 Conclusion

Traditionally, external assessment of companies' environmental aspects by ethical and socially focused analysts seldom encompass environmental performance, but oftentimes concentrating on the existence of strategies, commitments, management systems and the existence of firms' environmental reporting. If environmental performance is analysed it foremost concerns substance flows and in some cases incorporates the resulting environmental cost assessment relating to the judicial borders of the firm.

According to Cerin and Belhaj (2009), only including the environmental aspects within the company's judicial scope is in most industry sectors not going to be influencing major firm decisions, especially if these environmental costs are to illustrate the *true* costs for society and not the costs that may face the firm or the core stakeholders of the firm. Instead, in order to play a role in decision-making, analysis of environmental aspects should incorporate the influence that stakeholders – such as customers, NGO's and legislators – may have on future revenues of the assessed firm in the near by future and how well advanced corporate strategies are in meeting these threats or changes in the business environment that incorporates the environmental constraints put on their customers by legislators and increased global competition for resources – through research and market plans – to turn them into business opportunities.

One obstacle for making assessments of firms – strict financial or environmental – from the outside and in, however, is the information asymmetries and the lack of relevant data both at the company but even more so for an external actor (Cerin and Dobers, 2001b). This study, thus, investigates what environmental information financial analysts use in their financial analyst reports. Three industry sectors, *Chemicals*, *Electrical Equipment* and *Paper & Forest Products*, are specially analysed in this report.

Unlike most previous research that merely looks at the perceptions of financial analysts, the assessment of environmental information in financial analyst reports, examines the environmental information financial analysts actually use in their analyst reports which then influence the investment behaviour of investors. Out of almost 4500 analyst reports, that encompasses 15 pages or more, about 36 percent contain environmental information. When looking at industry sectors, however, the share of financial analyst reports that contain environmental information range from only 3 to up to 79 percent. The type of environmental information that the analysts focus on in their reports are on how firms' products and product portfolios are adopted to *Environmental regulations facing customers/markets*, *Customer demands* and *Eco-Efficiency*. This product perspective is strongly related to discussions of business opportunities of the firm. In fact, a good 77 % of the financial analyst reports containing environmental information dealt with opportunities linked to environmental aspects. To a lower extent, financial analysts write about company specific risk issues like emissions and litigations while their reports are virtually absent from aspects like environmental strategies, policies, management systems, reporting and auditing. These environmental preparedness issues constitute, nevertheless, a prominent part in many assessments used by socially and environmentally concerned investors.

7 Acknowledgement

The author wishes to acknowledge research colleagues and academic staff from the Sustainable Investment Research Platform – SIRP. Initially in this research project Dr. Henrik Nilsson from Umeå School of Business – USBE – at Umeå University has been heavily involved, by retrieving financial analyst reports from the database Investext, as well as bringing in crucial experiences from two earlier papers analyzing the environmental content in analyst reports of the oil and chemical sectors. The author, furthermore, appreciates the support from Professor Lars Hassel at USBE and Åbo Akademi University in Turku/Åbo, Finland as well as to GES Investment Services for providing data on the environmental preparedness and performances of firms.

The continuous discussions with Dr. Mohammed Belhaj, IVL Swedish Environmental Research Institute, concerning the related report on Extra Financial Analysis – EFA – has been most valuable. The author is also undeniably thankful to the constructive dialogues during numerous and indeed valuable meetings held with ABB, Akzo Nobel and SCA and the other industrial members and academic researchers at the Chalmers University of Technology industry collaboration on environmental aspects CPM.

The author furthermore gratefully acknowledge the financial support by Mistra (the Foundation for Strategic Environmental Research), the industry-university competence centre on environmental assessments of products at Chalmers University of Technology in Gothenburg CPM (the Competence Centre for Environmental Assessment of Product and Material Systems), the Head of Chalmers University of Technology, IVL Swedish Environmental Research Institute and Swedish Environmental Protection Agency (Swedish EPA) upon which the research activities of this paper are based.

8 References

8.1 General Sources

Aerts W, Cormier D, Magnan M. 2004. *Environmental Disclosure by Continental European and North American Firms: Contrasting Stakeholders' Claims and Economic Consequences.* Working Paper, École des Sciences de la Gestion Université du Québec à Montréal. Montreal, Quebec.

Barth M, McNichols M, Wilson, G. 1997. Factors Influencing Firms' Disclosures about Environmental Liabilities. *Review in Accounting Studies.* Vol. 2, pp. 35-65.

Bewley K, Li Y. 2000. Disclosure of environmental information by Canadian manufacturing companies: a voluntary disclosure perspective. In: Freedman M, Jaggi B. Eds. *Advances in Environmental Accounting and Management.* vol. 1, pp. 201–226.

Björklund H. 2006. *Branschspecifik miljöredovisning: En studie av miljöredovisning och miljökommunnikation i den svenska bank- och försäkringsbranschen.* Master of Science Thesis. Stockholm University. Stockholm, Sweden.

Brignall S, Modell S. 2000. An institutional perspective on performance measurement and management in the 'new public sector'. *Management Accounting Research.* Vol. 11, pp. 281–306.

Brytting T, 2002. *Aktuellt.* Associate Professor in Industrial Economics Thomas Brytting was interviewed in Aktuellt, a daily news program in Swedish Public Service Television. [2002-04-18].

Cerin P. 2000. *Corporate Environmental Reporting: An Innovation of Accounting?* Working Paper. TRITA-IEO R 2000:01, Dept. Industrial Economics and Management, Royal Institute of Technology, Stockholm, Sweden.

Cerin P. 2002a. Communication in Corporate Environmental Reports. *Corporate Social Responsibility and Environmental Management.* volume 9, issue 1, pp. 46-65.

Cerin P. 2002b. Characteristics of Environmental Reporters on the OM Stockholm Exchange. *Business Strategy and the Environment.* volume 11, issue 5, pp. 298-311.

Cerin P. 2005. *Environmental Strategies in Industry – Turning Business Incentives into Sustainability*. Swedish Environmental Protection Agency, Report 5455, February 2005, Stockholm, Sweden.

Cerin P. 2006a. Permeating Information Asymmetries in Sustainability Reporting and Sustainability Investments – Swedish Perspectives. Sumati Reddy Ed. *Sustainability Reporting – Concepts and Experiences*. ICFAI University Press, Hyderabad, Andhra Pradesh, India, pp 200-228.

Cerin P. 2006b. *How and why sustainability analysis impacts the profitability of business*. SRI Seminar – Nordic Countries: Increasing returns through Sustainable Investments. Dexia Asset Management. Seminar January 24th Stockholm, Sweden.

Cerin P. 2006c. Introducing Value Chain Stewardship (VCS). *International Environmental Agreements: Politics, Law and Economics*. Vol. 6, No. 1, pp. 39-61.

Cerin P. 2006d. Bringing Economic Opportunity into Line with Environmental Influence: A Discussion on the Coase Theorem and the Porter and van der Linde Hypothesis. *Ecological Economics*. Vol. 56, Issue 2, pp. 209-225.

Cerin P, Dobers P. 2001a. What does the performance of the Dow Jones Sustainability Group Index tell us? *Eco-Management and Auditing*. Vol. 8, issue 3, pp. 123-133.

Cerin P, Dobers P. 2001b. Who is rating the raters? *Corporate Environmental Strategy*. Vol. 8, issue 2, pp. 95-97.

Cerin P, Dobers P. 2008. Editorial: The contribution of sustainable investments to sustainable development. *Progress in Industrial Ecology – An International Journal*. Vol. 5, No. 3, pp. 161-179.

Cerin P, Karlson L. 2002. Business incentives for sustainability: a property rights approach. *Ecological Economics*. Vol. 40, Issue 1, pp. 13-22.

Cerin P, Laestadius S. 2005. Environmental Accounting Dimensions: Pros and Cons ofr Tracectory Convergence and Increased Efficiency. In Rikhardsson P, Bennett M, Schaltegger S, Bouma J. (Ed.) 2004. *Implementing Environmental Management Accounting: Status and Challenges*. Kluwer Academic Publishers, Dordrecht, The Netherlands.

Chan C, Milne M. 1999. Investor reactions to corporate environmental saints and sinners: an experimental analysis. *Accounting and Business Research*. Vol. 29, pp.265-79.

Clarkson P, Li Y, Richardson G, Vasvari F. 2008. Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting. Organizations and Society*. Vol. 33, Issues 4-5, pp. 303-327

Czarniawska B. 2002. *Remembering while forgetting: The role of automorphism in reframing city management in Warsaw*. Public Administration Review. Vol. 62, issue 2, pp. 163-173.

Cormier D, Magnan M. 1999. Corporate environmental disclosure strategies: determinants, costs and benefits. *Journal of Accounting, Auditing and Finance*. Vol. 14, issue 3, pp. 429–451.

Cormier D, Magnan M. 2002. *The contribution of environmental reporting to investors' valuation of a firms earnings*. Working paper. Université du Québec á Montréal. Montreal, Quebec.

Cormier D, Magnan M. 2003. Environmental reporting management: A continental European perspective. *Journal of Accounting and Public Policy*. Vol. 22, pp. 43-62.

Cormier D, Gordon I, Magnan M. 2002. *Corporate Environmental Disclosure: Contrasting Management's Values with reality*. Working paper. Université du Québec á Montréal. Montreal, Quebec.

Deegan C, Rankin, M. 1997. The Materiality of Environmental Information to Users of Annual Reports. *Accounting, Auditing and Accountability Journal*. Vol. 10, issue 4, pp. 562-583.

Demirakos E, Strong N, Walker M. 2004. What Valuation Models Do Analysts Use? *Accounting Horizon*. Vol. 18, issue 4, pp 221-240.

Derwall J, Guenster N, Bauer R, Koedijk K. 2004. The Eco-Efficiency Premium Puzzle. *Financial Analysts Journal*. Vol. 61, no. 2, pp. 51-63.

EC. 2001. *The route to road safety*. European Commission, Research, Growth. Brussels, Belgium. [Fetched October 2009] ec.europa.eu

EC. 2007. *Commission staff working document accompanying document to the proposal from the commission to the European Parliament and Council for a regulation to reduce CO2 emissions from passenger cars impact assessment.* European Commission. Brussels, Belgium. [Fetched June 2009] ec.europa.eu

EC. 2008. *Reducing CO2 emissions from lightduty vehicles*. European Commission, Environment, Air, Transport & Environment, CO2 and Cars. Brussels, Belgium. [Fetched May 2009] ec.europa.eu

ECCE. 2007. Use *of Extra-Financial Information by Research Analysts and Investment Managers.* European Centre for Corporate Engagement. [Fetched June, 2007] www.corporate-engagement.com

Fayers C, Cocklin C, Holmes D. 2000. Environmental Considerations in the Decisions of Australian Investment Professionals. *Journal of Environmental Assessment Policy and Management.* Vol. 2, issue 2, pp. 173-201.

Freedman M, Wasley C. 1990. The association between environmental performance and environmental disclosure in annual reports and 10-Ks. *Advances in Public Interest Accounting.* Vol. 3, pp.183 - 193.

Halme M, Niskanen J. 2001. Does Corporate Environmental Protection increase or Decrease Shareholder Value? *The Case of Environmental Investments. Business Strategy and the Environment.* Vol. 10, pp. 200-214.

Hassel, L., Nilsson, H., & Nyquist, S. (2005). The Value Relevance of Environmental Performance. *European Accounting Review.* 14(1), 41-61.

Hunt H, Grinnell D. 2004. Financial Analysts' views of the value of environmental information. *Advances in Environmental Accounting and Management.* Vol. 2, pp. 101-120.

Ilinitch A, Soderstrom N, Thomas TE. 1998. Measuring Corporate Environmental Performance. *Journal of Accounting and Public Policy.* Vol. 17, pp. 383-408.

Ingram R, Frazier K. 1980. Environmental performance and corporate disclosure. *Journal of Accounting Research.* Vol. 18, issue 2, pp. 614–622.

Konar S, Cohen M. 2001. Does the Market Value Environmental Performance? *The Review of Economics and Statistics.* Vol. 83, issue 22, pp. 281-289.

KPMG. 1993. KPMG International Survey of Environmental Reporting 1993. KPMG: London, UK.

KPMG. 1996. *KPMG International Survey of Environmental Reporting 1996*. KPMG: London, UK.

KPMG. 1999. *KPMG International Survey of Environmental Reporting 1999*. KPMG: London, UK

KPMG. 2002. *KPMG International Survey of Corporate Sustainability Reporting 2002*. KPMG Global Sustainability Services, Amsterdam, the Netherlands.

KPMG. 2005. *KPMG International Survey of Corporate Responsibility Reporting 2005*. KPMG Global Sustainability Services, Amsterdam, the Netherlands.

KPMG. 2008. *KPMG International Survey of Corporate Responsibility Reporting 2008*. KPMG Global Sustainability Services, Amsterdam, the Netherlands.

Ljungdahl F. 1999. *Utvecklingen av miljöredovisningen i svenska börsbolag – praxis, begrepp, orsaker.* Lund University Press, Lund, Sweden.

Ljungdahl, F. 2000. *Vem behöver miljöredovisningar?* Rapport 5058. Naturvårdsverket [Swedish EPA], Stockholm, Sweden.

Massarsch A, Enell M. 2008. *De svenska börsföretagens arbete med miljö och hållbar utveckling CSR värderat utifrån företagens hemsidor.* Presentation. Globe Forum Buiness Network. Stockholm, Sweden.

Meyer M, Rowan B. 1977. Institutionalized organizations: formal structure as myth and ceremony. *American Journal of Sociology.* Vol. 83, pp. 340-363.

Mills J, Cocklin C, Fayers C, Holmes D. 2001. Sustainability, Socially Responsible Investment and the Outlook of Investment Professionals in Australia. *Greener Management International.* spring, pp. 31-44.

MSCI Barra. 2009. *Global Industry Classification Standard (GICS).* MCSI Barra. Standard & Poor's. [Fetched April 2009] www.mscibarra.com

von Nandelstadh A. 2003. *Essays on Financial Analyst Forecasts and Recommendations.* PhD Dissertation. Publications of the Swedish School of Economics and Business Administration No. 116, Helsinki, Finland.

Nilsson, H. 2008. Exploring the environmental information in sell-side analysts' research reports. *Progress in Industrial Ecology – An International Journal.* Vol. 5, issue 3, pp. 213-235.

Nilsson H, Cunningham G, Hassel L. 2008. A Study of the Provision of Environmental Information in Financial Analysts' Research Reports. *Sustainable Development.* Vol. 16, pp. 180-194.

Orens R, Lybaert N. 2007. Does the financial analysts usage of non-financial information influence the analysts forecast accuracy? Some evidence from the Belgian sell-side financial analyst. *The International Journal of Accounting.* Vol. 42, pp.237-71.

Patten D. 2002. The relation between environmental performance and environmental disclosure: a research note. *Accounting, Organizations and Society.* Vol. 27, pp. 763–773.

Pettersson M, Graham E. 1998. *Strategier för finansiell miljöinformation.* Utlandsrapport Storbritannien 9805. Sveriges Tekniska Attachéer, Stockholm, Sweden.

Previts G, Bricker R, Robinson T, Young S. 1994. A content analysis of sell-side financial analyst company reports. *American Accounting Association.* Vol. 8, no.2, pp.55-70.

Rikhardsson P, Welford R. 1997. Clouding the Crisis: the Construction of Corporate Environmental Management. Welford R. (Ed.) *Hijacking Environmentalism: Corporate Responses to Sustainable Development.* Earthscan Publications Ltd., London, UK, pp. 40-62.

Salomone R, Galluccio G. 2001. *Environmental Issues and Financial Reporting Trends - a Survey in the Chemical and Oil & Gas Industries.* Working paper, University of Messina.

Schwartz B. 1997. *Det miljöanpassade företaget: Strategiska uppträdanden på den institutionella scenen.* Nerenius & Santérus förlag, Stockholm, Sweden.

SFF 2000. *Finansanalytikernas rekommendationer, företagens hållbarhetsinformation; miljöfaktorer, socialt ansvar och mänskliga rättigheter.* Sveriges Finansanalytikers Förening (SFF). [*The Financial Analysts' Recommendations. Companies' Sustainability Information; Environmental Aspects, Social Responsibility and Human Rights.* The Swedish Society of Financial Analysts.] Stockholm, Sweden.

SFF 2008. *SFFs Rekommendation om Corporate Responsibility 2008*. Sveriges Finansanalytikers Förening (SFF). [*SFF's Recommendations on Corporate Responsibility 2008*. The Swedish Society of Financial Analysts.] Stockholm, Sweden.

Sjöström E. 2009. *Shareholder influence on corporate social responsibility.* PhD Dissertation. Stockholm School of Economics, Stockholm, Sweden.

Swanström L, Cerin P. 2006. *Management of sustainability issues in industry – a stakeholder perspective.* CPM-Report 2006:10, Centre for Environmental Assessment of Product and Material Systems, Chalmers University of Technology, Gothenburg, Sweden, pp. 1-113.

Wiseman J. 1982. An evaluation of environmental disclosures made in corporate annual reports. Accounting. *Organizations and Society.* Vol. 7, pp. 53 - 63.

8.2 Financial Analyst Report Sources

Heymann N, Schoff A. 2006. *Prudential Equity Group.* March 10, 2006.

McMahon N, Lin L. 2004. *Bernstein Research.* December 2, 2004.

Manning R, Lorenzen H. 2005. ABN *AMRO.* May 28, 2005.

Kjellberg L, Blackshields A. 2002. *Credit Suisse.* Noveber 4, 2002.

Faitz C. 2003. *Julius Bär.* October 17, 2003.

Dunwoodie M, Satchell P. 2006. *ING.* January 16, 2006.

Duignan A, Antezano A. 2004. *Bear Sterns.* May 13, 2004.

Khoshaba D, Athavale S, Kabili A. 2003. *Deutsche Bank.* August 12, 2003.

Armstrong N, Fleischer I. 2006. *Friedman Billings Ramsey Research.* April 6, 2006.

Ahmed H. 2006. *HSBC.* July 31, 2006.

Hagmann M, Fagerlund A, Edmunds S. 2003. *UBS.* August 5, 2003.