European Business Review
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Article information:
Permanent link to this document: https://doi.org/10.1108/EBR-04-2013-0080
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Corporate social responsibility and environmental reporting in controversial industries

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Abstract

Purpose – Over the last few decades, corporate social responsibility (CSR) has received a large amount of attention in research and in practice. As a response to the growing awareness of and concern about social and environmental issues, an increasing number of companies are proactively publishing their CSR-related principles and activities. The overall research question of this study is derived from legitimacy theory and is aimed at elucidating the relationship between industry sector and CSR communication. The paper aims to discuss these issues.

Design/methodology/approach – The empirical examination encompasses a sample that includes the annual reports of all German DAX-30 companies from 1998 to 2009. First, based on a content analysis, categories of CSR-related communication are defined. Second, these categories are used in a quantitative analysis with a longitudinal perspective to evaluate the hypothesis that companies in controversial industries communicate their CSR more intensely than companies in non-controversial industries.

Findings – The qualitative study leads to a category system that accounts not only for CSR-related activities but also for CSR philosophies and motives as the normative basis of CSR communication. The quantitative results support the hypothesis that companies in controversial industries are more active in CSR communication than companies in non-controversial industries.

Originality/value – Existing studies analysing CSR communication activity have been largely inconsistent and often use unsystematic approaches in choosing industries for comparison. Therefore, in this study, to overcome some of these deficiencies, a combination of quantitative and qualitative approaches addresses the concept of controversial industries.

Keywords Corporate social responsibility, Content analysis, Annual reports, Environmental reporting, Controversial industries

Paper type Research paper

Introduction

Over the last few decades, corporate social responsibility (CSR) has received a large amount of attention in research and in practice (Lindgreen and Swaen, 2010; McWilliams and Siegel, 2001; Pedersen, 2010). In particular, in the context of ecological problems such as global warming, the legitimacy of businesses is regularly questioned, and such challenges are especially imminent for companies in controversial industries such as the energy industry or, recently, the financial sector. Accordingly, empirical studies indicate that consumers are influenced by CSR initiatives by businesses, when they are aware of CSR communications (Pomering and Dolnicar, 2007; Vlachos et al., 2009).
In this context, CSR’s positive effects on brand beliefs, customer loyalty and other positive post-purchase outcomes (Bhattacharya and Sen, 2003) have been extensively investigated (Auger et al., 2003; Sen and Bhattacharya, 2001). As a response to the growing awareness of and concern about social and environmental issues, an increasing number of companies are proactively publishing their CSR-related principles and activities. Being one of the most important sources of information on corporate activities, corporate annual reports include corporations’ self-reported CSR performances and provide a means of determining the quality of a corporations’ commitment to CSR (Macleod, 2001). A growing body of research is dedicated to the analysis of patterns in or motivations for companies’ voluntary social or environmental disclosures; these studies use annual reports as a proxy for the social or environmental activities of the companies (Brammer and Pavelin, 2008; Milne and Adler, 1999). In some of these examinations of annual reports, there is strong evidence that industrial sector membership is related to the intensity of CSR communication (Adams et al., 1998; Hackston and Milne, 1996; Patten, 1991). However, those studies analysing the effect of industrial sector on CSR communication activity have been largely inconsistent (Gray et al., 2001) and often use unsystematic approaches in choosing industries for comparison. For example, Roberts (1992) admits that he chose the automobile, airline, and oil industries for his study in an ad hoc manner because they have an intuitive appeal as industries with public visibility and political risk. Therefore, in this study, to overcome some of these deficiencies, a combination of quantitative and qualitative approaches addresses the concept of controversial industries. The empirical examination encompasses a sample that includes all German DAX-30 companies from 1998 to 2009 and their annual reports. The overall research question of this study is derived from legitimacy theory and is aimed at elucidating the relationship between industry sector and CSR communication:

**RQ1.** Do organizations in controversial industries use CSR communication more often than those in non-controversial industries?

The remainder of this paper is organized as follows. In the next section, CSR communication and the idea of controversial industries is introduced. In the empirical section, a mixed qualitative-quantitative research approach is presented. First, the content analysis of the annual reports is summarized. After the development of several hypotheses regarding the differences in CSR communications between controversial and non-controversial industries via their annual reports, these hypotheses are tested using an analysis of variance (ANOVA). The discussion of the results of the hypotheses test and the longitudinal analysis leads to the key findings and implications for future research in the conclusions section.

**Theoretical background**

**CSR communication**

The European Commission (2001, p. 6) describes CSR as “a concept whereby companies integrate social and environmental concerns into their business operations and in their interactions with their stakeholders on a voluntary basis”. Along with the public’s increased demand for businesses to actually operate responsibly, stakeholders want to be informed about what companies do right and what they do wrong (Pomering and Dolnicar, 2007). Likewise, Podnar (2008, p. 75) defines CSR communication as:
Thus, CSR communication is “designed and distributed by the company itself about its CSR efforts” (Morsing, 2006, p. 171) and its function from the company’s viewpoint is an attempt to negotiate relationships with stakeholders (Ihlen et al., 2011). The predominant aim of CSR communication is to positively influence the stakeholders’ perception of companies, for example, their reputation, and thereby foster competitive advantages (Hooghiemstra, 2000; Kuruppu and Milne, 2010; Morsing and Schultz, 2006). In the analysis of CSR communication by companies, past studies have examined non-financial documents like sustainability, social or CSR reports (Aras and Crowther, 2009; Hartman et al., 2007; Perrini, 2005), web sites or social media (Chaudhri and Wang, 2007; Fieseler et al., 2009; Wanderley et al., 2008) and corporate annual reports (Campbell, 2004; Cho and Patten, 2007). Thus, in both research and practice, CSR communication is a very diverse field, with a large number of studies and a wide set of instruments. Overall, studies have shown that CSR has a positive influence on a firm’s financial performance (Orlitzky et al., 2003), can build brand equity (Hoeffler and Keller, 2002) and can foster competitive advantages (Porter and Kramer, 2002), customer loyalty and other positive post-purchase outcomes (Bhattacharya and Sen, 2003). Therefore, the rationale for the positive effects of CSR and its communication is straightforward: customers are more likely to be positively attracted to products or services provided by a firm that acts socially responsible, investors are more likely to buy their stocks, and potential employees are more likely to apply for jobs. However, communicating CSR initiatives may be problematic (Pomering and Dolnicar, 2007), as consumers tend to be sceptical of companies that advertise their “good deeds” (Pomering and Dolnicar, 2007; Drumwright, 1994). Therefore, a major challenge in gaining stakeholders’ acceptance of CSR reporting is that CSR messages are supported by corresponding corporate activities.

Controversial industries

The discussion of controversial industries originated in the analysis of controversial products, which were defined by Wilson and West (1981, p. 92) as:

[...] products, services, or concepts that for reasons of delicacy, decency, morality, or even fear tend to elicit reactions of distaste, disgust, offence, or outrage when mentioned or when openly presented.

Although, this early definition does not integrate environmentally harmful products and services, newer research also claims those as controversial (Cai et al., 2012). The idea of controversial products is complemented by the idea of controversial advertising, which “[...] by the type of product or execution, can elicit reactions of embarrassment, distaste, disgust, offence, or outrage from a segment of the population when presented” (Waller, 2005, p. 6). Products that were found to raise controversy when advertised are alcoholic beverages and other addictive products, products directed at children, health/sex-related products, social and political groups advertised (Fahy et al., 1995; Waller et al., 2005). The discussion of controversial industries resonates with the discussion of controversial products and advertising. Controversial industries can be
either obviously contentious based on their marketed products, e.g. tobacco, arms, alcohol, and health- or sex-related products (Byrne, 2010; Fam and Waller, 2003; Palazzo and Richter, 2005), or inherently controversial, which is especially the case for companies or industries engaged in activities that are more likely to affect the environment. Whereas the former industries are described as “morally corrupt” (de Colle and York, 2008), “unethical” (Byrne, 2010), “offensive” (Fam and Waller, 2003), and especially harmful for vulnerable groups in society like the homeless or the youth (Cook et al., 2003), the characterization of the latter group of controversial industries is more complicated, and their perception by the public and scholars is not as harsh. Industries that have been classified as controversial in the latter sense by previous authors who include the chemical and pharmaceutical, petroleum, transport (including automobile and airline), utility and resource industries and the steel industry (Hasseldine et al., 2005; Lee and Hutchison, 2005; Reverte, 2009). For those industries however the degree of controversy can vary by products or businesses. For example, a utility can be regarded as controversial for producing nuclear power and not controversial for delivering water to households. It can be argued that certain industries, for example, those with a high impact on the natural environment, have a special political visibility, which motivates proactive environmental disclosures to prevent criticism from politicians (Patten, 1991). Industries like consumer goods, financial services, manufacturing and telecommunication, information, media and entertainment (TIME) are considered as low controversial industries in this study (see Methodology) because they are based on non-controversial products. However, this does not prevent controversies in those industries from time to time, when for example a food scandal is raised.

Methodology
Understood as information about “organization-society interactions relating to the natural environment, employees, communities and customers” (Gray et al., 1995, p. 48), the CSR communication in corporate annual reports forms the basis of this study. Annual reports are considered to be the most important and highly credible source of information on corporate activities and performance in various fields and are sent to all shareholders and widely recognized, for example, by financial analysts (Adams et al., 1998; Neu et al., 1998). CSR reporting in annual reports is not practiced systematically or in a standardized way by companies and remains voluntary and unaudited (Beck et al., 2010; Cormier et al., 2005). Cormier et al. (2005) noted that German firms’ environmental concerns are higher than those in other large European countries; therefore, the German context seems appropriate for the purposes of this study. The annual reports of the DAX-30 (the German Stock Index) companies traded at the Frankfurt Stock Exchange form the database of this study. The DAX-30 is the leading stock index in Germany and the most important benchmark for the European marketplace as a whole; it consists of the 30 major German companies in terms of market capitalization. The composition of the DAX-30 has been mostly stable since its introduction in 1988; therefore reports from companies represented in the index for most of the period from 1998 to 2009 are included. Although the DAX companies are not representative of the overall German economy, they are leaders of their sectors and influence the whole economy as role models and Germany’s most valuable companies. In total, the sample consists of 31 companies and 347 firm-year observations from during the 1998 to 2009 period. The companies studied in this analysis are listed in Table I.
This study uses a mixed qualitative-quantitative approach (Srnka and Koeszegi, 2007). Based on the annual reports from the German DAX-30 companies from 1998 to 2009, a content analysis to code CSR communication is conducted. In the second step, the data to distinguish CSR communication in high-, middle- and low-controversy industries is analysed. This approach is apt to reveal what neither qualitative content analysis nor quantitative forms of data collection or analysis alone may have found. A quantitative comparison of the CSR communication in different industries categorized in terms of controversy, based on actual CSR communication behaviour as coded in business reports. Due to the fact that the data spanned over 12 years, a longitudinal analysis was conducted to compare how CSR motives and activities have changed over time.

**Findings of the content analysis**

To identify recurring themes in the reports, content analysis is used; a common scientific research method in various disciplines such as psychology, sociology, and politics (Krippendorf, 2003). All reports were converted into Rich Text Format, which

<table>
<thead>
<tr>
<th>Company</th>
<th>Sector</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adidas AG</td>
<td>Consumer goods</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Allianz SE</td>
<td>Financial services</td>
<td>1998-2009</td>
</tr>
<tr>
<td>BASF SE</td>
<td>Chemical and pharmaceutical</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Bayer AG</td>
<td>Chemical and pharmaceutical</td>
<td>1998-2009</td>
</tr>
<tr>
<td>BMW AG</td>
<td>Automotive</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Commerzbank AG</td>
<td>Financial services</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Continental AG</td>
<td>Automotive</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Daimler AG</td>
<td>Automotive</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Deutsche Bank AG</td>
<td>Financial services</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Deutsche Boerse AG</td>
<td>Financial services</td>
<td>1999-2009</td>
</tr>
<tr>
<td>Deutsche Lufthansa AG</td>
<td>Transportation</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Deutsche Post AG</td>
<td>Transportation</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Deutsche Postbank AG</td>
<td>Financial services</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Deutsche Telekom</td>
<td>TIME</td>
<td>1998-2009</td>
</tr>
<tr>
<td>E.ON AG</td>
<td>Energy</td>
<td>2000-2009</td>
</tr>
<tr>
<td>Fresenius Medical Care AG &amp; Co. KGaA</td>
<td>Manufacturing</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Henkel KGaA</td>
<td>Consumer goods</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Hypo Real</td>
<td>Financial services</td>
<td>2003-2009</td>
</tr>
<tr>
<td>Infineon Technologies AG</td>
<td>Manufacturing</td>
<td>2000-2009</td>
</tr>
<tr>
<td>Linde AG</td>
<td>Manufacturing</td>
<td>1998-2009</td>
</tr>
<tr>
<td>MAN AG St</td>
<td>Automotive</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Merck KGaA</td>
<td>Chemical and pharmaceutical</td>
<td>1998-2009</td>
</tr>
<tr>
<td>METRO AG St</td>
<td>Consumer goods</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Muenchener Rueck AG</td>
<td>Financial services</td>
<td>1998-2009</td>
</tr>
<tr>
<td>RWE AG</td>
<td>Energy</td>
<td>1998-2009</td>
</tr>
<tr>
<td>SAP AG</td>
<td>TIME</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Siemens AG</td>
<td>Manufacturing</td>
<td>1998-2009</td>
</tr>
<tr>
<td>ThyssenKrupp AG</td>
<td>Manufacturing</td>
<td>1999-2009</td>
</tr>
<tr>
<td>TUI AG</td>
<td>Tourism</td>
<td>1998-2009</td>
</tr>
<tr>
<td>Volkswagen AG</td>
<td>Automotive</td>
<td>1998-2009</td>
</tr>
</tbody>
</table>
is required by MAXQDA, the analysis program employed in this study. The coding was performed manually, where the defined coding unit was a phrase or a clause. During the coding process, a mixed deductive-inductive process was adopted, as suggested by Srnka and Koeszegi (2007). Starting with categories as common patterns and themes identified in the literature (philosophy, motives and activities related to CSR), a pre-test with 30 randomly chosen annual reports was performed. The initial coding phase consisted of two rounds conducted by both authors, both of whom are experienced in content analysis. Finally, both authors agreed on a coding scheme, as shown in Table II, based on categories that are mutually exclusive and reliable.

Based on the rule that a theme which is more frequently mentioned in the reports is weighted more highly, all the codes were summed. Consequently, the relative weight and importance of each category identified by the content analysis was evaluated by the frequency of the corresponding code in all the annual reports (Campbell et al., 2006). To ensure accurate coding, several decision rules were formulated (see Decision rules for coding). For example, some of the initially assigned codes seemed to capture not only CSR-related topics but also those that appeared to be mostly economically motivated, such as college marketing. As a consequence, only when the text was considered to contain a substantially CSR-related motivation beyond an economic one was it included.

Decision rules for coding

- All statements must be specifically stated; they cannot be implied.
- If any sentence has more than one possible classification, more than one code must be allocated.
- Statements relating to the quality of goods or services are not coded unless they contain a direct relation to social or environmental improvements.
- Statements relating to HRM practices such as further training and education, corporate pension plans, appraisal interviews and others that are not CSR-related are not to be coded.
- No activities that are based on legal requirements, such as the prevention of accidents or health prevention, are to be coded.
- Activities that are best attributed as graduate recruiting or campus marketing are not to be coded.
- Activities that are pure R&D with no relation to CSR are not to be coded.
- Codes assigned to the category sports focus only on amateur sports and not on professional sponsorship.

The coding of the data follows a comprehensive understanding of CSR as a strategic management approach. Therefore, not only activities were coded but also CSR-related philosophy and motives. In total, seven main categories were identified.

CSR-related philosophy. In accordance with Carroll (1979) and prior research, CSR-related philosophy can be conceptualized along economic, legal and philanthropic dimensions (Gupta and Pirsch, 2008; Jamali and Mirshak, 2007); other authors specify the ethical dimension using terms like “social”, “stakeholder” or “ecological” (Amaeshi et al., 2006; Ibrahim et al., 2003). Stated CSR-related philosophy includes
<table>
<thead>
<tr>
<th>Main category</th>
<th>First subcategory</th>
<th>Coding example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stated philosophy towards CSR</td>
<td>Environmental responsibility (223 codings)</td>
<td>“Ecological considerations largely determine the corporate activity of the corporations’ enterprises” (TUI, 2001)</td>
</tr>
<tr>
<td></td>
<td>Social responsibility (185 codings)</td>
<td>“The company sees itself as a part of society and, as a ‘Good Corporate Citizen’, feels obliged to act responsible” (Bayer, 2009)</td>
</tr>
<tr>
<td>CSR motives</td>
<td>Performance-driven (94 codings)</td>
<td>“Our key objective is profitable growth” (Allianz, 2000)</td>
</tr>
<tr>
<td></td>
<td>Stakeholder-driven (110 codings)</td>
<td>“The MAN group is committed to the stakeholder concept – besides the shareholders’ interests, the interests of our customers, employees, suppliers, creditors and all other stakeholders are adequately taken into consideration” (MAN, 2005)</td>
</tr>
<tr>
<td></td>
<td>Value-driven (100 codings)</td>
<td>“[…] is based upon the principle of sustainability and, especially in light of the difficult times our company faces, adheres to it. We consider sustainable action holistically. This includes economic standards as well as cultural, social and, naturally, ecological aspects” (Muenchner, Rück 2002)</td>
</tr>
<tr>
<td>CSR-related internal activities</td>
<td>Organizational activities (701 codings)</td>
<td>“Our Sustainability Council directs global activities in cooperation with the operative divisions, the regional and national companies as well as the central functions” (Henkel, 2006)</td>
</tr>
<tr>
<td></td>
<td>Products and production (902 codings)</td>
<td>“[…] worldwide legal compliances, which oblige everyone to adhere to the laws and regulations” (Bayer, 2000)</td>
</tr>
<tr>
<td></td>
<td>Activities in human resource management (275 codings)</td>
<td>“For newly developed products and procedures, we make sure from the very beginning that as little energy as possible is used and that natural resources are conserved” (ThyssenKrupp, 2001)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“We create products that are safe to produce, use, recycle and dispose of” (BASF, 2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“Hence, we encourage a culture in which everyone can contribute to the success […] regardless of nationality, culture, religion, age, sex or skin color” (Infineon, 2006)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“In 2002, Infineon has, as an incentive for its employees, launched the ESH Award” (Infineon, 2002)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“The BMW Group demands compliance with social and ecological standards of its suppliers too” (Beck et al., 2010)</td>
</tr>
<tr>
<td>CSR-related activities towards suppliers</td>
<td>Guidelines (95 codings)</td>
<td>(continued)</td>
</tr>
</tbody>
</table>

Table II. Coding scheme
statements that depict the philosophy towards CSR or “the range of business responsibilities” (Carroll, 1991, p. 40) and refers to codes for:

- social;
- environmental responsibility.

**CSR-related motives** address the reasons why companies engage in CSR (Idowu and Pappasolomou, 2007; Lougee and Wallace, 2008; Siegel and Vittalino, 2007). This study follows Maignan and Ralston (2002) and Ingenhoff and Sommer (2011) and coded three main motives for CSR:
(1) Value-driven motives, where CSR is understood as a part of corporate culture or as the expression of the company’s values (in terms of ethical not financial value), referring to the ethical responsibilities of the business.

(2) Stakeholder-driven motives, which acknowledge the importance of stakeholders for the company and where CSR is viewed as a reaction to the pressure and control of one or more stakeholder groups.

(3) Performance-driven motives, which are mainly economically oriented and based on profitability, that is where CSR is part of the company’s economic mission and a means of increasing its financial performance and competitive position.

**CSR-related activities.** A wide range of accounting research is dedicated to the analysis of annual reports with reference to social or environmental disclosures. In general, these studies distinguish between different categories of social or environmental disclosure, such as environmental, employee and ethical disclosures (Adams et al., 1998), but most of them also distinguish between different CSR-related activities including equal opportunity, personnel, community involvement and products (Abbott and Monsen, 1979), or commitments to investors, employees, community, customers, environment and communication (Calabrese and Lancioni, 2008). Other studies differentiate between CSR activities related to:

- social and non-social stakeholders, employees, customers, and the government (Turker, 2009);
- the workforce, customers, stakeholders, the environment and charity (Pedersen, 2009);
- environmental management, employment, supply chain management, the local community, controlling and reporting, and community volunteering (Perrini et al., 2007); and
- employment, the environment, the supply chain, the local community and volunteering, and engagement/human resource management (Russo and Tencati, 2009).

The following five categories of CSR-related activities can be distinguished:

(1) **CSR-related internal activities** include:

- organizational activities (i.e. CSR-related positions, codices, and certified management systems);
- activities in production (i.e. efficient production processes and environmentally friendly or ethical products); and
- activities in human resource management (i.e. CSR-related training, education, and volunteering programs, diversity management, employee suggestion systems).

(2) **CSR-related activities** towards suppliers, referring to:

- CSR-related guidelines such as minimum requirements for environmental and work-related issues that their suppliers must comply with; and
other CSR-related activities to provide a constant and lively exchange of knowledge, such as joint seminars or workshops.

(3) **CSR-related activities** towards society comprise:
- specific CSR-related reports or web sites; and
- neighbourhood projects to organize initiatives for community welfare, education and job search, mostly in the region where the companies are located.

(4) **Corporate giving** captures donations to education and research, sports, culture, social and environmental issues. In the present sample, the category consists mostly of activities focusing on disadvantaged teenagers, who are supported by various educational projects, but scholarships were also coded.

(5) **CSR-related cooperation** relates to collaborations with both for-profit and non-profit organizations, for example, cooperation with supranational organizations such as UNICEF or the United Nations Environment Program (UNEP) to comply with certain environmental or social guidelines or cooperation with universities to develop responsible products or production processes or to support education and research. Wanderley et al. (2008) measured a similar construct, “CSR partnerships”, which includes cooperation with companies, NGOs and/or governments. They reported that there were significant differences in the disclosures of CSR partnerships among industrial sectors; however, they did not specify which industries disclose more information than others.

Based on this coding scheme, the variables of the final categories and subcategories serve as an input for the quantitative analysis. Thus, the content analysis contributed to the quantitative analyses as this analysis enabled the translation of the raw data into numbers that were then applied to discover changes over time.

**Quantitative analysis and hypotheses development**

This section reports the results of the quantitative analysis. To guide this analysis, the research hypotheses which are based on the findings in the qualitative analysis and prior literature reviewed were developed first which corresponds with the research blueprint suggested by Srnka and Koeszegi (2007).

Previous research indicates that the field in which companies act has an influence on the credibility of their CSR communication (Du et al., 2010). This field can be operationalized via products or via the industry the company is part of. For the latter, it can well be argued that certain industries, such as the oil industry, have a bad reputation that is also attributed to the firms that are members of these industries (Aerts and Cormier, 2009). Legitimacy theory argues that companies can only endure if they comply with the norms and values of the society in which they are embedded (Dowling and Pfeffer, 1975; Gray et al., 1995; Schocker and Sethi, 1974). Thus, a company that in some way or another does not behave appropriately must fear a withdrawal of legitimacy, which in turn, can harm the company’s socially responsible image, diminishing the company’s reputation and ultimately its profitability. To remain legitimate, companies communicate topics that concern society such
as CSR activities. There is a large body of research focusing on legitimacy theory to explain social and environmental disclosure by corporations (Branco and Rodrigues, 2006; Hooghiemstra, 2000; Neu et al., 1998). For companies in controversial industries, that may have greater environmental and social impacts than others, legitimacy theory claims that they are expected to disclose environmental or social information more scrupulously to meet the comparatively higher expectations that stakeholders have in such companies and so secure their own legitimacy as perceived by major stakeholders (Branco and Rodrigues, 2006; Deegan and Gordon, 1996; Hasseldine et al., 2005). Likewise, Patten (2002) suggests that environmental disclosures may be perceived as less credible if they are from companies that belong to industries that have a high and negative impact on the natural environment. Other scholars have argued from a journalist’s point of view. Being part of a controversial industry may have an effect on how journalists perceive companies; thus, positive messages from those companies can be regarded as “green washing” (Greer and Bruno, 1996) and not be taken seriously (Aerts and Cormier, 2009; Hackston and Milne, 1996). Considering the above, industry sector is herein conceptualized as an independent variable that predicts the frequency of CSR-related disclosures in annual reports.

In general, it appears that companies provide information that is consistent with the particularities of their company or industry (Dye and Sridhar, 1995) or information that is directed at the most important groups of stakeholders arising from those particularities. Industries or companies that are, for example, highly dependent on their workforce (such as consulting or software companies) will probably communicate more information on activities in human resources when compared with chemical companies, which are likely to report more on environmental activities during production due to the potentially harmful environmental impact chemical companies may have. This argument can also be transferred to the different CSR-related activities. For example, Adams et al. (1998) report more employee-related disclosures for more controversial industries such as oil, chemicals, and autos. This finding can be attributed to the comparatively low reputations of these companies in their workforce or with potential future employees. This corresponds with the results of Cowen et al. (1987), who state that disclosures in human resource management differ by industry, being especially high in the chemicals industry and especially low in the food industry. Cowen et al. (1987) also suggest that disclosures with reference to community involvement differ by industry and are especially high in the chemicals industry. This difference can be attributed to the low reputation of chemical companies and the need to present chemical companies as responsible towards society. These considerations lead to the following hypotheses:

\( H_1 \). A more controversial industry will display more codings in CSR-related philosophy.

\( H_2 \). A more controversial industry will display more codings in value-driven CSR motives.

\( H_3 \). A more controversial industry will display more codings in CSR-related internal activities.

\( H_4 \). A more controversial industry will display more codings in CSR-related activities towards society.
Findings of the quantitative analysis
To address the hypotheses presented above, the frequencies of the codings outlined above were assessed. To distinguish between more and less controversial industries, the companies from the DAX-30 were categorized into three industrial groups: chemicals, pharmaceuticals and energy/utilities form the high-controversy group; automotive, transportation and tourism are the middle-controversy group; and consumer goods, financial services, manufacturing and TIME are the low-controversy group. The number of reports considered for the quantitative analysis was 57 for the high-controversy group, 96 for the middle-controversy group and 194 for the low-controversy group. The argument for grouping the industries in this way is mainly driven by environmental issues: industries that have a higher potential for environmental liabilities, such as the chemical industry, are more controversial than, for example, the consumer goods industry. In particular, the energy sector and utilities, chemicals and the pharmacy industry were found to be especially environmentally sensitive (Cho and Patten, 2007); all these industries are concerned with (the production of) polluting products or production processes that pose high environmental risks. The immediate environmental risk for the automobile and transportation sector is relatively low compared with the high-controversy group; however, the long-term environmental risk from the emission of CO₂ justifies their categorization in the middle-controversy group. To test the hypotheses, ANOVA followed by a Scheffe test was used. The results are shown in Table III.

In H₁, it is suggested that more codings in CSR-related philosophy can be found for more controversial industries. This hypothesis is only partially supported, as the low- and middle-controversy groups are not significantly different. H₂ concerning the controversial nature of industries and the communication of value-driven motives must be declined, as the groups do not differ significantly. In partial support of H₃, the high-controversy and the middle-controversy industry groups differ significantly.
from the low-controversy group in terms of the communication of internal activities but not from each other. There is partial support for \( H_4 \): the high-controversy industry group communicates significantly more activities to society than the middle- and low-controversy groups, but there is no significant difference between the last two groups. Finally, \( H_5 \) posits that more codings for CSR-related cooperation can be found in more controversial industries. This assumption is partially supported, as the low-controversy group differs significantly from the others, but the middle-controversy group does not differ significantly from the high-controversy group.

To uncover trends in CSR reporting, a longitudinal analysis compared the means of CSR-related motives and activities communicated in the annual reports spanning the years 1998 to 2009. The results reveal the following trends as shown in Figures 1-3.

In general, with regard to both CSR-related motives and activities, the longitudinal analysis of trends in CSR reporting reflects the growing importance of CSR in the stakeholder dialogue over time for all groups of companies. Starting from 1998, the aggregated number of CSR-related statements in the annual reports has been increasing, with the highest ratings in internal activities, corporate giving and cooperation as the most important aspects. Regarding all aspects in 2008 and 2009, there is a significant drop in the number and extent of CSR-related coding among all industry groups. Along with existing research insights (Njoroge, 2009; Karaibrahimoglu, 2010), a financial crisis results in reduced CSR budgets as well as the postponement or cancellation of social and ecological projects. This issue creates a dilemma, because to cope with the financial and economic downturn, organizations need to focus on meeting society’s needs (Wilson, 2008). With reference to specific differences in CSR reporting between industry sectors over time, the results of the longitudinal analysis is supportive of the ANOVA results as described above. High-controversy industry groups provided significantly more information than

![Figure 1](image-url)
middle-controversy and low-controversy industries with reference to all categories of CSR reporting. This difference can be attributed to the low reputation of companies in this group and the need to present as being responsible towards society. In sum, the comparison over time provide evidence to confirm significant differences between the categories of CSR reporting as communicated by companies from different

![Figure 2. A longitudinal analysis of CSR reporting in middle-controversial industries](image1)

![Figure 3. A longitudinal analysis of CSR reporting in low-controversial industries](image2)
industry sectors. The longitudinal analysis reveals comparable trends for all industry sectors in all categories of CSR-related statements, but noticeably on different levels of mean ratings with highest scores for the high-controversy group, medium scores for the middle-controversy industry group and comparable lower scores for the low-controversy group. These insights support the assumption that companies provide information that are consistent with the particularities of their company or industry (Dye and Sridhar, 1995) or information that are directed at the most important groups of stakeholders arising from those particularities. Industries or companies that are considered as controversial communicate more information on CSR-related activities when compared with other industry sectors, due to the potentially harmful environmental impact of their products or production processes.

Discussion

The qualitative part of this study deviates from similar research because it accounts not only for CSR activities but also CSR-related philosophy and motives. Both variables form the normative basis that encourages socially responsible behaviour and its reporting (Chen and Bouvain, 2009). If companies act based on the principle of doing good, this behaviour should spread throughout the organization and thus provide a basis for CSR practices among both managers and employees (Jones, 1995). Therefore, CSR communication in annual reports should be analysed within the normative framework of the underlying corporate philosophical principles and their related motives. The core of this study is the analysis of CSR communication by controversial industries. The empirical results provide evidence for the suggested hypotheses \( H_1 \) and \( H_3 \) - \( H_5 \). The \( H_2 \) concerning the controversial nature of industries and the communication of value-driven motives was declined, which can be explained by the relatively small frequency of codings for the value-driven motive in comparison with the other categories. However, more research is needed to further investigate this relationship.

Overall, for the partially supported \( H_1, H_3, H_4, \) and \( H_5 \) and considering the results of the longitudinal analysis, a common pattern is apparent, as the mean of codings rises from the low- to the middle- to the high-controversy industries. In this respect, the overall research question posed in the introduction can be answered affirmatively: companies in controversial industries seem to use CSR communication more often than those in non-controversial industries. This finding supports the idea from legitimacy theory that companies in controversial industries, those having higher environmental and/or social impacts than others, communicate more environmental and/or social information to proactively comply with the higher expectations of stakeholders. However, the question remains whether the higher intensity of CSR communication in a controversial industry can be seen as a true commitment or as a sign of green washing. Particularly industry sectors that have been declared unethical face the assumption that their CSR engagement is a strategic approach to hide what they really do in their daily business (Palazzo and Richter, 2005). In line with this, Scalet and Kelly (2010) found empirical evidence that companies publicly announce their positive CSR engagement; however, they do not typically communicate negative CSR events. With reference to the tobacco industry, Palazzo and Richter (2005) state that the deep distrust toward companies in this sector is strongly related to the harmful character of their products; their CSR activities may be perceived as
a “smoke curtain”. Therefore, when companies, that are involved with social or environmental issues and belong to “sinful” industries, position themselves as socially responsible and good social citizens, the stakeholders tend to be sceptical. In this context, Du et al. (2010) showed that stronger references to intrinsic (i.e. value-driven) motives lead stakeholders to a more positive view of the company, whereas extrinsic (i.e. performance-driven) motives possibly lead to less favourable attitudes toward the company, which is in line with the results of this study. However, to admit that companies have extrinsic motives in their CSR activities and communicate this accordingly could also enhance the credibility of a company and prevent accusations of green washing (Forehand and Grier, 2003). Reasoning this and with reference to the results of this study, there remains a need for future research, as outlined in the following section.

Contributions and research implications

In last decades, the topic of CSR activities and communication has been of great interest for academic research and managerial practice. In this area, particularly in recent years, there has been an on-going discussion about CSR engagement of companies in controversial industry sectors. While proponents state that “the controversial firms have legitimate right to develop and engage in CSR activities” (Cai et al., 2012, p. 468), opponents perceive CSR of controversial industries as an inherent contradiction “as industry’s core functions are in conflict with the goals of public health policies” (WHO with respect to the tobacco industry). Against this backdrop, this study examined annual reports to operationalize CSR communications from a company viewpoint with respect to corporate environmental and social disclosures. In the qualitative study, a category system that not only accounts for CSR-related activities but also for CSR philosophies and motives as the normative basis of CSR communication is derived. Based on a sample comprising the annual reports of all German DAX-30 companies from 1998 to 2009, the quantitative analysis addresses the question of whether companies in controversial industries communicate more intensely than companies in non-controversial industries and found partial support for several of the hypotheses. Referring to the industry comparison across all years and the longitudinal analysis, the results provide evidence for the assumption that companies in high-controversial industry sectors are more inclined to engage in CSR-related communication than companies in less-controversial industry sectors.

Recently, voluntary social and environmental reporting has been subject to criticism from scholars who have characterized such efforts as “often partial, incomplete, and self-serving public relations exercises that seek organizational legitimacy through appearance rather than changed behaviour” (Kuruppu and Milne, 2010), or, more simply put, green washing (Greer and Bruno, 1996). The results cannot entirely dispel the idea of opponents of CSR in controversial industry sectors who argue that CSR engagement in this case “is a distrustful attempt of ‘window dressing’ to legitimize questionable business and deceive stakeholders” (Cai et al., 2012, p. 467). Nevertheless, in accordance to proponents, there is empirical evidence that supports legitimacy theory: companies in controversial industries perform more CSR communication as they are confronted with the public’s increased demand for their businesses in particular to operate responsibly. This argument certainly does not prevent companies in controversial industries from doing wrong in the future but puts
them under more pressure to keep their promises. However, the motivation, especially for controversial industries, to adopt and communicate CSR should be examined by future research, as CSR communication can also be seen as a management strategy to prevent the introduction of rigid regulation and to distract from factually poor social or environmental performance (Moerman and van der Laar Smith, 2005).

This research is based on qualitative data, and it can be argued that content analysis generally lacks reliability and validity as an interpretative means of analysis. However, as Deegan and Gordon (1996) have noted, these difficulties are more significant when a rather small sample of documents is examined. In the present study, a reasonably large sample is examined and therefore, it can be concluded that the overall measurement error is negligible. In summary, with a combination of qualitative and quantitative analyses, this study builds upon and extends past research efforts in the field of CSR and CSR reporting, as it provides deeper insights into qualitative and quantifiable effects encompassing a rich category scheme that also accounts for the stated CSR-related philosophy and motives to engage in CSR related to different fields of CSR activities. Although the results are only initial empirical hints, they should be explored in further research in different ways. At first, the relationship of CSR communication with financial success could be investigated. Apart from benefits of CSR engagement such as positive effects on corporate reputation, employees’ commitment and motivation, or customer loyalty, the impact on financial performance measures has to be questioned: do investors value CSR activities of firms in controversial industry sectors? In this context, the role of institutions such as the membership of the prestigious Dow Jones Sustainability World Index might be of particular importance. Further, because the national culture of the reporting company is considered a determinant of CSR reporting (Aerts et al., 2008; van der Laan Smith et al., 2005), a study comparing controversial and non-controversial industries in different countries may lead to interesting results. Additionally, the analyses did not separate the home-market activities from the international activities of companies in different industries; given their multinational activities, there may be differences in the CSR commitments of especially controversial industries with international markets or production sites. Besides, it can be argued that certain industries especially financial services have become controversial in recent years following the on-going financial crisis. However, as CSR communication in business reports from the years 1998 to 2009 are examined, this aspect has not been considered. Future research should investigate the assumption that financial services have become a high controversial industry as well. Finally, it has to be stated that the research topic of CSR in controversial industry sectors remains highly polarizing and relevant. Even if there are some recent studies available, including the present one, the question of the motives and effects of CSR engagement in controversial industries merits further investigation.

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