



Corporate tax behaviour and environmental disclosure: Strategic trade-offs across elements of CSR?

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ABSTRACT

This study explores strategic trade-offs between corporate tax behaviour and environmental performance disclosure, both important elements of corporate social responsibility (CSR). Tax finances public goods and reduces investor wealth. Corporate strategies may balance such incompatible stakeholder interests through trade-offs across CSR elements. In this empirical study of Norwegian companies, there are no indications of trade-offs between corporate tax aggressiveness (TAG) and mandatory disclosure, in line with stick-to-the-rules/compliant behaviour for both. However, the positive relationship between TAG and voluntary disclosure indicates that strategic trade-offs exist and ensure an acceptable level of legitimacy from different stakeholders overall. Hence, corporate strategies differ for mandatory and voluntary actions, in line with a multidimensional legitimacy risk and legitimization strategy framework.

1. Introduction

There is an emerging debate of whether companies and stakeholders make trade-offs across elements¹ of corporate social responsibility (CSR) (Dowling, 2014). Companies need legitimacy from multiple stakeholder groups to survive (Aldrich & Ruef, 2006; Clarkson, 1995). Stakeholder expectations may be incompatible both within and across elements of CSR (Devinney, 2009).² Strategic trade-offs across elements of CSR may enable companies to meet at least some demands of stakeholder groups and thereby ensure sufficient legitimacy overall. The purpose of this study is to explore indications of trade-offs, or the relationship, between two important elements of CSR: corporate tax behaviour (CTB) and environmental performance disclosure in a Norwegian setting. Knowledge of such strategic considerations improves understanding of corporate behaviour and can guide policy to ensure governmental objectives.

In Norway, the large aquaculture industry seems to provide prominent examples of such trade-offs. Current fish-farming practices have negative environmental impacts pertaining to biodiversity/fish escapes, fish health/diseases/salmon louse, emissions, and more (Liu, Olaussen, & Skonhoft, 2014; Olaussen, 2018). Negative media attention to these issues poses a legitimacy risk. The industry has responded in several ways. A crucial part of the legitimization strategies is to emphasise tax payments

to local communities and employment in rural areas as positive CSR contributions (www.laks.no/laksenaringen, accessed 2019-01-30). Aquaculture organisations have communicated these tax arguments over many years through multiple channels, including extensive TV commercials. Hence, the strategy of offsetting environmental challenges by outlining contributions to communities through taxes is widely recognized. The controlling owner of SalMar, the world's fourth-largest salmon producer, acknowledges environmental challenges, even though they "work continuously to produce salmon with the least possible environmental impact". He emphasises, "The most important CSR is to contribute through tax payment" (Adresseavisen, 2017). The CEO of Nova Sea, another fish-farming company, says in relation to environmental criticism that "It is fisheries and in recent years fish-farming that provide light in houses along the coast" (Adresseavisen, 2015, p. 20). Politicians and newspaper editorials address the same issue: "The fish-farming industry still has reputational challenges because of escapes and diseases. If revenues from the new tax benefit local communities, it may be more attractive for municipalities to open up for fish-farming. This can limit the negative consequences of a new tax and provide more jobs in the coastal municipalities" (Adresseavisen, 2018, p. 2).

Trade-offs are of particular interest for tax behaviour, which is the latest element included in the CSR concept (Beloe, Lye, Cruickshank, &

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¹ Elements of CSR are, for example, environment, human relations, occupational health and safety, equal rights, diversity, community involvement, human rights, business behaviour and tax payment.

² Hence, (at least) pragmatic legitimacy risks.

Murphy, 2006; Christensen & Murphy, 2004). Society as a whole (external stakeholders) needs companies to pay their fair share of tax to fund provision of public goods and welfare (Dowling, 2014), including infrastructure vital for business (Stephenson & Vranceva, 2015). On the other hand, the wealth of shareholders (residual claimants) could benefit from corporate tax aggressiveness (TAG)—reduced tax payment (Friedman, 1970; Hasseldine & Morris, 2013). Conflicting interests among stakeholders necessitate strategic prioritisation: “Taxes are the result of a firm’s strategy and decisions” (Huseynov & Klamm, 2012, p. 809). Companies affect TAG through choices concerning legal tax planning, ethical questionable tax avoidance and illegal tax evasion. Although it is hard to balance the tax interests of shareholders and external stakeholders (incompatible expectations within a CSR element), it may still be possible to manage legitimacy risks by addressing (performance on) other CSR areas that tax-dissatisfied stakeholders find attractive (trade-offs across CSR elements). CTB legitimacy risks concerning external stakeholders (for example government and local communities) result mainly from tax-aggressive behaviours—namely, firms neglecting their societal obligation to pay a fair share of tax. Highly tax-aggressive strategies and the decoupling of CTB and tax disclosures are common, and tax avoidance and tax evasion cause enormous amounts of lost government revenue (2012, Christensen & Murphy, 2004; Dowling, 2014; Preuss, 2010; Sikka, 2010; Ylönen & Laine, 2015). As such, there has been increasing attention towards issues such as tax base erosion, profit shifting and tax havens from OECD, governments, media (including the Panama- and Paradise-paper leaks), Transparency International, Tax Justice Network and others.

Companies’ performance on other CSR elements, such as the environment, is also subject to strategic considerations (Adams & Whelan, 2009; Lindblom, 2010; Wilmschurst & Frost, 2000). What governments, local communities and environmental NGOs perceive as desirable or acceptable levels of environmental performance of corporate operations and products may deviate from the optimal level for shareholders’ profitability objectives (Friedman, 1970). The societal awareness/importance of environmental issues has increased over time. Hence, trade-offs to handle legitimacy risks associated with disclosure of environmental status and performance may occur.³ For example, low TAG may positively affect society’s perception of a company’s citizenship behaviour and offset legitimacy risks concerning questionable environmental performance (e.g., the aquaculture example above).

Corporations have the strategic option of trying to trade off legitimacy risks concerning what some important stakeholder groups perceive as bad CTB or environmental performance by highlighting what they perceive as desirable/good performance on the other CSR element (Dowling, 2014). Hence, the question is the degree to which such relationships between tax and environmental (or other CSR elements) performance exist more generally (and over time⁴) and their direction/sign (how the trade-offs are used).

There is much literature on both CTB (Hanlon & Heitzman, 2010) and CSR (reporting) (Fifka, 2013) separately. With a few exceptions (e.g., Crumbley, Epstein, & Bravenec, 1977), CTB has only been examined within a CSR context in the last few years (Stephenson & Vranceva, 2015). The few extant studies focus mainly on the relationship between CTB and an aggregated CSR concept.⁵ The results diverge widely (Ylönen & Laine, 2015). There are calls for more research to

³ The legitimacy risks associated with disclosure include what environmental status and performance the company claims. Volkswagen’s claim of “clean diesel” cars is one example of legitimacy costs when disclosure is false. Actual environmental status and performance might not be consistent with what the firm discloses. Hence, this study focuses on disclosure and what companies claim to be their environmental status or performance.

⁴ We do not investigate how this relationship changes over time in the current study.

⁵ All other elements of CSR are measured together as one concept/in one variable.

explore whether stable relationships exist and which determinants affect them (Dowling, 2014; Fallan, 2015; Hoi, Wu, & Zhang, 2013; Huseynov & Klamm, 2012; Laguir, Stagliano, & Elbaz, 2015; Lanis & Richardson, 2012, 2013, 2015; Preuss, 2012; Sikka, 2010).

Laguir et al. (2015) and Landry, Deslandes, and Fortin (2013) concluded that the mixed findings are caused (at least partly) by diverging relationships between CTB and different individual elements of CSR. An aggregated CSR concept may dilute these relationships. The current study takes this into account by concentrating on environmental issues.

However, a current meta-analysis (presented later) shows that results even for individual CSR elements are ambiguous. It is necessary to explore additional explanatory factors. All CSR elements have a common feature: they consider the company’s citizenship behaviour and are either mandatory or voluntary to adopt. In this study it is argued that corporate strategies differ for mandatory and voluntary actions. Theoretically, this is based on a novel use of legitimacy theory in CSR studies. Legitimacy is a multidimensional concept that separates regulatory legitimacy from other legitimacy dimensions for exactly this reason (Aldrich & Ruef, 2006). Empirically, differences between mandatory and voluntary actions are revealed in studies on disclosure of environmental performance (Bansal & Roth, 2000; Criado-Jiménez, Fernández-Chulián, Husillos-Carqués, & Larrinaga-González, 2008; Fallan, 2016; Larrinaga, Carrasco, Correa, Llena, & Moneva, 2002; Mobus, 2005). The effect of mandatory versus voluntary actions is also relevant in light of the international trend of increasing CSR/environmental reporting regulation (Camilleri, 2015; Nyquist, 2003), illustrated by the recent changes in the EU’s accounting directive concerning non-financial information (Johansen, 2016). Regulation versus voluntarism is addressed in a large stream of accounting literature. It is necessary to consider and separate mandatory and voluntary actions when analysing the relationship between CTB and CSR elements (Fallan, 2015).

The empirical objective of this study is to investigate the relationships (trade-offs) between corporate tax behaviour and mandatory and voluntary corporate environmental disclosures respectively. The study includes publicly listed companies on the Oslo Stock Exchange (OSE) within the jurisdiction of the Norwegian Tax Act and the Norwegian Accounting Act. Data on environmental disclosure were manually collected from the annual reports for 2009 based on content analysis. CTB is analysed as the degree of TAG by two measures of (cash) effective tax rates (ETR) for the years 2009, 2010 and 2012. The Norwegian setting is well suited for this investigation because there is a high public awareness of tax behaviour, environmental issues are an important part of the public agenda, and relevant regulations have existed for a long time.

One finding of this study is that a corporate stick-to-the-rules strategy seems to affect tax payments and mandatory environmental disclosure similarly, and no trade-offs are revealed. On the other hand, the results reveal a trade-off between CTB and voluntary environmental disclosure. High (low) TAG seems to be associated with a high (low) degree of voluntary environmental disclosure. Furthermore, the relationship between CTB and corporate environmental disclosure is diluted if mandatory and voluntary disclosures are aggregated into one concept of total environmental disclosure. This may explain the mixed findings in extant studies.

The authors have not identified any extant, published study that has (explicitly) analysed the relationship between CTB and mandatory CSR disclosure. This study is the first to explore whether possible trade-offs between CTB and environmental disclosure are related differently to mandatory or voluntary performance information, as called for by Fallan (2015). The revealed difference between mandatory and voluntary actions when it comes to corporate use of strategic trade-offs among CSR elements is relevant for well-informed use of corporate environmental disclosure and may have policy implications: knowledge that regulation (and probably enforcement) affects corporate strategic

behaviour is important for governments that need to protect the tax base and improve environmental status and performance disclosure. The need for separation of mandatory and voluntary actions/disclosure elements (characteristics *within* individual CSR elements) extends the conclusion of [Laguir et al. \(2015\)](#) and [Landry et al. \(2013\)](#) concerning separation of analysis *between* individual CSR elements. Another novel feature in the study is the use of the multidimensional legitimacy framework together with [Lindblom's \(2010\)](#) four legitimization strategies for hypothesis development.

2. Taxes as CSR concept

The question of whether tax payments/contributions are an element of CSR fits into the same discussion as whether there is such a thing as CSR ([Carroll, 1991](#); [Friedman, 1970](#)). Tax as a CSR concept is one of the most addressed questions in the emerging literature ([Ylönen & Laine, 2015](#)).

[Friedman \(1970\)](#) argued that “the social responsibility of business is to increase its profits”. Companies should engage in “CSR activities” only to the extent they increase profits. Because such measures are taken on the basis of self-interest, there is no such thing as CSR. This perspective only considers the interests of owners/shareholders. Tax is regarded as a cost for the firm that may reduce the contribution to residual claimants (shareholders) and affect investment decisions ([Fama & Jensen, 1983a](#)). High TAG is perceived as positive and necessary, *ceteris paribus*. Still, in real situations, TAG is a cost-benefit consideration for rational decision makers ([Allingham & Sandmo, 1972](#); [Dowling, 2014](#); [Erle, Hickey, Doherty, & Flexman, 2004](#); [Friedman, 1970](#)). The benefits are expected financial tax savings, and the potential costs consist of, e.g., expected reputational/legitimacy losses (including potential demand effects), penalties due to violations of the tax law and risks concerning future changes in regulation and enforcement. Extant studies indicate that perceived reputational/legitimacy effects are significant, but also that stock market effects are conditional, situational or uncertain ([Graham, Hanlon, Shevlin, & Shroff, 2014](#); [Hanlon & Slemrod, 2009](#)). Profit maximisation is also restricted by the “basic rules of the society, both those embodied in law and those embodied in ethical custom” ([Friedman, 1970](#)). Hence, companies/corporate management face economic, legal and ethical responsibilities. This indirectly recognises other stakeholders than owners as well, and is bridging neoclassical economic views and CSR perspectives.

Proponents of CSR argue that while economic performance is a basic building block, companies also face legal, ethical and philanthropic responsibilities: the CSR pyramid ([Carroll, 1991](#)). A company must consider the various and conflicting interests of many stakeholder groups, and not only those of shareholders ([Bansal & Roth, 2000](#); [Clarkson, 1995](#)), to ensure organisational legitimacy and survival ([Aldrich & Ruef, 2006](#); [Lindblom, 2010](#); [Suchman, 1995](#)). The CSR pyramid concerns all elements of CSR, such as environmental issues, human resources, community involvement, human rights, corporate governance, tax payment and other business behaviour ([Laguir et al., 2015](#)). In terms of tax, society as a whole (people, local communities, government etc.) needs companies to pay taxes ([Dowling, 2014](#)). High TAG (i.e., when firms neglect their social obligation to pay a fair share of tax) may cause legitimacy risks for the company. In CSR (reporting) research, legitimacy theory is the most used and allegedly the pre-eminent explanatory theory ([Campbell, Craven, & Shrides, 2003](#); [Vourvachis & Woodward, 2015](#)). The associated legitimacy risks consist of regulatory, moral, cognitive and pragmatic legitimacy risks ([Aldrich & Ruef, 2006](#); [Fallan, 2016](#); [Suchman, 1995](#)). According to [Aldrich and Ruef \(2006, p. 186\)](#), regulatory legitimacy pertains to “conformity with governmental rules and regulations”, whereas moral legitimacy reflects assessments of “conformity with cultural norms and values”, i.e. whether something is the right thing to do ([Suchman, 1995](#)). Cognitive legitimacy describes the degree to which a phenomenon is accepted by a society ([Aldrich & Ruef, 2006](#); [Suchman, 1995](#)), where the highest

form is taken-for-grantedness. Pragmatic legitimacy refers to how an organisation affects stakeholders’ self-interests, unlike the altruistic perspective of moral legitimacy ([Suchman, 1995](#)). Self-interest may differ among stakeholder groups.⁶

The responsibility of businesses regarding tax payment is not trivial ([Christensen & Murphy, 2004](#); [Dowling, 2014](#); [Freedman, 2004](#); [Hasseldine & Morris, 2013](#); [Kuznetsov, Kuznetsova, & Warren, 2009](#); [Sikka, 2010, 2013](#); [Ylönen & Laine, 2015](#)). Perceptions of the meaning of “paying a fair share of tax” differ among stakeholders. It is a question of resource allocation that also includes legal and ethical perspectives. High TAG benefits and, hence, secures pragmatic legitimacy from owners. At the other end of TAG, paying more tax than the law requires (very low TAG) is not necessarily more socially responsible ([Dowling, 2014](#); [Scholes, Wolfson, Erickson, Maydew, & Shevlin, 2002](#); [Ylönen & Laine, 2015](#)), but low TAG reduces pragmatic (from stakeholders such as government), regulatory and possibly other legitimacy risks. Conflicting views on the boundaries of responsible CTB also materialise in varying interpretations of legal and ethical consequences of law requirements: according to the CSR perspective, companies may be expected to abide by both the letter and spirit of the law ([Dowling, 2014](#)). Societies cannot—and do not want to—regulate all affairs through legislation. Additionally, everybody has ethical responsibility as part of society irrespective of whether they act as people or organisations ([Ravnaas, 1986](#)). This discussion recognises a corporate managerial latitude between mandatory and voluntary actions.

The concept of CSR has become widely accepted in theory, research studies, and in corporate talk/reporting ([Fifka, 2013](#); [Vourvachis & Woodward, 2015](#)). CTB has recently become a part of the CSR concept/operationalisation in research studies ([Beloe et al., 2006](#); [Christensen & Murphy, 2004](#); [Stephenson & Vracheva, 2015](#)). A majority of large, listed companies on major stock exchanges disclose tax information in their CSR reports ([Hardeck, 2012](#)).⁷ Issues such as corporate citizenship, public goods, welfare, democracy and civilisation establish CTB as a relevant and central part of CSR ([Avi-Yonah, 2009](#); [Bird & Davis-Nozemack, 2018](#); [Christensen & Murphy, 2004](#); [Dowling, 2014](#); [Preuss, 2012](#); [Sikka, 2010](#); [Ylönen & Laine, 2015](#)). This also means that taxes as a CSR concept is best illustrated through trade-offs. Governments’ tax revenues are imperative for well-functioning societies ([Bird & Davis-Nozemack, 2018](#); [Christensen & Murphy, 2004](#)). At the same time, companies’ contribution to their residual claimants (shareholders) and the market value of companies may increase by tax minimisation/high TAG. Such CTB, economic free riding, is without consequence for individual companies’ use of public goods ([Christensen & Murphy, 2004](#)). Still, legitimacy is crucial for the companies’ survival ([Suchman, 1995](#)). If tax payment is perceived as important for corporate citizenship/CSR, economic free riding may be perceived negatively by other stakeholders and pose (pragmatic and other) legitimacy risks. Tax’s importance, the conflicts of interest concerning it, and the fact that CTB and other CSR performance (disclosure) to a large extent are strategic corporate decisions ([Huseynov & Klamm, 2012](#); [Wilmshurst & Frost, 2000](#)), clearly establish tax as a CSR. This also emphasises the relevance of studies on the potential relationship and trade-offs between CTB and other elements of CSR.

[Dowling \(2014\)](#) raises the question of whether such trade-offs exist, i.e., whether companies make them and stakeholders accept them.⁸ Trade-offs and cost-benefit assessments are relevant under the CSR

⁶ Friedman’s view is a special case in which the interests of owners are paramount.

⁷ This does not necessarily mean that they see CTB as a moral issue ([Dowling, 2014](#)).

⁸ It should be noted that the need for such trade-offs (i.e., their strategic importance) is probably closely linked to the perceived significance of CSR legitimacy risks—the importance of tax payments and other CSR issues, respectively.

perspective to balance incompatible issues between and within all four levels of the CSR pyramid as well as the different elements of CSR and stakeholder groups with heterogeneous objectives. It reduces legitimacy risks. Trade-offs are also a basic feature of Friedman's perspective. The level of CSR performance (disclosure) should be optimised solely to maximise the company's market value/shareholders' wealth (a pragmatic legitimacy approach). This requires corporate management to engage in strategic cost-benefit considerations (Adams & Whelan, 2009; Vuontisjärvi, 2013). If CTB affects the value of the company, that is an indication that perceived socially questionable or irresponsible performance on one element of CSR can be outweighed by good CSR performance on another. All in all, regardless of CSR or Friedman perspectives, companies should make trade-offs across elements of CSR (and stakeholder interests) to ensure sufficient legitimacy. Empirically, the existence of trade-offs is indicated by a positive relationship between TAG and the relevant CSR element(s).

3. Previous research on the CTB–environmental CSR relationship

During the last few years, studies on the CTB–CSR relationship have emerged. Most of these studies examine the relationship between TAG and an aggregated CSR concept. The overall results are ambiguous, as shown in Table 1. Some studies find a positive relationship in line with trade-offs across elements of CSR (e.g., Lanis & Richardson, 2013), others find no unique relationship or mixed results (e.g., Landry et al., 2013), while some indicate that corporations with high CSR performance are less tax aggressive (e.g., Lanis & Richardson, 2012, 2015; Muller & Kolk, 2015). To explore whether stable relationships exist, or to explain mixed findings, mediating factors such as earnings performance (Watson, 2015), tax fees (Huseynov & Klamm, 2012) and ownership structure and internationalisation (Landry et al., 2013; Muller and Kolk, 2015; Sträter, 2016) have been suggested. Results differ between and within studies, even for studies of similar companies within one country (Lanis & Richardson, 2012, 2013).

CSR is a broad and heterogeneous concept. Corporate performance and legitimacy risks are likely to differ among CSR elements, and aggregation may randomly offset/dilute diverging relationships. Empirically, the direction and significance of the relationship between CTB and several individual CSR elements differ among the CSR elements within all identified studies that analyse this (Huseynov & Klamm, 2012; Laguir et al., 2015; Landry et al., 2013; Lanis & Richardson, 2012, 2015; Preuss, 2010, 2012). Therefore, a state-of-the-art mediating factor in this field is that CSR elements should be analysed separately, not aggregated into one general CSR concept, when their interplay with CTB is explored (Laguir et al., 2015; Landry et al., 2013).

Hence, this study addresses one specific CSR element's relationship with CTB: the natural environment, which is the most addressed element in CSR research. Legitimacy risks and strategic behaviour is relevant in connection with environmental disasters such as Exxon Valdez (Cho, 2009; Deegan, Rankin, & Voght, 2000; Patten, 1992; Walden & Schwartz, 1997). In the fish-farming example above, legitimacy risks and trade-offs between environmental and tax issues are openly recognised by the industry itself, even in normal day-to-day operations. Such situations may be common (De Villiers & van Staden, 2011). Trade-offs occur both in situations with low TAG/poor environmental performance (cf. fish farming⁹) and high TAG/good environmental CSR.¹⁰ Indications of trade-offs are revealed by positive relationships in Table 2. Laguir et al. (2015) found this in a quantitative study, while

⁹ The industry itself states that tax payment is a vital CSR contribution. Analysis of whether this actually means lower TAG than other industries is out of scope and left for other studies.

¹⁰ Managers and other stakeholders of US firms for which CSR is important do not (necessarily) view payment of corporate taxes as socially responsible (Davis et al., 2016; Dowling, 2014).

Table 1

Empirical results concerning the relationship between TAG and an aggregated concept of CSR.

	Positive relationship	No relationship	Negative relationship
Davis et al. (2016)	X	X	
Hoi et al. (2013)	X	X	
Landry et al. (2013)	X	X	X
Lanis and Richardson (2012)			X
Lanis and Richardson (2013)	X		
Lanis and Richardson (2015)			X
Muller and Kolk (2015)			X
Sikka (2010)	(X)	(X)	
Watson (2015)	X	X	X
Ylönen and Laine (2015)	(X)	(X)	(X)

Brackets indicate conclusions or interpretations of results in qualitative studies.

Sikka (2010) and Ylönen and Laine (2015) explore cases from major companies that have pledged to behave in an environmentally, ethically or socially responsible way while indulging in heavily tax-aggressive behaviour.

However, a review of existing studies on TAG versus environmental CSR in Table 2 reveals indications of positive (e.g., Ylönen & Laine, 2015), negative (e.g., Preuss, 2012) and especially no (e.g., Lanis & Richardson, 2015) or mixed relationships. The relationship diverges across (and partly within) these studies as it does for the aggregated CSR concept: there is a within environmental CSR element ambiguity for the CTB–environmental CSR relationship.¹¹ To the extent that stable, general relationships exist, these results mean that additional mediating factors should be considered. Based on a novel use of legitimacy theory, it will be argued in the hypothesis section below that it is necessary to separate mandatory and voluntary CSR actions to clarify relationships between tax behaviour and CSR elements.

4. Issues in previous literature arising from the measurement of CSR

Another issue that may affect the CTB–CSR relationship is operationalisation of performance. Environmental performance comprises issues concerning status and periodic change in environmental impacts, activities, objectives, risks, opportunities and such. Additionally, environmental performance includes disclosure of information about those issues. Studies on the CTB/environmental CSR interplay are split accordingly (Ylönen & Laine, 2015). Lanis and Richardson (2012), Preuss (2010, 2012), partly Sikka (2010) and Ylönen and Laine (2015) employ environmental disclosure, whereas Laguir et al. (2015); Landry et al. (2013); Lanis and Richardson (2015) and Sträter (2016) measure environmental CSR through database scores/rankings by showing, e.g. impacts (such as emissions) and/or perceptions of reputation/performance. The choice of approach is important because the measures have different properties and may answer different questions.

Corporate environmental disclosure is used as performance indicator in this study. Disclosure has multiple properties. It is (partly) regulated and conveyed in corporate annual reporting, as is CTB. Disclosure is an integral part of environmental performance, while at the same time it is supposed to depict the impact aspect of performance, both of which are likely to affect stakeholders' perceptions of impact/environmental CSR. It may be difficult and require time and resources to significantly change environmental impacts, something that is also affected by external and unexpected events, whereas the content and quality of disclosure is easier and faster to change in line with corporate

¹¹ Although the results are not disclosed here, the meta-study showed that similar ambiguous results are found for all individual CSR elements reviewed in several extant studies, not only for the environment.

Table 2
Empirical results concerning the relationship between TAG and corporate environmental CSR.

	Positive relationship	No relationship	Negative relationship
Laguir et al. (2015)	X	X	
Landry et al. (2013)		X	
Lanis and Richardson (2012)		X	
Lanis and Richardson (2015)		X	
Preuss (2010)		X	X
Preuss (2012)			X
Sikka (2010)	(X)		
Sträter (2016)		X	
Ylönen and Laine (2015)	(X)		

Brackets indicate conclusions or interpretations of results in qualitative studies.

strategic decisions.¹² Disclosure also widens the latitude of strategic considerations through opportunistic impression management concerning actual environmental impact and its consequences, intentions of improvement/change in environmental performance and perceptions of what a legitimate impact means—or should mean (Lindblom, 2010). This is important because the growing public interest in environmental CSR (and CTB) is likely to increase associated legitimacy risks. Environmental disclosure is an important strategic device to ensure legitimacy (Lindblom, 2010; Suchman, 1995), and both environmental disclosure and CTB are strategic corporate choices (Adams & Whelan, 2009; Huseynov & Klamm, 2012; Wilmshurst & Frost, 2000).

5. Hypothesis development

Studies on the CTB–CSR interplay have focused mainly on aggregate measures of CSR. Aggregation dilutes relationships with CTB when signs and significance differ for individual CSR elements. Hence, CSR elements should be analysed separately (Laguir et al., 2015; Landry et al., 2013).

Almost all CSR-reporting studies treat legitimacy as a one-dimensional concept (2005, Campbell et al., 2003; Cho & Patten, 2007; Cho, Guidry, Hageman, & Patten, 2012; Deegan & Unerman, 2011; Deegan et al., 2000; Patten & Crampton, 2003; Patten, 1992; Wilmshurst & Frost, 2000). However, legitimacy should be treated as a multi-dimensional concept (Aldrich & Ruef, 2006; Suchman, 1995). The reason is that although the legitimacy dimensions (regulatory, moral, cognitive and pragmatic) “often reinforce one another, they occasionally can come into conflict” (Suchman, 1995, p. 85). Aggregation may dilute effects. The aggregation of legitimacy dimensions may thus dilute effects or disguise the interplay between individual dimensions.

Separation of legitimacy dimensions is particularly relevant in connection with regulations (Fallan, 2016). Mandatory reporting is affected by regulatory, moral, cognitive and pragmatic legitimacy risks. Only the latter three are relevant for voluntary reporting. Regulatory legitimacy risks differ for mandatory and voluntary actions. There may also be interaction effects on the other dimensions. Differences between mandatory and voluntary actions are supported by the view that businesses’ responsibility is to maximise profit while conforming to the “rules of the society, both those embodied in law and those embodied in ethical custom” (Friedman, 1970). The rules of law concern regulatory

¹² The question of whether disclosure or impact/reputation-database performance measures are most relevant to compare with strategic CTB actions is complex. Relevant issues include varying time horizons for different CTB actions, both environmental measures may be affected by external and unexpected events, and opportunism, and disclosure has some degree of persistence/downward stickiness. Another featured validity and reliability challenge is low correlation among measures (scores/rankings) within and between impact/reputation databases. This is not surprising, because they match non-comparable items (and the databases are not developed for this purpose).

legitimacy risks as well as moral, cognitive and pragmatic risks that pertain to rules of ethical custom. The distinctive characteristics of regulatory legitimacy are also illustrated by the separation of legal, ethical, philanthropic and economic responsibilities in the CSR pyramid—hence, mandatory and voluntary elements of CSR (Carroll, 1991). This is reinforced by prospect theory, because the emotion of, e.g., paying a tax is different from that of giving away the same amount voluntarily (Kahneman & Tversky, [1979] 2000).

All identified extant, publicly available studies on the CTB–CSR relationship aggregate mandatory and voluntary actions into one measure. The existence of regulatory legitimacy risks means that the motivation for strategies behind mandatory and voluntary environmental disclosure may differ (Fallan, 2016; Larrinaga et al., 2002; Lindblom, 2010). Hence, the use of total environmental disclosure (the aggregate of mandatory and voluntary disclosure), e.g. Lanis and Richardson (2012), may dilute the actual relationships with CTB. Mandatory and voluntary reporting should be analysed separately (Fallan, 2015). The relevance of such an approach is emphasised because regulation versus voluntarism is one of the main debates in the accounting and CSR/environmental reporting literature (Criado-Jiménez et al., 2008). Therefore, the current study explores mandatory and voluntary actions in connection with the relationship between TAG and environmental reporting.

Taxes are important contributions to society, which should make it more difficult to insulate the firm against societal pressure to comply with the tax law (stick-to-the-rules). However, while compliance with statutory tax requirements calls for legal tax planning, it is still the corporation’s choice to engage in unethical tax avoidance and illegal tax evasion as well (Chen, Chen, Cheng, & Shevlin, 2010). Tax-aggressive behaviour is widespread (Christensen & Murphy, 2004; Dowling, 2014; Sikka, 2010; Ylönen & Laine, 2015).

Environmental reporting is also subject to regulation in more and more countries (Camilleri, 2015; Nyquist, 2003). Compliance is relevant for mandatory disclosure of information according to law and reporting standards, while other types of information disclosure are voluntary. Ultimately, it is up to the corporation to decide whether, what types of or how to report both mandatory and voluntary information (Bebbington, Kirk, & Larrinaga, 2012; Wilmshurst & Frost, 2000). There is overwhelming support in the research literature that corporations in general do not (fully) comply with environmental reporting regulations (Chauvey, Giordano-Spring, Cho, & Patten, 2015; Larrinaga et al., 2002; Luque-Vilchez & Larrinaga, 2016; Patten, 2005; Vormedal & Ruud, 2009). Simultaneously, non-compliant companies often disclose other types of environmental information voluntarily. Corporations’ approach is often a mix of mandatory and voluntary reporting (Fallan & Fallan, 2009). Reporting practices vary significantly among companies, both for mandatory and voluntary disclosure, within industries and companies of similar size.¹³

As illustrated above, it is the corporation’s decision whether to comply with tax and environmental reporting regulations, and it is evident that, to some degree, corporations take the opportunity to not comply. This discretion makes it relevant to analyse mandatory versus voluntary actions. Corporate decisions concerning CTB and environmental disclosure are based on the corporations’ perception of risks and opportunities and strategies to deal with these (Adams & Whelan, 2009; Huseynov & Klamm, 2012; Lindblom, 2010; Wilmshurst & Frost, 2000). Strategies concerning CSR are closely connected to building legitimacy on social and environmental issues to meet the expectations of society for appropriate business behaviour and outcomes (Bansal & Roth, 2000). Hence, legitimacy risks are important.

Regulation entails that a normative and formal regulatory legitimacy risk of non-compliance exists for both CTB and environmental reporting. Regulatory legitimacy risks enhance compliance and reduce

¹³ Industry and size are among the most important explanatory factors of environmental disclosure (Fifka, 2013).

the likelihood of trade-offs between CTB and mandatory environmental disclosure. To the extent that regulation changes people's perceptions about which CTB and environmental disclosure practices are (1) normatively right, (2) taken-for-granted, or (3) in stakeholders' self-interest, moral, cognitive, and pragmatic legitimacy risks may reinforce the effect of regulatory legitimacy risks. However, the perceived actual regulatory legitimacy risk may be weakened somewhat by lack of control/enforcement/negative consequences associated with non-compliance.¹⁴ Pragmatic legitimacy will also vary for different stakeholders.

Corporations may use four alternative legitimization strategies, or a combination of the four, to manage these legitimacy risks concerning tax payment and/or environmental CSR (Lindblom, 2010). First, legitimization may involve bringing the corporation's activity into conformity with the popular view of what is appropriate tax payment and/or environmental CSR—making internal adjustments to close the legitimacy gap. Second, the corporation may consider the current tax payment to be in accordance with legal tax planning and/or environmental CSR to be appropriate and attempt to demonstrate this to change stakeholders' perception of actual performance and thereby close the legitimacy gap. Third, the legitimization strategy may be to manipulate stakeholders to perceive tax payment and/or environmental CSR as appropriate, without any attempt to change actual performance or societal expectations so that they match. Fourth, the strategy may be to close the legitimacy gap by attempting to change societal expectations about corporate tax payment and/or environmental CSR instead of changing actual performance, such as educating/informing the relevant stakeholders about trade-offs concerning the provision of other favourable contributions to society (e.g., arguing that low corporate tax payment is necessary to maintain jobs or afford efforts to combat environmental challenges). Several of these four strategies are illustrated in, e.g., Vuontisjärvi (2013).

Strategies 1 and 2 will reduce the necessity of trade-offs because corporate actions concerning tax payment and environmental CSR are, or will be, in line with societal expectations. Strategy 2 indicates that the corporation actually abides by the regulations, refraining from tax measures other than legal tax planning and conforming to mandatory environmental disclosure practices. Strategy 1 means that behaviour is approaching compliance. The opposite is true for strategies 3 and 4, which offer scenarios in which corporations choose not to comply with regulations in all areas. Hence, trade-offs are more likely. Still, strategy 4 may be more prone to trade-offs across CSR elements (which is the current interest), whereas strategy 3, to a larger extent, also concerns trade-off considerations within elements of CSR (e.g., with a true and fair view).

Additionally, the theory suggests that the existence of regulations will increase the likelihood of using strategies 1 and 2, because the regulatory legitimacy risk makes compliant behaviour more important.

The concept of TAG does not distinguish among legal tax planning, ethical questionable tax avoidance and illegal tax evasion. Public opinion will rarely be so well informed as to know whether the level of TAG is achieved with legal measures alone (compliant behaviour) or through avoidance and evasion as well. However, compliance with the statutory requirements for environmental disclosure is easier to observe and is another way to reveal a corporation's willingness to abide by the law. Compliance with these regulations may serve as a surrogate/signal for CTB (strategies 1 and 2), even though mandatory disclosure may also be part of more opportunistic strategies (3 and 4). Regulatory legitimacy risks increase the inclination to choose strategies 1 and 2 for

both CTB and environmental disclosure.

Based on legitimacy risk and legitimation strategy perspectives, the relationship between TAG and mandatory environmental disclosure is likely to be negative. Trade-offs between these elements of CSR are expected only to a limited extent. Even if there is a widespread aversion to pay any form of tax, a corporation complying with mandatory environmental requirements will more likely follow the letter and spirit of the tax law. If management prioritises a stick-to-the-rules strategy for the corporation, it will probably do so both for tax payments and for mandatory environmental reporting (and vice versa). This is hypothesised thus:

H1. There is a negative relationship between corporate tax-aggressive behaviour and the degree of mandatory environmental disclosure.

CTB is regulated by law and, hence, is subject to regulatory legitimacy risks as well as moral, cognitive and pragmatic risks. Conversely, environmental disclosure is potentially, to a large degree, voluntary. Voluntary environmental actions are only subject to moral, cognitive and pragmatic legitimacy risks. The absence of regulatory legitimacy risks indicates that the likelihood of opportunistic behaviour is higher for voluntary than for mandatory disclosure. While reporting quality differs significantly among companies, environmental disclosure is often found to be incomplete and unrelated to the corporations' actual environmental performance, dominated by positive and lack of negative information (even during environmental crises) and lack of quantitative, specific and verified information (Adams, 2004; Deegan et al., 2000; Larrinaga et al., 2002; Niskanen & Nieminen, 2001; Patten & Crampton, 2003; Ylönen & Laine, 2015). Because of the lack of regulatory legitimacy risk, the relationship between CTB and voluntary environmental disclosure is likely to differ from the situation predicted for mandatory disclosure.¹⁵

Disclosure has a dual role in this CSR/legitimacy context. It is both a legitimization tool (Lindblom, 2010) and an integral part of environmental performance. The latter concerns the objective of providing useful information for stewardship/accountability and resource allocation purposes (Fallan, 2016; Gjesdal, 1981). Empirical studies of CSR reporting quality strongly indicate that voluntary environmental disclosure is mostly a legitimization device and, only to a lesser extent, an accountability mechanism (Boiral, 2013; Patten, 2005; Patten & Crampton, 2003). The hypothesis development in this text considers disclosure only as a legitimization tool, the aspect that is currently perceived to be most relevant.

Legitimacy theory predicts that corporations respond to pressure from society/multiple stakeholder groups by providing voluntary environmental information to legitimise their existence and actions and demonstrate society's need for their services. Lindblom's (2010) four legitimization strategies illustrate how and why corporations use voluntary environmental disclosure in different CTB scenarios. Strategies 1 and 2 are scenarios where TAG is at or approaching an acceptable level, in line with the expectations of the general public. Many stakeholders perceive this as good CSR performance. Companies may want to make CTB disclosures to inform the stakeholders about it. The perceived legitimacy risk is low. There is no need to offset CTB legitimacy risks by improving legitimacy on other CSR elements through increased disclosures. On the contrary, a good CSR standing on tax reduces the need for voluntary environmental disclosure to complement mandatory environmental disclosures and improve environmental legitimacy. Hence, the degree of voluntary environmental disclosure is low, *ceteris paribus*. The positive relationship between TAG and the degree of voluntary environmental disclosure is in line with a trade-off between these CSR elements.

¹⁴ Auditors are not required to confirm the "truth" of the disclosed information (compare statements with underlying circumstances), only that companies disclose information about the required topics/content. The latter task will rarely be significant concerning an audit opinion. The government has never enforced the environmental reporting regulations.

¹⁵ Although the regulatory legitimacy risk might be lower for voluntary environmental disclosure, there are still potential litigation and business risks if such disclosure misleads investors and customers.

Strategies 3 and 4 are situations in which TAG is relatively high. The regulatory, moral, cognitive and partly pragmatic¹⁶ CTB legitimacy risks are higher than for the other strategies. The opportunistic strategy 3 focuses mostly on manipulative CTB disclosures (a within-CTB trade-off). The effect on and degree of voluntary environmental disclosure is likely to be relatively low, *ceteris paribus*. Hence, only a limited extent of trade-offs between CSR elements is expected. Strategy 4, on the other hand, ensures an acceptable level of legitimacy overall by compensating low CTB legitimacy with increased environmental legitimacy. Here the attention is directed to environmental issues (their environmental actions/measures and so on) by extensive positive voluntary environmental disclosures to change expectations about CTB. Companies may admit that they are tax aggressive, but that such behaviour, e.g., provides resources to prevent salmon escapes and disease (solves environmental problems). Here, the positive relationship between a high TAG and high degree of voluntary environmental disclosure indicates a trade-off between these CSR elements. In practice, empirical findings indicate that a combination of strategies 3 and 4 is common: firms avoid or provide opportunistic communication concerning high TAG while engaging in voluminous positive voluntary disclosures on other CSR elements (Sikka, 2010; Ylönen & Laine, 2015). This is also in line with trade-off arguments.

To summarise, legitimacy risks and Lindblom's strategies/scenarios for voluntary disclosure as a legitimisation tool indicate a high likelihood for trade-offs. Trade-offs may occur for companies with both high and low TAG. The argument is further strengthened by Lindblom's (2010) recognition that companies may apply several strategies simultaneously concerning different issues, both proactive and reactive. Hence the likelihood of trade-offs concerning voluntary disclosure, undertaken at any point in time by many companies, increases. This is hypothesised below:

H2. There is a positive relationship between corporate tax-aggressive behaviour and the degree of voluntary environmental disclosure.

The hypotheses above indicate that the relationships between corporate TAG and mandatory and voluntary environmental disclosure, respectively, move in opposite directions. The consequence is that the relationship between corporate TAG and total environmental disclosure (the aggregate of mandatory and voluntary reporting) is diluted. It becomes uncertain or absent, in line with the mixed results of extant studies in Tables 1 and 2.

6. Research design

6.1. Sample

The hypotheses are tested based on cross-sectional data from the annual reports of publicly listed corporations on the Oslo Stock Exchange (OSE) and corporate information provided by OSE. A total of 269 companies were listed on OSE (including Oslo Access). Initially, the data set consisted of 147 of these companies randomly selected to study environmental disclosure in a Norwegian setting. The extensive manual effort required to collect environmental disclosure data necessitate the sample size to be small. This sample was used in the present paper after adding tax behaviour data from the selected companies to answer the present research questions. The initial sample included some corporations not subject to the ordinary Norwegian Tax Act. The tax regimes of oil and gas companies in Norway (within the jurisdiction of the Petroleum Tax Act) and the shipping industry differ significantly from the statutory tax rates in the ordinary Norwegian Tax Act. These companies were excluded from the sample. Next, companies that have negative income were dropped to prevent distortion of the TAG measurement (Lanis & Richardson, 2012).

¹⁶ The pragmatic legitimacy risk among owners/shareholders is low with high TAG, but it is higher concerning e.g. government.

Table 3
Sample.

Sampling	TAG ₁	TAG ₂
Companies listed on OSE (including Oslo Access)	269	269
Initial sample of OSE companies randomly selected	147	147
– Companies not subject to the ordinary Norwegian tax regime removed	13	13
= Companies subject to the ordinary Norwegian tax regime	134	134
– Companies having negative pre-tax income for a single year (TAG1)/three years (TAG2)	42	23
= Net sample for 2009 (TAG1)/2009, 2010 and 2012 (TAG2)	92	111

The second dependent variable (TAG₂) has a lower dropout number than the first (TAG₁) because it includes three years' income data. All companies in the net sample are within the jurisdiction of the Norwegian Tax Act, the Norwegian Accounting Act, and the Norwegian Public Limited Liability Companies Act (Table 3).

6.2. Operationalisation of the dependent variables

In the corporate taxation literature there is a strong emphasis on the use of several alternative tax measures (Plesko, 2003). This illustrates challenges in measuring tax behaviour, even though proxies exist. In the CSR literature, seven of the 13 identified, publicly available, quantitative studies on the relationship between tax behaviour and CSR employ more than one measure (2015, Hoi et al., 2013; Huseynov & Klamm, 2012; Laguir et al., 2015; Landry et al., 2013; Lanis & Richardson, 2012; Ströter, 2016). Within each of those seven, the relationship between CTB and CSR differs between tax measures in three studies (though for some, just barely) (Huseynov & Klamm, 2012; Laguir et al., 2015; Sträter, 2016). Still, to obtain more robust results, two CTB measures are used in the present study: TAG₁ and TAG₂.

TAG₁ and TAG₂ are measured based on effective tax rates (ETR). ETR is chosen because it captures important parts of tax-aggressive strategies. It is suitable because it is easy for stakeholders to compare effective ETR and the statutory tax rate for corporations. If deemed too low, it could easily cause public outrage. ETR is also the most commonly used measure of TAG in the corporate taxation literature (Chen et al., 2010; Gupta & Newberry, 1997; Lanis & Richardson, 2011), and 9 of the 11 identified regression-based CSR/CTB studies use ETR measures (Davis, Guenther, Krull, & Williams, 2016; Hoi et al., 2013; Huseynov & Klamm, 2012; Laguir et al., 2015; Landry et al., 2013; Lanis & Richardson, 2012, 2013; Muller & Kolk, 2015; Watson, 2015). Discussions on advantages and disadvantages of ETR as CTB proxy are found in, e.g., Dowling (2014); Laguir et al. (2015), Lanis and Richardson (2012, 2015) and Watson (2015). ETR is here defined as income tax expense currently payable (from continuing operations) divided by pre-tax accounting (book) income. This measure is referred to as cash ETR in the literature. ETR is truncated into the range between 0 and 1, in line with previous studies (Lanis and Richardson, 2012). The dependent variables, TAG₁ and TAG₂, equals (1–ETR), yielding a variable where increasing values indicate high TAG. TAG₁ is based on cash ETR data for one year (2009)—cf., e.g., Hoi et al. (2013); Laguir et al. (2015); Landry et al. (2013); Lanis and Richardson (2012), and Watson (2015). Dyreng, Hanlon, and Maydew (2008) preferred long-term ETR measures because of the possible fluctuation in annual rates. Huseynov and Klamm (2012) and Davis et al. (2016) used such variables. Therefore, TAG₂ is based on three years' cash ETR data. The statutory tax rate in Norway on taxable income was 28% both in 2009, 2010 and 2012, which is included in TAG₂.¹⁷

ETRs frequently differ from the statutory tax rate for corporations. The measure is based on a combination of data from the tax accounts

¹⁷ 2012 was chosen to have data further away from the financial crises. From 2014 to 2019 the statutory tax rate in Norway was reduced to 22%.

(the current tax payable generated from taxable income) and data from the financial accounts (pre-tax income based on generally accepted accounting principles). The book-tax differences between the financial accounting income and the taxable income generate both temporary and permanent differences that contribute to variation in ETRs (Lanis & Richardson, 2012). Tax-aggressive behaviour includes different ways to lower taxable income that may affect corporate taxes by reducing taxable income while financial accounting income is maintained. The consequence is lower ETR and higher TAG. The critical tax-related issue in the present study is how stakeholders perceive tax-aggressive strategies and the reputational costs of such behaviour (e.g., Graham et al., 2014; Hanlon & Slemrod, 2009).

6.3. Operationalisation of the independent variables

6.3.1. Mandatory and voluntary disclosure

Total environmental disclosure consists of mandatory and voluntary disclosure. The operationalisation of these variables (TOTDISC, MANDISC and VOLDISC, respectively) is based on content analysis, which is the most common approach for measuring the environmental information content of reporting (Fifka, 2013). Content analysis provides a systematic numerical basis for comparing companies' disclosures through quantitative analysis. The meaning of each relevant sentence in companies' reporting is classified into predefined, mutually exclusive categories. The chosen disclosure categories and an associated numerical rating system make up a quality index of disclosure (Wiseman, 1982).

The quality index in the current study is an adaptation from Wiseman (1982)—a widely used approach (Guidry & Patten, 2010). The system consists of two types of disclosure categories, (I) information content and (II) other information quality characteristics, and a numerical rating system (III). First, there are 17 content categories (I). The categories are adapted from a categorisation system developed by Ljungdahl (1999), UNCTC (1991) and Fallan and Fallan (2009). The content categories are listed in Table 4 and described in Appendix A. The breadth of disclosed information content, the number of categories disclosed, is a quality dimension in itself. Second, disclosures concerning each of the 17 content categories are reviewed to identify additional information quality characteristics (II). Whether disclosures are monetary¹⁸, quantitative¹⁹ or narrative and whether they are company-specific²⁰ or general²¹ is recorded in fixed subcategories. Because several sentences may be assigned to each content category, several of these subcategories may be present for each of the 17 content categories for each company. Third, according to Wiseman's (1982) rating system (III), three points are awarded for monetary and quantitative information, two points for company-specific information and one point for general and narrative information. To sum up, this means that the annual report is analysed for the presence or absence of information concerning 17 content categories and five subcategories. The total disclosure score (TOTDISC) per company, the degree of TOTDISC, is obtained by summarising the points awarded from the numerical rating system for all present categories and subcategories in this 17 × 5 matrix.

Additionally, the hypotheses require a distinction between mandatory and voluntary disclosure. In Norway, the regulation of corporate environmental reporting is closely tied to accounting regulations.²² The

Norwegian Accounting Act specifies enterprise types with statutory obligations to keep accounts according to the law, and these enterprises were in 2009 subject to regulation of environmental disclosure in the board of directors' report. The statutory obligation to report environmental information is stated in the Norwegian Accounting Act § 3-3a,²³ as illustrated in Table 4. The Norwegian Accounting Act is characterised as framework legislation without detailed regulation (Kvifte & Johnsen, 2008). Its legal provisions are supplemented by more detailed, separate reporting requirements and recommendations in the accompanying accounting standard—the NRS 16 board of directors' report. The environmental reporting requirements of NRS 16, including the Norwegian Accounting Act provision, are quoted in Appendix B. The board of directors must provide information pertaining to the environmental impact of running the business, including inputs and products in a life-cycle perspective, and measures to prevent and reduce negative impact. The statutory requirements mostly address information content, cf. (I) above, and to some extent form ("quantity"), cf. (II) above. Together, Table 4 and appendices A and B depict mandatory disclosure. Three of the 17 content categories match the mandatory environmental disclosure requirements, as outlined in Table 4. The variable MANDISC is operationalised by counting the points regarding the three mandatory content categories (a 3 × 5 matrix).

Other aspects regarding how much, what type and in what form environmental information is disclosed are left up to the company. These content types constitute voluntary disclosure. In this study VOLDISC is operationalised by the remaining 14 categories in Table 4. VOLDISC is measured by adding up the points for the 14 voluntary content categories (14 × 5 matrix).

The annual report was selected as the only data source for environmental disclosure. This is because annual reports appear to be representative of all corporate environmental disclosure content (Tilt, 2008) and include the board of directors' report.

6.3.2. Control variables

To control for other effects on corporate TAG, some commonly adopted variables in behavioural studies on financial, tax and CSR accounting are included (Fifka, 2013; Halme & Huse, 1997; Laguir et al., 2015; Landry et al., 2013; Lanis & Richardson, 2012, 2013, 2015). The operationalisation of these variables is explained below.

The size of the corporation (SIZE) is perceived as a relevant control variable when corporate behaviour is studied (Fifka, 2013). Sales, assets, market value and number of employees are common proxies (Ljungdahl, 1999). Accounting-based measures (sales and total assets) are dropped because of industry differences in how income statements and balance sheets are classified, e.g., the accounts of financial institutions differ from those of other industries. In line with Hoi et al. (2013) and Watson (2015), SIZE is measured as the natural log of the number of employees.²⁴

Profitability and leverage measures are used in all similar studies (Laguir et al., 2015; Lanis & Richardson, 2012). Return on equity (ROE) is measured by profit of the year divided by equity, and debt ratio (DEBT) is total liabilities divided by total assets (Gupta & Newberry, 1997). Both variables are collected from the corporation's financial statements.

CEO tenure (TENURE) is the number of years the manager has held the office (Lanis & Richardson, 2012, 2015). TENURE is a proxy for experience and the ability to influence the board composition and exert power as an agent for shareholders and other stakeholders.

The degree of board ownership (BOARD) is also included in, e.g., Lanis and Richardson (2012, 2015). The board is the highest internal control mechanism for monitoring the decisions and actions of top

²³The Norwegian Accounting Act provision equals the first paragraph of Appendix B.

²⁴Robustness checks reveal that the main results are similar when SIZE is measured by the natural log of total assets.

¹⁸E.g., costs in NOK

¹⁹E.g., emissions in tons

²⁰E.g., information about a detailed and approved plan for reduction of the company's emissions

²¹E.g., information that can be copied directly from other companies' disclosure because it does not require a real commitment, such as policy statements saying that the company does not want to affect the environment more than normal for these kinds of activities

²²The Norwegian regulatory system in 2009 is described in Fallan (2016); Nyquist (2003) and Vormedal and Ruud (2009).

Table 4
Environmental content categories. Mandatory and voluntary disclosure.

Category no.	Content category	Mandatory environmental disclosure	Voluntary environmental disclosure
1	Environmental impact—processes	X	
1a	Type of impact	X	
1b	Impact quantity	X	
1c	Measures to reduce (increase) negative (positive) impacts	X	
2	Environmental impact—products	X	
2a	Type of impact	X	
2b	Impact quantity	X	
2c	Measures to reduce (increase) negative (positive) impacts	X	
3	No environmental impact	X	
4	Environmental policy		X
5	Environmental objectives		X
6	Environmental authorities		X
7	Environmental events		X
8	Environmental organization		X
9	Environmental audits		X
10	Audits of environmental disclosure		X
11	Environmental investments		X
12	Environmental costs/revenues		X
13	Environmental liabilities		X
14	Clarification of environmental concepts		X
15	Accounting (reporting) principles		X
16	Economic non-monetary information (demand-side)		X
17	Economic non-monetary information (supply-side)		X

management. Fama and Jensen (1983a, 1983b) underlined the importance of separating decision management and decision control in public corporations. The separation of residual risk-bearing from decision management leads to decision systems that separate decision management from decision control of the board of directors. The decision problem between shareholders and top management can be reduced by means of a high degree of board member ownership. Tax reduces the residual (income) left for the owners. BOARD is measured by the proportion of shares owned by board members and closely connected persons, such as spouses or persons with whom the board member is cohabiting in a marriage-like relationship, dependent children and enterprises in which the board member or closely connected persons have controlling interest. BOARD is a continuous variable that can theoretically take on values from 0 to 1.

In companies with separation of ownership and control, there is a decision problem between the shareholders and management. Shareholders primarily want to ensure that management decisions maximise the value of the company and thereby positively consider corporate tax-aggressive behaviour. If the corporation has a concentrated ownership with few large shareholders, internal monitoring by the shareholders can be an effective way to solve the decision problem by reducing management power (Berle & Means, 1932). However, in public companies with widely distributed shareholding, the costs of internal monitoring for small shareholders may prevent them from influencing the corporation's tax behaviour. A specialised top management must consider how a tax-aggressive behaviour will affect the corporation. It is easier for the top management to please other stakeholders than the short-term interests of shareholders in corporations with dispersed ownership because the balance of power disfavours small shareholders. Dispersed ownership (DISPERSED) is measured as $(1 - \text{the accumulated ownership share of the five largest owners})$. This obtains increasing measurement of dispersed ownership in the analysis.

Two other structural dimensions of ownership are included: the proportion of total shares owned by the government (GOVERN) and by foreign investors (FOREIGN). Governmental ownership will possibly reduce TAG, and foreign ownership will possibly enhance TAG. However, public corporations on the stock exchange must treat every shareholder equally.

Furthermore, the present model includes company growth opportunities (GROWTH) measured by the natural log to the market-value-of-equity divided by the book-value-of-equity (Landry et al., 2013; Lanis &

Richardson, 2015) and asset structure (STRUCTURE) measured by fixed assets divided by total assets (Laguir et al., 2015; Lanis & Richardson, 2015). Hence, these possible effects on TAG are uncertain and are controlled for. AUDIT is a dichotomous variable concerning audit opinions where companies with deviations disclosed in the audit report have the score of 1, and companies with a clean audit report have a score of 0.

Similar studies control for industry sector (INDSEC) (Laguir et al., 2015; Lanis & Richardson, 2012). The current classification is done by OSE, based on the Global industry classification standard (GICS). Because of the sample size, the 12 GICS sectors are merged into five, based on both average TAG and perceived similarity of operations or output. INDSEC1 includes telecommunication services and information technology; INDSEC2 consists of energy and utilities; INDSEC3 contains industrials, materials and consumer discretionary; INDSEC4 is finance, real estate and equity certificates; and INDSEC5 is health care and consumer staples. Each variable is measured by a dichotomous variable with the score of 1 if the company belongs to that sector and 0 if it does not. (The highest VIF values in the regression analysis are between industry variables. These VIFs were reduced with fewer industry variables.)

6.4. The regression models

The regression models are based on cross-sectional analyses of data for revealing the association between corporate TAG and environmental disclosure. An ordinary least square (OLS) estimation is used. Model A adopts the independent variable TOTDISC consisting of the sum of mandatory and voluntary disclosure.

$$(A) \text{TAG}_j = \alpha_0 + \beta_1 \text{TOTDISC} + \beta_2 \text{SIZE} + \beta_3 \text{DEBT} + \beta_4 \text{ROE} + \beta_5 \text{TENURE} + \beta_6 \text{BOARD} + \beta_7 \text{DISPERSED} + \beta_8 \text{GOVERN} + \beta_9 \text{FOREIGN} + \beta_{10} \text{GROWTH} + \beta_{11} \text{STRUCTURE} + \beta_{12} \text{AUDIT} + \beta_{13} \text{INDSEC1} + \beta_{14} \text{INDSEC2} + \beta_{15} \text{INDSEC3} + \beta_{16} \text{INDSEC4} + \beta_{17} \text{INDSEC5} + \varepsilon_i$$

The notation j is 1 for TAG_1 and 2 for TAG_2 .

Model B differs from model A by including the independent variables for mandatory and voluntary environmental disclosure, respectively, instead of the aggregated variable of total disclosure. This model is designed to answer the questions put forth in the two hypotheses.

$$(B) \text{TAG}_j = \alpha_0 + \beta_1 \text{MANDISC} + \beta_2 \text{VOLDISC} + \beta_3 \text{SIZE} + \beta_4 \text{DEBT} + \beta_5 \text{ROE} + \beta_6 \text{TENURE} + \beta_7 \text{BOARD} + \beta_8 \text{DISPERSED} + \beta_9 \text{GOVERN} + \beta_{10} \text{FOREIGN} + \beta_{11} \text{GROWTH} + \beta_{12} \text{STRUCTURE} + \beta_{13} \text{AUDIT} +$$

$$\beta_{14}INDSEC1 + \beta_{15}INDSEC2 + \beta_{16}INDSEC3 + \beta_{17}INDSEC4 + \beta_{18}INDSEC5 + \epsilon_i$$

7. Results

7.1. Descriptive statistics

Table 5 reports the descriptive statistics of the variables. TAG has a theoretical range of 0–1. The actual range of TAG is from 0 to 1; the mean TAG₁ is .75 (SD = .24), and TAG₂ is .80 (SD = .19). According to the Norwegian tax law, the formal corporation tax rate was 28% for these three years, which is equivalent to a TAG score of .72. TAG scores higher than .72 may indicate tax-aggressive behaviour.

TOTDISC is the sum of MANDISC and VOLDISC. The actual range is from 0 to 55, and the mean is 10.94 (SD = 11.02). MANDISC varies from 0 to 15, and the mean is 4.23 (SD = 3.48). VOLDISC varies from 0 to 46, with a mean score of 6.71 (SD = 8.37).

The mean score of SIZE measured by the natural log of number of employees is 6.23 (SD = 1.97). This implies that the actual mean number of employees is 2 558 (SD = 6 054) and range from 1 to 40 300 employees. DEBT ratio has a mean score of .63 (SD = .22). ROE differs widely among the corporations and has a mean score of -.01 (SD = .62). TENURE, the number of years the manager has held the office, ranges from 0 to 33 years. Mean tenure is 6.07 years (SD = 7.08). BOARD, the proportion of shares own by board members, varies from 0 to 88%. The control variables for ownership structure are as follows. DISPERSED, the proportion of shares owned by people other than the five largest owners, ranges from 5% to 85%. The mean of DISPERSED is .49 (SD = .22). GOVERN varies from 0 to .54, with a modest mean governmental ownership of .02 (SD = .10). The proportion of total shares own by foreign investors (FOREIGN) varies from 0% to 81% and has a mean of .19 (SD = .22). GROWTH shows a mean of 6.99 (SD = 1.03). The STRUCTURE mean is .43 (SD = .29). The five industry sectors have a mean score indicating their relative part of the sample: INDSEC1 counts 16%, INDSEC2 11%, INDSEC3 26%, INDSEC4 31% and INDSEC5 16%, which add up to 100%.

7.2. Correlation results

Table 6 shows the correlation among all variables. Pearson's r and two-tailed significance levels are included. Below, only the bivariate relationships between tax-aggressive behaviour and the independent variables are commented on.

Table 5
Descriptive statistics.

Variables	N	Minimum	Maximum	Mean	SD
TAG ₁	92	0	1	0.75	0.24
TAG ₂	111	0	1	0.8	0.19
TOTDISC	111	0	55	10.94	11.02
MANDISC	111	0	15	4.23	3.48
VOLDISC	111	0	46	6.71	8.37
SIZE	111	0	10.6	6.23	1.97
DEBT	111	0.06	0.96	0.63	0.22
ROE	111	-4.05	1.45	-0.01	0.62
TENURE	111	0	33	6.07	7.08
BOARD	111	0	0.88	0.15	0.22
DISPERSED	111	0.05	0.85	0.49	0.22
GOVERN	111	0	0.54	0.02	0.1
FOREIGN	111	0	0.81	0.19	0.22
GROWTH	111	4.02	9.84	6.99	1.04
STRUCTURE	111	0	0.99	0.43	0.29
AUDIT	111	0	1	0.03	0.16
INDSEC1	111	0	1	0.16	0.37
INDSEC2	111	0	1	0.11	0.31
INDSEC3	111	0	1	0.26	0.44
INDSEC4	111	0	1	0.31	0.46
INDSEC5	111	0	1	0.16	0.37

Table 6
Correlations. Pearson's r, significance level (two-tailed).

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	
(1) TAG ₁	1																					
(2) TAG ₂	.78***	1																				
(3) TOTDISC	-.10	-.17*	1																			
(4) MANDISC	-.31***	-.34***	.83***	1																		
(5) VOLDISC	-.01	-.08	.97***	.67***	1																	
(6) SIZE	-.22**	-.21**	.55***	.49***	.52***	1																
(7) DEBT	-.05	-.04	-.13	-.06	-.14	-.04	1															
(8) ROE	.20*	-.14	.12	.10	.11	.21**	-.08	1														
(9) TENURE	.02	.05	-.16	-.16	-.14	-.17*	.26***	.10	1													
(10) BOARD	.31***	.12	.10	-.04	.15	.19*	-.011	.11	.11	1												
(11) DISPERSED	.05	.08	-.30***	-.27***	-.28***	-.36***	.24**	.05	.04	.06	1											
(12) GOVERN	-.21**	-.14	.38***	.33***	.35***	.37***	-.06	-.13	-.13	-.11	-.11	1										
(13) FOREIGN	-.10	.00	.21	.16*	.21*	.25***	-.29***	-.07	-.18*	-.10	.06	.09	1									
(14) GROWTH	.02	.07	.17*	.11	.18*	.12	-.54***	.04	-.18	-.16	-.29***	.10	.45***	1								
(15) STRUCTURE	-.05	-.03	.27***	.19**	.27***	.26***	-.40***	-.19**	-.31	.21*	-.51***	.16*	.30***	.30***	1							
(16) AUDIT	.09	.10	-.13	-.14	.11	-.12	-.02	-.11	.01	.02	.05	-.04	-.09	.16	.11	1						
(17) INDSEC1	.09	.21**	-.12	-.11	-.12	.01	.33***	-.12	-.12	-.09	.05	.03	.12	.22**	.11	.23**	1					
(18) INDSEC2	.03	-.14	-.01	-.05	.01	.14	.02	-.27***	-.15	.16	-.22*	-.08	-.17*	.09	.16*	.06	.15	1				
(19) INDSEC3	-.20	-.23**	.23***	.32***	.17	.26***	-.011	.14	-.08	.10	-.26***	.13	-.19*	.19*	.03	.03	.03	.25***	1			
(20) INDSEC4	.02	.06	-.33***	-.27***	-.32***	-.37***	.59***	.09	.24*	.04	-.51***	-.09	-.23**	-.59***	-.11	-.29***	-.23**	-.25***	-.21**	1		
(21) INDSEC5	.11	.10	.26***	.11	.30***	.02	-.26***	.08	.04	.09	-.21**	.00	.16*	.21*	-.10	-.07	-.15	-.26***	-.40***	-.23**	-.29***	1

Significance level (two-tailed): * p < .10; ** p < .05; *** p < .01. N = 111 (92 for TAG₁).

Table 7
Multiple regression analyses: tax aggressiveness (dependent variable), standardised beta coefficient, t-value and significance level.

Independent variables	Model 1A		Model 1B		Model 2A		Model 2B	
	TAG ₁ and TOTDISC		TAG ₁ , MANDISC and VOLDISC		TAG ₂ and TOTDISC		TAG ₂ , MANDISC and VOLDISC	
	β	<i>t</i>	β	<i>t</i>	β	<i>t</i>	β	<i>T</i>
Constant		3.05***		3.19***		1.70 ⁺		2.15**
TOTDISC	0.08	0.62			-0.07	-0.59		
MANDISC			-0.31	-2.06**			-0.43	-3.21***
VOLDISC			0.33	2.20**			0.28	2.01**
SIZE	-0.18	-1.13	-0.17	-1.09	-0.04	-0.25	-0.03	-0.19
DEBT	-0.13	-0.69	-0.10	-0.58	0.01	0.08	0.02	0.18
ROE	0.30	1.91 ⁺	0.30	1.98 ⁺	-0.18	-1.62	-0.18	-1.67 ⁺
TENURE	-0.04	-0.32	-0.04	-0.33	0.01	0.06	-0.01	-0.06
BOARD	0.35	2.91***	0.25	2.06**	0.22	2.02**	0.14	1.25
DISPERSED	0.13	0.85	0.08	0.51	0.09	0.68	0.02	0.14
GOVERN	-0.07	-0.56	-0.07	-0.64	-0.06	-0.56	-0.07	-0.72
FOREIGN	-0.06	-0.45	-0.06	-0.45	-0.03	-0.22	-0.01	-0.05
GROWTH	-0.20	-1.06	-0.18	-0.99	0.16	1.12	0.13	1.01
STRUCTURE	0.04	0.24	0.03	0.22	0.02	0.17	-0.02	-0.13
AUDIT	-0.05	-0.43	-0.08	-0.66	0.00	0.03	-0.01	-0.07
INDSEC1 (omitted in Model 1A and 1B)					0.36	2.48**	0.39	2.80***
INDSEC2 (omitted in Model 2A and 2B)	-0.16	-1.09	-0.15	-1.04				
INDSEC3	-0.36	-2.15**	-0.30	-1.83 ⁺	0.12	0.73	0.21	1.32
INDSEC4	-0.24	-1.04	-0.21	-0.91	0.37	1.79 ⁺	0.39	2.00**
INDSEC5	-0.12	-0.73	-0.13	-0.83	0.32	2.15**	0.30	2.10**
F-value	1.73 ⁺		2.06**		1.47		2.10**	
Adj. R ²	0.11		0.17		0.06		0.15	
VIF min.-max.	1.44-5.46		1.44-5.48		1.21-4.98		1.21-4.98	
N	92		92		111		111	

Significance level (two-tailed): * $p < .10$; ** $p < .05$; *** $p < .01$. VIF = Variance Inflation Factor.

INDSEC1 = telecom and IT; INDSEC2 = energy and utilities; INDSEC3 = materials, industries and consumer discretionary; INDSEC4 = finance, equity certificates and real estate; INDSEC5 = consumer staples and health care.

There are significant negative bivariate relationships between each of the TAG measures and SIZE ($r = -.22$, $p < .05$; $r = -.21$, $p < .05$), which reveals that the biggest companies are less tax aggressive. INDSEC3 ($r = -.20$, $p < .10$; $r = -.23$, $p < .05$) shows that companies within industrial, materials and consumer discretionary are less aggressive than in other industries. There are negative bivariate relations between TAG and MANDISC ($r = -.31$, $p < .01$; $r = -.34$, $p < .01$). There are also negative significant bivariate relationships between TAG₁ and GOVERN ($r = -.21$, $p < .05$) and between TAG₂ and TOTDISC ($r = -.17$, $p < .10$).

The correlation analysis reveals two significant positive bivariate relationships, between TAG₁ and ROE ($r = .20$, $p < .10$) and BOARD ($r = .31$, $p < .01$). The bivariate correlations between tax-aggressive behaviour and VOLDISC are low and not significant ($r = -.02$ and $r = -.08$).

All bivariate relationships may be diluted or strengthened, and the signs may change when the other variables are controlled for in the multiple regressions below. The regressions will reveal whether the hypotheses are supported.

7.3. Regression results

Regression Model 1A in Table 7 comprises TAG₁, TOTDISC and all other independent variables except MANDISC and VOLDISC. It explains 11% of the variation in the dependent variable. INDSEC1 is omitted (reference industry). There are two significant relationships: a positive between TAG₁ and BOARD ($\beta = .35$, $p < .01$) and negative for INDSEC3 ($\beta = -.36$, $p < .05$). This model states that TOTDISC has no significant partial relationship with TAG₁.

The difference between Models 1A and 1B is that TOTDISC is replaced by MANDISC and VOLDISC. The independent variables in Model 1B increase the explanatory power of variation of TAG₁ up to 17%. Like Model 1A, BOARD ($\beta = .25$, $p < .05$) and INDSEC3 ($\beta = -.30$, $p < .10$) are significantly associated with TAG₁ in Model 1B. This

model also reveals a significant relationship between TAG₁ and ROE ($\beta = .30$, $p < .10$). The most important results for this study are that (1) MANDISC (H₁) is significantly related to tax-aggressive behaviour in a negative way ($\beta = -.31$, $p < .05$) and (2) there is strong and significant support for a positive relationship between TAG₁ and VOLDISC (H₂) ($\beta = .33$, $p < .05$).

Model 2A and 2B include TAG₂, and represent robustness tests for Model 1A and 1B, respectively. In these models, INDSEC2 is the omitted (reference) industry variable. In accordance with Model 1A, Model 2A reveals no significant relationship between tax-aggressive behaviour and TOTDISC. This model explains 6% of the variation in the dependent variable. TAG₂ is significantly associated with BOARD ($\beta = .22$, $p < .05$), INDSEC1 ($\beta = .36$, $p < .05$), INDSEC4 ($\beta = .37$, $p < .10$) and INDSEC5 ($\beta = .32$, $p < .05$).

Model 2B shows an important industry association with TAG₂. INDSEC1 ($\beta = .39$, $p < .01$), INDSEC4 ($\beta = .39$, $p < .05$) and INDSEC5 ($\beta = .30$, $p < .05$) are positively related to TAG compared with INDSEC2. There is a significant and negative relationship between TAG₂ and MANDISC (H₁) ($\beta = -.43$, $p < .01$) and a significant, positive relationship when it comes to VOLDISC (H₂) ($\beta = .28$, $p < .05$). Model 2B explains 15% of the variation in TAG.²⁵

8. Discussion

The purpose of this study was to explore indications of strategic trade-offs between corporate tax behaviour and corporate environmental performance disclosures by examining the relationship between these elements of CSR. To survive, companies must be perceived as legitimate by

²⁵ We have also completed a two-stage least-square analysis where the independent variables MANDISC and VOLDISC are included as predictors and the rest of the independent variables as instrumentals show that the OLS estimation in Table 7 is robust.

multiple stakeholders. Still, the interests of key stakeholders, for example investors and the government/society as a whole, on matters such as CTB and environmental disclosure are often incompatible. In a legitimacy theory framework, these stakeholder conflicts imply pragmatic legitimacy risks. Because both tax payment and disclosure are affected by companies' strategies and decisions, the overall question is whether companies strategically balance the interests of important stakeholders by applying trade-offs among these elements of CSR.

The study support hypothesis 1. Validity of this result is enhanced by the fact that it is similar for both dependent variables and supported by the theoretical basis. There is a negative relationship between corporate tax-aggressive behaviour and the degree of mandatory environmental disclosure. Those corporations that most fully comply with the mandatory requirements of environmental disclosure are also less tax-aggressive and comply with the tax rules. Regulatory legitimacy risks increase benefits of stick-to-the-rules attitudes for both CSR elements. Regulations may also affect moral, cognitive and pragmatic legitimacy risks in the same direction over time. Adoption of such stick-to-the-rules strategies is in accordance with Lindblom's (2010) first two scenarios, where the corporation's activity is in or will be brought into conformity with the popular view of what is appropriate tax payment and mandatory disclosure. Even Friedman (1970) assumes conformance to rules of laws and ethics. The hypothesis would suggest that this is the most likely interpretation. A negative relationship is also consistent with companies that simultaneously are highly tax aggressive and neglect environmental reporting regulations. This choice of action is most similar to Lindblom's strategies 2 and 3. It is rational from a Friedman perspective if low costs concerning tax and disclosure increase profits. Then pragmatic legitimacy risks dominated by investors' interests (and cognitive legitimacy risks based on institutionalised liberal market economy views) outweigh regulatory and moral legitimacy risks. In such cost-benefit considerations, lack of enforcement and no negative consequences for non-compliance reduce regulatory legitimacy risks.²⁶ Irrespective of interpretation of the negative relationship, there is no indication of trade-offs between mandated behaviour concerning tax and environmental performance disclosures.

The analyses in this study also support hypothesis 2, with the same validity enhancing attributes as described for hypothesis 1. There is a positive relationship between corporate tax-aggressive behaviour and the degree of voluntary environmental disclosure. Corporations with high degree of TAG are inclined to have a high degree of voluntary environmental disclosure as well. Lindblom's (2010) fourth scenario is a clear example of such strategic trade-offs. For example, a large extent of positive voluntary environmental disclosure can be used to shift focus away from inappropriate tax payments or to legitimate high TAG because it is necessary to finance efforts to combat environmental challenges. Strategic tax-aggressive behaviour is commonly observed in empirical studies (Sikka, 2010; Ylönen & Laine, 2015). It is also well documented that the motivation for voluntary environmental disclosure often is of strategic nature: firms mostly use it as a legitimacy device and not an accountability mechanism (Deegan et al., 2000; Niskanen & Nieminen, 2001; Patten & Crampton, 2003; Walden & Schwartz, 1997). Conversely, a positive relationship also implies that a low degree of TAG (i.e., tax compliance) is associated with a low degree of voluntary disclosure, more in line with Lindblom's (2010) scenarios 1 and 2. In a government/society-as-a-whole perspective, this choice of CTB does not need to be offset by positive environmental disclosures. It is still a strategic decision based on cost-benefit analysis where input is perceptions of (regulatory,) moral, cognitive and pragmatic legitimacy risks in connection with the current situation, the objectives and importance of stakeholder groups, culture and so on. In sum, the positive relationship between TAG and voluntary environmental disclosure is in

line with trade-offs between the two elements of CSR.

Taken together, the support for hypotheses 1 and 2 suggests that companies consider mandatory and voluntary actions differently in a strategic perspective. Different motivations arise from regulatory legitimacy risks, which only exist for mandatory actions. Still, introduction of regulations may also cause moral, cognitive and pragmatic legitimacy risks to change over time (Fallan, 2016). Mandatory and voluntary environmental performance disclosures should be separated in such investigations; an aggregated, single measure of total disclosure dilutes the relationship with TAG. This is illustrated by the insignificant variable TOTDISC in this study. The need for separation of mandatory and voluntary action/disclosure elements (characteristics *within* individual CSR elements) extends the conclusion of Laguir et al. (2015) and Landry et al. (2013) concerning separation of analysis *between* individual CSR elements. It is an important construct validity-contribution. A question for future research is whether this also applies to other within-characteristics, such as qualitative characteristics of disclosure/information.

A limitation of the study is that other CSR elements besides CTB and environmental disclosure are not included. Such trade-offs are possible or even likely to exist beyond these two elements. For example, Lindblom's (2010) fourth strategy would cause companies to use whatever CSR element they are/perform good at, as long as it is of importance to the relevant stakeholders at the time. Because the current study does not control for other CSR elements and their potential contemporaneous changes, the present results may be affected by such contemporary trade-offs of other CSR elements. Still, for individual industries and companies, relevant strategic CSR elements are often easily observed, such as in the Norwegian fish-farming industry. And even if investigation of strategic trade-offs may benefit from consideration of several CSR elements simultaneously, the analysis has to treat each element individually in line with Laguir et al. (2015) and Landry et al. (2013). Importantly, the theory underpinning the indicated difference between mandatory (no trade-offs) and voluntary (trade-offs) actions revealed in this study should be equally relevant for relationships between TAG and other CSR elements.

Other limitations include the possibility that our findings may be driven by uncontrolled confounding factors, even though many firm characteristics are controlled for in the regression model; the results may be confined to disclosure and may not apply to other types of performance (measures); the result may be due to the selection of companies from OSE, even though exclusion of industries with differing tax regimes such as oil and gas and shipping is common and necessary in such studies; unlisted companies are not addressed; and that tax rules differ among countries and time, and so may attention to CSR elements and the accompanying direction and importance/strength of regulatory, moral, cognitive and pragmatic legitimacy risks (Gjølberg, 2009; Halme & Huse, 1997; Halme, Roome, & Dobers, 2009; Kuznetsov et al., 2009). Hence, further research is needed to explore whether the current findings are readily generalised or should be interpreted only in light of local considerations and other context.

A different question that is not addressed in this paper is the duration of potential strategic trade-offs. Even if they do occur, longitudinal studies are needed to consider whether stable relationships exist between corporate behaviour on tax and CSR/environmental disclosure over time, or if the diverging results in extant studies are really just an indication of the opposite (and, hence, not caused by missing, relevant mediating variables). Such considerations include potential differences in the time horizons of strategic decisions of individual elements of CSR (including tax).

Nevertheless, the theoretical contribution of the current study, the novel use of multidimensional legitimacy, allows for different contexts (e.g., country, culture, and time). The direction and absolute and relative strength of regulatory, moral, cognitive and pragmatic legitimacy differs across such contexts. Hence, the theory may provide varying predictions. Multidimensional use of legitimacy theory has a general relevance in CSR (reporting) research.

²⁶ Still, introduction of regulations may create cognitive dissonance, increase risks and change actions (Adams & Whelan, 2009).

9. Conclusion

This study investigates the relationship between corporate tax behaviour and mandatory and voluntary corporate environmental performance disclosure, respectively. The results indicate that the corporations with the highest compliance concerning mandatory environmental reporting also have the highest tax compliance (lowest tax aggressiveness), in line with regulatory legitimacy theory arguments and a stick-to-the-rules strategy. No general trade-offs between the two CSR elements are observed for mandatory actions. Meanwhile, there are indications of trade-offs between corporate tax behaviour and voluntary environmental disclosure. Corporations that have the most comprehensive voluntary environmental reporting to meet the needs of their stakeholders also undertake the most tax-aggressive behaviour to please their shareholders.

Knowledge of strategic considerations and the use of trade-offs improve understanding of corporate TAG/CSR behaviour (Dowling, 2014), including whether stick-to-the-rules or opportunistic strategies dominate. The finding that regulation (and probably enforcement) affects corporate strategic behaviour differently than voluntarism is important knowledge for governments that need to protect the tax base and improve environmental performance disclosure. General well-informed use of corporate disclosure also need to be aware of these differences. The need for separation of mandatory and voluntary action/disclosure (characteristics *within* individual CSR elements) extends the conclusion of Laguir et al. (2015) and Landry et al. (2013) concerning separation of analysis *between* individual CSR elements.

Corporate tax-aggressive behaviour involves management's choices among alternatives of tax planning, avoidance and evasion. Tax revenues are important contributions to developing a democratic and

civilised society. Paying taxes is part of a social contract whereby private and corporate citizens engage with the broader society to contribute to maintaining infrastructure that underpins liberty and the market economy (Christensen & Murphy, 2004). Still, CTB also affects investor wealth more directly. This provides incentives for tax minimisation in all companies. For tax authorities, international operations (partly outside their jurisdiction) may be especially challenging. Many multinational corporations have been accused of TAG (2012, Preuss, 2010; Sikka, 2010; Ylönen & Laine, 2015). The possibility of shifting profits from high-tax to low-tax countries creates tax management opportunities as well as legitimacy/reputational risks (Hardyment, Truesdale, & Tuffrey, 2011). These companies face growing interest from governments, concerned citizens and NGOs, such as the Transparency International and Tax Justice Network, when they employ legal but controversial means for reducing their tax payments.

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Appendix A. Environmental information content categories

No.	Category	Description
1	Environmental impact–processes	Environmental impact from production processes. Status, performance (change in status over time), and measures/actions taken improve status and performance.
2	Environmental impact–products	Similar to category 1, except that this involves impacts from products in a life-cycle perspective. Implemented environmental co-labelling of products is registered here.
3	No environmental impact	“The company does not pollute the external environment.” / “The company has no environmental impact.”
4	Environmental policy	Super-eminent objectives and strategies. A minimum requirement is that priority of the environmental focus is expressed or an intention to follow an environmental program, e.g. The International Chamber of Commerce (ICC) Environmental Program, the Charter of World Business Council for Sustainable Development, UN's Global Compact or a national environmental responsibility program. A statement saying that the company has an environmental policy is not sufficient to be included in this category.
5	Environmental objectives	Specific, measurable (and controllable) goals. For example, an objective to decrease the discharge level of a substance with a specified amount within a defined time-period, certification according to an environmental programme or implementation of a reporting standard within a specific time-frame.
6	Environmental authorities	Contact with authorities. Environmental constraints, laws and regulations, incentives, discharge permits, disputes, etc.
7	Environmental events	Specific events or accidents that have caused serious environmental impacts; e.g. excess of discharge permit or environmental disasters.
8	Environmental organization	Information about how the company has organized their environmental work: e.g. responsibility, division of work, emergency preparedness to meet environmental requirements and disasters, development of environmental expertise, implementation of or recertification according to environmental management standards (e.g. ISO 14001, EMAS, Miljøfyrtårn) etc. Specific auditing is registered in category 9. Plans for future implementation of environmental standards are registered in category 4.
9	Environmental audits	Environmental auditing acts (internal and external), methodology, auditing standards, degree of assurance, reporting of auditing results and the company's follow-up work.
10	Audits of environmental disclosure	Information concerning audits of environmental disclosure. Otherwise similar to category 9.
11	Environmental investments	Economic (monetary) information about completed investments to reduce the company's environmental impacts, comply with discharge permits etc. Reported (binding), planned investments belong to category 13 below.
12	Environmental costs / revenues	Economic (monetary) information about the environmental costs and revenues of the year, e.g., fines and pollution abatement work.
13	Environmental liabilities	Economic (monetary) information about liabilities, e.g., responsibility for future costs of disposal and clearing up after own or others activities, future costs of other environment-related actions, cooperation, liabilities caused by money previously received for special purposes, etc.
14	Clarification of environmental concepts	Definition and clarification of environmental concepts etc.
15	Accounting (reporting) principles	The category concerns, e.g., accounting principles, accounting rules, procedures relating to measurement, valuation and disclosure of environmental reporting issues.
16	Economic demand-side issues	Non-monetary information on (expected future) market developments etc.
17	Economic supply-side issues	Non-monetary information on economic issues, especially supply-side issues.

Appendix B. NRS 16 The board of directors' report

The natural environment [...] Information about matters related to the business, including its input factors and products, which may have a not insignificant impact on the natural environment must be disclosed. Disclosure must be provided on which environmental impacts the individual aspects of the business give or can give, and what measures are in place or planned for implementation to prevent or reduce negative environmental impacts.

In general, the following conditions may be important in terms of impact on the natural environment:

- 1) Type and quantity of energy and raw materials consumed
- 2) Type and quantity of contamination emitted, including noise, dust and vibration
- 3) Type and quantity of waste generated or owned, such as buried masses, open and closed landfills, deposits in watercourses or sea etc.
- 4) Accident risk of activities
- 5) Environmental impact associated with transportation

In addition, for companies that manufacture material products, the following conditions are important:

- a) Type and quantity of health- and environmentally hazardous chemicals included in the products
- b) Type and quantity of waste that occurs when the products are discarded
- c) Environmental impact when using the products, including the necessary use of other products such as the use of petrol by cars

Whether conditions will have a not insignificant impact on the natural environment has to be assessed in terms of the individual business. Article 8 of the Pollution Control Act allows for common pollution from, among other things, homes, cottages and offices. Pollution covered by this provision will usually represent an insignificant impact on the natural environment that does not require disclosure in the board of directors' report. Conversely, the manufacture of products containing pollutants/poisons/POPs can have a not insignificant influence on the natural environment. Similarly, transport companies can emit gases that contribute to local air pollution, acidification or climate change and have a not insignificant impact on the natural environment. [...]

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