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Corporate social responsibility and tax aggressiveness: An empirical analysis

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A B S T R A C T

This study examines the association between corporate social responsibility (CSR) and corporate tax aggressiveness. Based on a sample of 408 publicly listed Australian corporations for the 2008/2009 financial year, our regression results show that the higher the level of CSR disclosure of a corporation, the lower is the level of corporate tax aggressiveness. We find a negative and statistically significant association between CSR disclosure and tax aggressiveness which holds across a number of different regression model specifications, thus more socially responsible corporations are likely to be less tax aggressive in nature. Finally, the regression results from our additional analysis indicate that the social investment commitment and corporate and CSR strategy (including the ethics and business conduct) of a corporation are important elements of CSR activities that have a negative impact on tax aggressiveness.

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1. Introduction

Separately, corporate social responsibility (CSR) and corporate tax aggressiveness¹ are issues that have attracted a great deal of attention in the academic literature (see, e.g., Gray et al., 1995; Roberts, 1992; Deegan, 2002; Deegan et al., 2002; Desai and Dharmapala, 2006a; Frank et al., 2009; Hanlon

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¹ Consistent with existing empirical tax research (see, e.g., Frank et al., 2009; Chen et al., 2010), we define tax aggressiveness as the downward management of taxable income through tax planning activities. It thus encompasses tax planning activities that are legal or that may fall into the gray area, as well as activities that are illegal. Thus, the term tax aggressiveness is broadly defined. Moreover, we use the term throughout the paper, but it can be used interchangeably with tax avoidance and tax management.

and Slemrod, 2009; Chen et al., 2010). Quite surprisingly, however, previous research has seldom examined how CSR and tax aggressiveness could be associated (Freedman, 2003; Desai and Dharmapala, 2006b; Williams, 2007). A recent study by Lanis and Richardson (2011) suggests that CSR principles could potentially influence the tax aggressiveness of a corporation via the board of directors. They propose that outside directors are more likely to be responsive to the needs of society and thus might influence the board of directors away from an aggressive tax policy stance (Lanis and Richardson, 2011). In a much wider and arguably more important context, CSR could potentially influence tax aggressiveness in terms of how a corporation accounts and directs its systems and processes in respect to the well-being of society as a whole (Desai and Dharmapala, 2006b; Williams, 2007; Avi-Yonah, 2008).

Taxes are a motivating factor in many corporate decisions. Managerial actions designed solely to minimize corporate taxes through tax aggressive activities are becoming an increasingly common feature of the corporate landscape all over the world.² Nevertheless, corporate tax aggressiveness can generate significant costs and benefits. From a societal perspective, the payment of corporate taxes ensures the financing of public goods (Freise et al., 2008). Thus, a corporation's tax aggressive policies may have a negative effect on society (Freedman, 2003; Slemrod, 2004; Landolf, 2006). Moreover, when a corporation is considered to be overtly tax aggressive (see, e.g., Gilders et al., 2004), it is generally not deemed to be paying its "fair share" of corporate taxes to the government to ensure the financing of public goods (Freedman, 2003; Freise et al., 2008). This shortfall in corporate tax revenue produces a significant and potentially irrecoverable loss to society as a whole (Slemrod, 2004; Williams, 2007). Accordingly, corporate tax aggressiveness can be considered socially irresponsible (Erle, 2008; Schön, 2008). Notwithstanding the intuitive appeal regarding the social aspects of corporate taxation, there is a paucity of research which directly links the CSR activities³ of a corporation with corporate tax aggressiveness (Desai and Dharmapala, 2006b; Williams, 2007; Avi-Yonah, 2008). Hence, the purpose of this study is to investigate empirically whether a corporation's approach to CSR is related to its level of corporate tax aggressiveness.

CSR can be defined in several ways, including "how business takes account of its social and environmental impacts in the way it operates, maximizing the benefits and minimizing the downsides" (UK Government, 2004, p. 3), and "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large" (Holme and Watts, 2006, p. 10). Thus, CSR is considered to be a key factor in the success and survival of a corporation. However, the level to which a corporation engages in CSR is not mandatory, a view recognized by the Commission of the European Communities (2001, p. 4) as follows: "a concept whereby companies decide voluntarily to contribute to a better society and a cleaner environment. A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis." There are also different points of view as to why a corporation may engage in CSR activities in the first place. For example, the agency framework advanced in accounting by Watts and Zimmerman (1979, 1990) claims that CSR is an illegitimate attempt by managers to tax shareholders without their consent and leads to managers being unaccountable to shareholders. This may help to explain why few accounting studies have considered the impact of a corporation's CSR activities on corporate tax policy, especially given the dominance of agency theory in accounting research (Desai and Dharmapala, 2006b; Avi-Yonah, 2008).

The view of a corporation adopted in this study is more comprehensive than that suggested by agency theory, whereby a corporation is more than simply a "nexus of contracts" and considers stakeholders other than shareholders as also being important to a corporation's ongoing operations (see, e.g., Ibrahim et al., 2003). This wider view of a corporation is referred to by Freedman (2003) as the "enlightened shareholder value," by Avi-Yonah (2008) as the "real entity view" and by Schön (2008) as the "corporation as a real world phenomenon." While there are some differences between the aforementioned views, a common perspective with significance for our study is that a corporation exists above and

² See, e.g., the widely reported cases in the world media of Dynegy, Enron, GlaxoSmith-Kline, Google, News Corporation, Parmalat, Sibneft, Tyco, WorldCom, and Yukos.

³ For example, community and political involvement, environmental protection, social and community development and investment, promoting staff welfare and development, and having policies in place that maintain a good relationship with customers, suppliers, and government bodies.

beyond management, shareholders and any particular stakeholder. In fact, a corporation, as with any individual in society, is able to set its own agendas and policies to further its own ends (Williams, 2007; Schön, 2008) and is an integral part of society and requires its support to survive (Gray et al., 1995; Roberts, 1992; Deegan, 2002). Moreover, the relevance of CSR gains additional credibility as an activity which is part and parcel of a corporation's core business operations in recognition of its ethical and moral duty to the wider societal context in which it exists (Freedman, 2003; Williams, 2007; Schön, 2008; Avi-Yonah, 2008). However, there is generally no regulatory regime in place to mandate the CSR activities of a corporation (Williams, 2007; Avi-Yonah, 2008). Hence, a corporation has the choice to formulate a particular approach to CSR, so in this sense we expect that the level to which corporations engage in CSR activities will differ significantly.

Of course, the issue of paying corporate tax from a national perspective is, as Andreoni et al. (1998, p. 818) state: "a problem as old as taxes themselves . . . and is thus of obvious importance to nations around the world." We take this a step further by suggesting that there is sufficient interest between the state and society for the payment of corporate tax to be considered as a payment to the community generally (Williams, 2007). Thus, where a corporation undertakes tax aggressive activities, this behavior could have a negative impact on society (Freedman, 2003; Slemrod, 2004; Landolf, 2006; Williams, 2007). Furthermore, a corporation's decisions about the lengths to which it is prepared to go to reduce its tax liability are legitimately influenced by its attitude to CSR as well as by considerations of legality and more fundamental ethical questions (Christensen and Murphy, 2004; Avi-Yonah, 2008).

In line with Avi-Yonah (2008) and other researchers (see, e.g., Freedman, 2003; Landolf, 2006; Williams, 2007), while minimizing the amount of corporate taxes paid could be deemed to be a legitimate exercise within the spirit of the law, where corporations deliberately engage in strategic behavior designed solely to minimize corporate taxes, such behavior is considered in this study to be socially irresponsible (see, e.g., Freedman, 2003; Landolf, 2006; Williams, 2007). We expect that corporations which engage more in CSR activities pay their fair share of corporate taxes and are therefore less tax aggressive in nature. To test our hypothesis, we employ a cross-section of 408 publicly listed Australian corporations collected from the Aspect-Huntley financial database for the 2008/2009 financial year and use effective tax rates (ETRs) (see, e.g., Gupta and Newberry, 1997; Rego, 2003; Richardson and Lanis, 2007) as our proxy measure of corporate tax aggressiveness. We also develop a broad-based index of CSR disclosure items which we score from publicly available corporate reports (see, e.g., Bowman and Haire, 1976; Ingram and Frazier, 1980; Clarkson et al., 2008) and employ it as our proxy measure of the extent to which a corporation engages in CSR activities.

Our regression results show that the higher the level of CSR disclosure of a corporation, the lower is the level of corporate tax aggressiveness. We find that a negative and statistically significant association between CSR disclosure and tax aggressiveness holds across several different regression model specifications, so more socially responsible corporations are expected to be less tax aggressive in nature. Finally, the regression results from our additional analysis indicate that the social investment commitment, and corporate and CSR strategy (including the ethics and business conduct) of a corporation are significant components of CSR activities that have a negative effect on tax aggressiveness.

This study contributes to the literature in several ways. First, it provides empirical evidence which shows that more socially responsible corporations are less likely to engage in corporate tax aggressiveness. To our knowledge, this study is the first to empirically document this negative association. This finding suggests that a corporation engaging in CSR activities also takes into account its tax policy stance, which helps to confirm the view that CSR is a core activity that can be used by a corporation to support its tax position. Second, it employs a comprehensive measure of CSR activities which shows that tax aggressiveness impacts the corporation's CSR in a broad sense, whereas most extant literature on CSR concentrates simply on environmental performance. Third, it also provides important insights for tax policymakers who seek to identify the circumstances under which the risk of corporate tax aggressiveness is higher. Fourth, it furnishes additional evidence in support of an emerging research paradigm in the area of CSR and tax aggressiveness (see, e.g., Sikka, 2010).

The remainder of the paper is organized as follows. Section 2 provides the relevant theory and develops our hypothesis. Section 3 describes the research design. Section 4 reports and analyzes the empirical results. Finally, Section 5 concludes.

2. Theory and hypothesis development

2.1. *The corporation: more than just a nexus of contracts*

As mentioned previously, the lack of research linking CSR with corporate taxation may be due to the dominant view of the corporation in accounting and business research (see, e.g., Desai and Dharmapala, 2006b; Avi-Yonah, 2008). This view is largely encapsulated in the assumptions of agency theory, whereby CSR is considered to have little relevance to the operations of the corporation (Watts and Zimmerman, 1979, 1990). According to agency theory (Fama, 1980; Fama and Jensen, 1983), the most important relationship is between managers and shareholders, thus corporate activity outside this domain has little relevance and is counter-productive as it does not maximize corporate profit (Friedman, 1962). A corporation only need engage in CSR activities if they maximize profit, and the costs of such activities are usually referred to as reputation costs and/or political costs in agency theory (Scholes et al., 2005; Chen et al., 2010).

Consistent with Avi-Yonah (2008) and Schön (2008), our view of a corporation is that it has a significant influence that goes beyond its shareholders. Specifically, a corporation is a “real world” entity which has to survive the rigors of a competitive business environment and in this context will deal with many other entities and individuals (Avi-Yonah, 2008; Schön, 2008). As a result, a corporation will develop policies, strategies and operations that provide it with the most favorable outcomes in a complex business environment. Essentially, the resultant policies, strategies and operations will not be shareholder-centric *per se*, but will account for other stakeholders (e.g., government bodies, political groups, trade unions, community, employees, suppliers and customers) and members of society as a whole.

According to Avi-Yonah (2008), the implication of viewing a corporation as a “real world” entity is that CSR may be regarded as a legitimate business activity and not merely a cost on the road to maximizing shareholder wealth. Williams (2007) goes further in suggesting that CSR activities should be reflected in a corporation’s strategies and core activities, in recognition of its responsibility to society. However, CSR activities are generally not compulsory according to the laws and regulations of most developed countries (e.g., Australia, Canada, the UK, and the US), so the level of engagement in CSR activities may differ significantly between corporations (Williams, 2007; Avi-Yonah, 2008). We also assume in this study that a corporation takes an ethical stance in relation to its business operations, and that CSR provides a set of guiding principles that can be used by a corporation to determine how its chosen ethical stance applies to specific business situations that have an effect on its stakeholders (other than shareholders) and society in general (Williams, 2007). Thus, the ethical stance could also be significantly different amongst corporations.

2.2. *Corporate taxes and social responsibility*

Corporate taxes can only be associated with CSR if their payment does indeed have implications for the wider community. If the payment of corporate taxes is merely perceived as a business transaction and one of the many costs of operating a corporation, the objective would be to minimize the amount of corporate taxes payable as much as possible (Avi-Yonah, 2008). Thus, in paying taxes a corporation would have few ethical, community or other stakeholder considerations in mind. Nevertheless, it is claimed by Freedman (2003), Landolf (2006) and Friese et al. (2008), for example, that the payment of corporate taxes does have community and societal implications because it forms the important function of helping to fund the provision of public goods in society, including such things as education, national defense, public health care, public transport and law enforcement (e.g., the system of property rights). Finally, as indicated by Williams (2007), the most significant issue that arises in attempting to apply CSR principles to corporate taxation encompasses those actions that can reduce a corporation’s tax liability through corporate tax avoidance and tax planning.

2.3. *Tax aggressiveness: a social irresponsibility*

Taking the viewpoint that a corporation is a “real world” entity with societal obligations and that the payment of corporate tax does affect society, the CSR obligation is that a corporation should pay its

fair share of the tax lawfully collected by governments in whichever country they are operating (Christensen and Murphy, 2004). Therefore, a corporation may have the right to minimize tax within the spirit of the law, but it would be considered illegitimate for a corporation to deliberately engage in strategic tax behavior designed solely to minimize its corporate taxes (Avi-Yonah, 2008). Moreover, it would presumably be socially responsible to take any steps that would curb the harmful effects of corporate tax aggressiveness on the economic well-being of society (Williams, 2007).⁴

By taking a passive stance toward taxation, a corporation can gain legitimacy within society and maintain good-standing with the tax authority by complying with and following the underlying spirit of the tax law (Christensen and Murphy, 2004; Ostas, 2004; Rose, 2007). In Australia, for example, schemes or arrangements that are put in place by a corporation with the sole or dominant purpose of avoiding tax are not considered to be within the spirit of the law (Gilders et al., 2004). Thus, the Australian Taxation Office (ATO) has the power under the tax legislation to cancel any tax benefit obtained from the scheme or arrangement, impose additional tax and apply significant tax penalties on a corporation (Gilders et al., 2004).

Furthermore, if a corporation is considered to be tax avoidant (e.g., by establishing a scheme or arrangement with the sole or dominant purpose of avoiding tax), it is generally not deemed to be paying its “fair share” of corporate income tax to the government to help ensure the financing of public goods in society (Freedman, 2003; Freise et al., 2008). This shortfall in corporate income tax revenue generates hostility, reputational damage (particularly in relation to its CSR profile) for a corporation with various stakeholders, and at worst could even result in the cessation of a corporation’s business operations (Williams, 2007; Erle, 2008; Hartnett, 2008). Finally, corporate tax aggressiveness also produces a significant and potentially irrecoverable loss to society as a whole (Freedman, 2003; Slemrod, 2004; Schön, 2008).

Taking these different views into account, we suggest that corporate tax aggressiveness should be considered a socially irresponsible and illegitimate activity. Thus, a corporation engaging in tax aggressive policies is socially irresponsible and its decisions about the lengths to which it is prepared to go to reduce its tax liability are thus legitimately influenced by its attitude to CSR, in addition to considerations of legality and more basic ethical questions. Williams (2007) argues that while consideration of fundamental principles such as honesty and integrity is likely to focus on the attributes of the proposed tax aggressive arrangements themselves and the kind of behavior required of a corporation, CSR considerations will tend by definition to focus more on the wider economic, environmental and social effects of the arrangements.

It should also be noted that it is not always helpful to seek to distinguish between “good” CSR carried out by a corporation for altruistic motives and “selfish” CSR carried out by a corporation with a view to the favorable effects on its reputation (Williams, 2007). Rather, many corporate actions are conducted with dual motives in mind. It is therefore important in what follows to consider how CSR factors may reasonably influence a corporation’s approach to tax aggressiveness, without making any attempt to distinguish between an action that is taken because a corporation actually wishes to act in a responsible manner, and an action that is taken because it wishes observers to perceive it in that particular light (Williams, 2007).

Based on the above discussion, where a corporation chooses to engage in CSR activities it is less likely to be overtly tax aggressive. Thus, a corporation with a higher CSR profile (as measured by its engagement in CSR activities) is expected to be more cautious about undertaking tax aggressive activities because this would be inconsistent with its other CSR engagements and could potentially counteract the positive effects associated with its CSR activities. Overall, it is reasonable to expect that the more a corporation engages in CSR activities, the lower the likelihood that it will be tax aggressive in nature. Our study thus empirically tests the following research hypothesis:

H1: All else being equal, the higher the level of CSR activity of a corporation, the lower is the level of tax aggressiveness.

⁴ In fact, according to Williams (2007), eliminating the tax aggressive behavior of a corporation should have a stabilizing effect on society to the extent that it: (1) hinders the development of a two-tiered society in which some pay tax and others fail to do so; (2) promotes respect for the rule of law; and (3) contributes to the higher standards of customer service and employee care normally associated with the legitimate economy.

3. Research design

3.1. Sample description

We empirically test our hypothesis based on a cross-section of publicly listed Australian corporations collected from the Aspect-Huntley financial database for the 2008/2009 financial year, which represents the latest and most complete financial year available for data collection at the time that this study was carried out. Our initial sample consisted of a sum total of 627 corporations. However, the initial sample was reduced by the following exclusions:

- (1) Financial corporations, because government regulations are likely to affect their ETRs differently from other corporations (61 corporations).
- (2) Foreign corporations, since these corporations may be subject to resident country tax laws that differ from Australian tax laws (two corporations).
- (3) Corporations with missing financial data and/or corporate governance data (57 corporations).
- (4) Corporations with negative income or tax refunds, because their ETRs are distorted (Zimmerman, 1983) (66 corporations).
- (5) Corporations with ETRs exceeding one, as this can cause model estimation problems (Stickney and McGee, 1982) (33 corporations).

Therefore, the final sample for our empirical analysis is comprised of 408 corporations.

3.2. Dependent variable

The dependent variable for our empirical tests is represented by corporate tax aggressiveness (TAG), which is measured based on ETRs. We draw on ETRs in this study for three important reasons. First, recent empirical tax research has found that ETRs encapsulate tax aggressiveness (see, e.g., Slemrod, 2004; Dyreng et al., 2008; Robinson et al., 2010; Armstrong et al., in press). Second, ETRs also denote the proxy measure of tax aggressiveness most frequently used by academic researchers (see, e.g., Mills et al., 1998; Phillips, 2003; Rego, 2003; Dyreng et al., 2008). Third, and perhaps more notably, the ATO (2006) considers low ETRs to be a key indicator or sign of tax aggressiveness for Australian corporations.

The customary definition of ETRs is income tax expense currently payable divided by pre-tax accounting (or book) income (see, e.g., Gupta and Newberry, 1997; Richardson and Lanis, 2007). Given that ETRs compare the current tax liability generated by taxable income with pre-tax income based on generally accepted accounting principles (GAAP), ETRs measure the adeptness of a corporation in reducing its current tax liability relative to its pre-tax accounting income. Thus, ETRs indicate the relative tax burden across corporations (Rego, 2003).

Tax aggressive activities affect ETRs in at least two ways. First, tax aggressive activities frequently generate book-tax differences,⁵ which are both temporary and permanent differences between a corporation's financial accounting income and taxable income. Book-tax differences produce variation in ETRs as the numerator is based on taxable income while the denominator is based on financial accounting income. Tax-motivated transactions (e.g., foreign sales, tax exempt income, tax credits and deferral of income recognition) typically reduce ETRs (Rego, 2003). Second, corporations often use their foreign operations to avoid taxes and ETRs capture this form of tax aggressiveness. For instance, shifting income from a high-tax jurisdiction to a low-tax jurisdiction reduces a corporation's ETR (Rego, 2003).⁶ Overall, corporations that avoid corporate taxes by reducing their taxable income while maintaining their financial accounting income have lower ETRs, making ETRs an appropriate measure of tax aggressiveness.

⁵ Mills (1998) finds that corporations with greater book-tax differences have larger Internal Revenue Service (IRS) audit adjustments in the US, consistent with greater tax aggressive activities.

⁶ The ETR is reduced because the denominator remains constant (pre-tax accounting income has not changed), whereas the numerator is smaller (income taxes currently payable have decreased).

To improve the robustness of our empirical results, we use two different measures of ETRs (see, e.g., Gupta and Newberry, 1997; Richardson and Lanis, 2007). The first (ETR1) is defined as income tax expense currently payable divided by book income, and the second (ETR2) is defined as income tax expense currently payable divided by operating cash flows.⁷ Finally, the data used to construct the ETRs were collected from the Aspect-Huntley financial database.

3.3. Independent variable

The independent variable for our study is denoted by CSR. Using information disclosed by corporations to proxy for CSR activity as indicated by Clarkson et al. (2008), has received mixed support in the literature with several studies (see, e.g., Bowman and Haire, 1976; Ingram and Frazier, 1980) suggesting that CSR disclosure is a good indicator of CSR performance, while others (see, e.g., Wiseman, 1982; Neu et al., 1998; Patten and Trompeter, 2003; Cho and Paton, 2007; de Villiers and van Staden, 2011) suggesting that CSR disclosure is either not related to CSR activity or is negatively related. However, fairly recent research by Clarkson et al. (2008) provides robust evidence that there is a positive relationship between environmental performance and the level of discretionary disclosures in environmental and social reports or related web disclosures. Additionally, later research by De Villiers and Van Staden (2011) indicates that corporate CSR disclosures relate differently to CSR activity depending on the source of that disclosure (e.g., annual report or website).

All of the abovementioned research on CSR disclosure and activity employs US data and concentrates primarily on the physical environment. As far as we are aware, there is no evidence which suggests that CSR disclosure is generally a poor proxy for CSR activity in Australia. Moreover, we acknowledge that our view of CSR activities is “broad-based” and includes a wide range of actions in which the corporation can engage in as part of its CSR agenda (e.g., community and political involvement, environmental protection, social and community development and investment, promoting staff welfare and development, and having policies in place that maintain a good relationship with customers, suppliers, and government bodies). We take a more comprehensive view of CSR activities as tax aggressiveness represents a society-wide issue (see, e.g., Freedman, 2003; Christensen and Murphy, 2004; Landolf, 2006; Williams, 2007) which we believe relates to a corporation’s approach to a socially responsible existence as a whole, not simply limited to specific issues such as the physical environment.

To determine the level of CSR disclosure for the corporations represented in our sample, we developed a broad-based CSR disclosure index⁸ (CSRDISC) which is consistent with our definition of CSR activity. Items for the CSR disclosure index were selected based on the general criteria that they should: (1) reflect as many CSR categories (i.e., community, customers, environment, and suppliers) as possible, rather than an individual or limited set of categories; and (2) relate to CSR transactions and activities that corporations in all industries are likely to undertake in the ordinary course of their business dealings, rather than being specific to an industry. We based these criteria on previous research (see, e.g., Bowman and Haire, 1976; Ingram and Frazier, 1980; Wiseman, 1982; Hackston and Milne, 1996; Clarkson et al., 2008), and the St James Ethics Centre (2009) corporate responsibility index (CRI) for CSR disclosures in Australia.⁹ These general criteria ensure that our sample is “all-inclusive” of the different types and categories of CSR disclosure items that could possibly be disclosed by a corporation and the activities

⁷ We note that ETRs were truncated in this study to the 0–1 range in keeping with previous research (see, e.g., Gupta and Newberry, 1997; Chen et al., 2010). Moreover, given that higher ETRs represent a proxy measure of lower corporate tax aggressiveness, we transformed ETR1 and ETR2 by multiplying them by -1 to obtain increasing measures of corporate tax aggressiveness for the empirical analysis.

⁸ Preliminary versions of the individual items disclosure index were pilot tested on a group of experienced accounting academics and a group of professional accountants. Their opinions were sought about the inclusion (or exclusion) of various CSR items in (from) our CSR disclosure index. Based on constructive feedback, we settled on 52 CSR activity items as being broadly representative of CSR disclosure for Australian corporations.

⁹ The St James Ethics Centre (2009) employs the CRI in order to rank a small number of Australian firms according to CSR disclosures. The CRI includes the following categories: corporate strategy integration; management practice; environmental impact areas; social impact areas; and assurance and disclosure. Participating corporations also use the CRI to benchmark their own CSR performance from year-to-year, in addition to their CSR performance against industry peers.

in which it could engage in. Thus, any potential measurement error arising from using CSR disclosure as a proxy for a broad range of CSR activities should be minimized in our study.¹⁰

We analyzed the sample corporations' annual reports and other corporate related information¹¹ in terms of 52 individual CSR activity items that can be grouped according to the following six categories:

- (1) Corporate and CSR strategy items (eight items).
- (2) Staff strategy items (18 items).
- (3) Social investment items (five items).
- (4) Environment items (eight items).
- (5) Customer and supplier items (seven items).
- (6) Community and political involvement items (six items).

For each of the 52 individual CSR activity items, a corporation represented in the sample was scored either "1" for CSR disclosure or "0" for CSR non-disclosure. The scoring was performed by the authors and a research assistant and was then cross-checked to determine the error rate in each individual's scoring.¹² Several errors were detected during the cross-checking, but the total number of errors was found to be insignificant and they were adjusted accordingly. Thereafter, our measure of a sample corporation's CSR activity is computed as the sum of the individual number of CSR items that it discloses in its annual report or other corporate information (each scored as "1") divided by 52. This computation resulted in a CSR disclosure index ranging between 0% and 100% for each sample corporation.¹³ Descriptive statistics

¹⁰ An alternative proxy measure for CSR activity is one based on third party performance measures, such as the one prepared by KLD Research & Analytics (see, e.g., Al-Tuwaijri et al., 2004; Patten, 2002; Clarkson et al., 2008; De Villiers and van Staden, 2011). Unfortunately, no such measure is currently available for a large sample of Australian corporations. The St James Centre in Australia does rate the performance of corporations based on a few independent measures of CSR activity, however the problem is that only around 10–20 corporations are rated albeit on an inconsistent basis. Nevertheless, recent research in the US by Chatterji et al. (2009) finds that even externally developed measurers of CSR performance, such as those developed by KLD Research & Analytics may not be measuring actual CSR activity accurately.

¹¹ The primary source of information that we used to score the CSR index for our sample corporations is the annual report, which is the most widely publicly available report containing CSR information in Australia. The annual reports were collected from the Australian Stock Exchange (ASX) website and the Connect 4 database. As part of the CSR gathering process, we also collected any other publically available report that was related to a corporation's CSR activities and was not part of the annual report, including the CSR report, environmental report, sustainability report and any other similarly titled reports. For most of the corporations in our sample, a CSR report was included in the annual report and no other CSR reports were available. However, for a few corporations in our sample a CSR report was separate to the annual report, but was available from the same source as the annual report. For all of the CSR reports that were separate from the annual report for our sample corporations, they were collected from corporate websites or by directly contacting the sample corporations for a hardcopy. To be sure that we did not exclude any other CSR reports in our study, we personally contacted as many corporations in our sample as possible. Thus, we are confident that we objectively assessed CSR disclosure for our sample corporations in all publically available corporate reports published either electronically on a corporate website or in hardcopy format.

¹² Our scoring method is consistent with previous research in the accounting literature that uses disclosure indexes (see, e.g., Singhvi and Desai, 1971; Choi, 1973; Buzby, 1974; Barrett, 1975; Wallace, 1988; Cooke and Wallace, 1989; Cooke, 1991; Adhikari and Tondkar, 1992; Bavishi, 1995; Salter and Niswander, 1995; Zarzeski, 1996).

¹³ To test the validity of our CSR disclosure index as a proxy measure for CSR activity, we considered the distribution of corporations making-up our CSR disclosure index. We stratified our main sample of 408 corporations based on the CSR disclosure index into those corporations with the highest (around the top 5%) score ranking of disclosures (20 corporations) in the sample as compared to those corporations with the lowest (around the bottom 5%) score ranking of disclosures (20 corporations) in the sample. Thereafter, we systematically reviewed the annual reports and other corporate related information of the stratified sample corporations (40 corporations in total), searching for hard disclosure items (see, e.g., Clarkson et al., 2008), such as the amounts of: (1) charitable donations (i.e., the amount of: (i) social investment and donations; (ii) assistance to NGOs; and (iii) community sponsorship); (2) political donations; and (3) energy and greenhouse gas consumption, water and paper usage and pollution related fines disclosed by the corporations. After scaling these various hard disclosure items where necessary (when they were available on a corporation-by-corporation basis) by total assets, and also reverse scoring political donations and pollution related fines (by multiplying them by -1 to obtain increasing measures of CSR performance), we ranked the corporations as per the hard disclosure items and then compared these rankings to our CSR disclosure index score rankings. Overall, we found that there is a relatively clear "match" between those corporations ranking high (low) on the hard disclosure items compared to those ranking high (low) on our CSR disclosure score index. Although this validity check is quite rudimentary and limited (given the inconsistent amounts of hard disclosure items available for each corporation in the stratified sample), it confirms that the corporations with the highest CSR disclosure scores in our main sample disclose significantly more positive/objective/hard CSR related information than corporations with the lowest CSR disclosure scores. We thus have confidence in the validity of our broad-based (52 items and six categories) CSR disclosure index as a proxy for CSR activity.

for the CSRDISC in accordance with the 52 individual CSR activity items (together with the abovementioned six category groupings) are presented in [Appendix A](#).¹⁴

3.4. Control variables

To control for other effects on corporate tax aggressiveness, we include several control variables from the literature in our base regression model which relate to: (1) corporate governance and fraud; and (2) standard determinants of ETRs. The data for the control variables were collected from the Aspect-Huntley financial database and the University of Technology – Sydney corporate governance database.

The proportion of board members who are independent directors (BODI) controls for differences in the extent of membership of independent directors on the board of directors. The board of directors is the highest internal control mechanism for monitoring the actions of top management. Outside directors have incentives to perform their monitoring tasks and not to collude with top managers to seize shareholder wealth, so the addition of outside directors on the board increases its ability to monitor top management (Fama and Jensen, 1983). Research by Lanis and Richardson (2011) on tax aggressiveness finds that the addition of a higher proportion of independent directors on the board reduces the likelihood of tax aggressiveness. BODI is measured as the proportion of board members who are independent directors as per the ASX principles of good corporate governance and best practice recommendations (ASX, 2003).¹⁵

Trouble (TROUBLE) controls for differences in the degree of financial health of a corporation (Loebbecke et al., 1989). Poor financial performance often causes management to place undue reliance on earnings and profitability, thereby increasing the threat of financial fraud in a corporation (Beasley, 1996). TROUBLE is measured as a dummy variable that takes a value of 1 if the corporation reported at least three annual net losses in the 6-year period preceding the first year of the tax aggressive activity, and 0 otherwise.

Age public (AGEPUB) controls for differences in the length of time that a corporation's stock has traded in public markets (Loebbecke et al., 1989). According to the American Institute of Certified Public Accountants (AICPA, 1987), it is possible that new publicly listed corporations run a much greater risk of financial wrongdoing as management is compelled to meet earnings expectations. Moreover, Beasley (1996) claims that the longer a corporation has traded in public markets the more likely it is to have made changes to comply with market obligations. AGE PUB is measured as the number of years that the corporation's stock has been traded on the ASX.

Management stock ownership of the board of directors (MTOBOD) controls for differences in the extent of the ordinary stock ownership of a corporation held by managers serving on the board (Loebbecke et al., 1989). Encouraging management to hold an equity interest in a corporation gives them greater incentive to increase its market value (Jensen and Meckling, 1976). However, managers could also be motivated to inflate the stock price by engaging in fraudulent behavior (Loebbecke et al., 1989). In terms of tax aggressiveness, Lanis and Richardson (2011) find a positive association between MTOBOD and tax aggressiveness. MTOBOD is measured as the cumulative proportion of ownership in the corporation held by insiders (e.g., managers) who serve on the board.

CEO tenure (CEOTENURE) controls for the CEO's ability to influence board composition and the board of directors monitoring of financial wrongdoing (Loebbecke et al., 1989). It is likely that CEOs

¹⁴ There is a potential argument for attaching weights to each CSR activity item in a CSR disclosure index because some items might be considered to be more important or have greater information value to the public than other items (see, e.g., Wallace, 1988). However, counter-arguments have also been raised for not using weights, such as: (1) attaching weights to each CSR activity item assumes that certain items are more important than others, which could be a subjective assessment and may not necessarily be the case; (2) within a large sample of CSR activity items, the different weights for CSR activity items could average or even-out; and (3) empirical evidence based on research by Adhikari and Tondkar (1992) and Zarzeski (1996), for example, indicates that there is little need to attach weights to CSR activity items. Therefore, we decided not to attach weights to any of the 52 individual CSR activity items in our CSR disclosure index.

¹⁵ According to the ASX (2003, p. 19): "an independent director is independent of management and free of any business or other relationship that could materially interfere with – or could reasonably be perceived to materially interfere with – the exercise of their unfettered and independent judgement."

with many years of experience exert more power than less established CEOs (Hermalin and Weisbach, 1988). CEOs are also perceived to have an influential voice about board decisions and board appointments, so there is a greater possibility that more experienced CEOs will act in their own self-interest by engaging in fraudulent activities (Mace, 1986). CEOTENURE is measured as the number of years that the CEO has served as a director on the board.

CEO duality (CEODUAL) is included to control for cases where the CEO and chairperson's positions are combined (Loebbecke et al., 1989). As the function of the chairperson is to run the board meetings and oversee the process of hiring, firing, evaluating and compensating the CEO, then the CEO cannot carry out the chairperson's monitoring function separately from his or her personal interests (Jensen, 1993). It is thus necessary to separate the chairperson and CEO positions if the board is to be an effective monitoring device. When the positions of CEO and chairperson are combined, the CEO is also able to influence board composition (Jensen, 1993). CEODUAL controls for this key leadership difference. It is measured as a dummy variable that takes a value of 1 if the chairperson of the board also holds the managerial position of CEO or managing director, and 0 otherwise.

Block held (BLOCKHLD) controls for differences in the extent of the stockholding held by blockholders that hold at least 5% of shares and who are not affiliated with management (Loebbecke et al., 1989). The existence of blockholders adds to the incentive to monitor management as these shareholders have greater power and influence over the board and management than less significant shareholders (Shleifer and Vishny, 1986; Jensen, 1993). BLOCKHLD is measured as the total proportion of outstanding shares of blockholders who hold at least 5% of outstanding shares and are not affiliated with management. Following Beasley (1996), we exclude blocks held by family corporations or trusts, employee share ownership plans and corporate retirement plans from the calculation of BLOCKHLD as the voting rights associated with these shares are normally controlled by top management of a corporation.

In addition to the aforementioned corporate governance and fraud control variables, we also include several ETR control variables to control for other effects. They are represented by corporation size (SIZE), leverage (LEV), capital intensity (CINT), inventory intensity (INVINT), research and development intensity (RDINT), the market-to-book ratio (MKTBK) and return on assets (ROA). Specifically, SIZE (measured as the natural log of total assets) is used to control for size effects. Based on previous Australian ETR research by Richardson and Lanis (2007), we expect to find that larger corporations are likely to be more tax aggressive than smaller corporations because they possess greater economic and political power relative to smaller corporations (Siegfried, 1972) and are able to reduce their tax burdens accordingly.

LEV is long-term debt divided by total assets, CINT is net property, plant and equipment divided by total assets and RDINT is R&D expenditure divided by net sales. Previous research (Gupta and Newberry, 1997) finds that LEV, CINT, and RDINT are positively associated with tax aggressiveness. LEV is positively associated with tax aggressiveness due to tax-deductible interest payments, CINT is positively associated with tax aggressiveness because of accelerated depreciation charges corresponding to asset lives and RDINT is positively associated with tax aggressiveness as a result of tax-deductible R&D expenditure.

We also include inventory intensity (INVINT) in our base regression model as an additional ETR control variable. To the extent that INVINT represents a substitute for CAPINT, intensive corporations should be less tax aggressive than capital intensive corporations (Stickney and McGee, 1982). INVINT is measured as inventory divided by total assets.

A growth variable, MKTBK (the market value of equity divided by the book value of equity) and a profitability variable, ROA (pre-tax income divided by total assets) are also included in our empirical analysis in line with previous ETR research (see, e.g., Gupta and Newberry, 1997; Adhikari et al., 2006). Owing to the conflicting results obtained for these variables in previous ETR research (see, e.g., Gupta and Newberry, 1997; Derashid and Zhang, 2003; Adhikari et al., 2006), no sign predictions are made for ROA and MKTBK in our study.

Finally, industry-sector (INDSEC) dummy variables defined at the two-digit GICS code level are also included as control variables because it is possible for tax aggressiveness to fluctuate across different industry sectors (see, e.g., Omer et al., 1993). We thus include nine INDSEC dummy variables in our base regression model: energy; materials; industries; consumer discretionary; consumer staples;

health care; information technology; telecommunications; and utilities (omitted sector). No sign predictions are made for the INDSEC dummies.

3.5. Regression procedure

We use Tobit regression analysis (see, e.g., Tobin, 1958; Amemiya, 1973) in this study because our dependent variable (proxied by ETR1 and ETR2) is truncated (limited) to the 0–1 range. Tobit regression analysis provides more efficient estimates of parameters and more accurate estimates of the expected value of the dependent variable than can be obtained from ordinary least squares (OLS) regression analysis when the dependent variable is truncated. OLS regression analysis assumes a constant variance of the error term between all observations. However, this assumption does not necessarily hold with a truncated dependent variable (Tobin, 1958; Amemiya, 1973). Thus, heteroskedasticity exists, which means that the standard errors of the estimates are inconsistent and the usual tests of significance cannot be applied (Long, 1997).

3.6. Base regression model

To examine the association between CSR and tax aggressiveness, we estimate the following base regression model:

$$\begin{aligned} TAG_{it} = & \alpha_0 + \beta_1 CSRDISC_{it} + \beta_2 BODI_{it} + \beta_3 TROUBLE_{it} + \beta_4 AGE PUB_{it} + \beta_5 MTOBOD_{it} \\ & + \beta_6 CEOTENURE_{it} + \beta_7 CEODUAL_{it} + \beta_8 BLKHLD_{it} + \beta_9 SIZE_{it} + \beta_{10} LEV_{it} + \beta_{11} CINT_{it} \\ & + \beta_{12} INVINT_{it} + \beta_{13} RDINT_{it} + \beta_{14} MKTBK_{it} + \beta_{15} ROA_{it} + \beta_{16-23} INDSEC_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

where: i = corporations 1 through 408; t = the financial year 2008/2009; TAG = a corporation's effective tax rate (i.e., ETR1 and ETR2, which are truncated to the 0–1 range); CSRDISC = the CSR disclosure index ranging between 0% and 100%; BODI = the proportion of board members who are independent directors; TROUBLE = a dummy variable that takes a value of 1 if the corporation reported at least three annual net losses in the 6-year period preceding the first year of the tax aggressive activity, and 0 otherwise; AGE PUB = the number of years that the corporation's shares have been traded on the stock exchange; MTOBOD = the cumulative proportion of ownership in the corporation held by insiders (e.g., managers) who serve on the board; CEOTENURE = the number of years that the CEO has served as a director; CEODUAL = a dummy variable that takes a value of 1 if the chairperson of the board holds the managerial positions of CEO or managing director, and 0 otherwise; BLKHLD = the total proportion of outstanding shares of blockholders who hold at least 5% of outstanding shares and are not affiliated with management; SIZE = the natural logarithm of total assets; LEV = long-term debt divided by total assets; CINT = net property, plant and equipment divided by total assets; INVINT = inventory divided by total assets; RDINT = R&D expenditure divided by net sales; MKTBK = the market value of equity divided by the book value of equity; ROA = pre-tax income divided by total assets; INDSEC = industry sector dummy variable that take a value of 1 if the corporation is represented in the specific GICS category, and 0 otherwise; and ε = the error term.

4. Empirical results

4.1. Descriptive statistics

The descriptive statistics of our variables are reported in Table 1. For TAG1, the mean (median) is .174 (.165) with a range of 0–1. We also find that the mean (median) for TAG2 is .109 (.105) with a range of 0–1. Given that both TAG measures have the same numerator and that operating cash flows are normally greater than book income, the mean for TAG1 is greater than TAG2, as expected. For CSR-DISC we observe that the mean (median) is .175 (.135) with a range of 0–1. The CSR disclosure levels of the corporations in our sample are relatively low, as expected, because the level to which a corporation engages in CSR is not mandatory.

Table 1
Descriptive statistics.

Variable	N	Mean	Std. dev.	Minimum	Median	Maximum
<i>Continuous variables</i>						
TAG1	408	.174	.198	0	.165	1
TAG2	408	.109	.210	0	.105	1
CSRDISC	408	.175	.124	.019	.135	.673
BODI	408	.469	.272	0	.500	.923
AGEPUB	408	15.327	11.209	2	12	59
MTOBOD	408	.081	.148	0	.012	.873
CEOTENURE	408	7.291	7.300	0	5	37
BLKHLD	408	.204	.207	0	.147	.790
SIZE	408	18.885	2.500	11.209	18.901	25.586
LEV	408	.172	.189	0	.050	3.140
CINT	408	.298	.426	0	.176	.509
INVINT	408	.081	.111	0	.029	.540
RDINT	408	.168	.231	0	0	.462
MKTBK	408	2.679	2.989	1.467	2.270	10.170
ROA	408	.145	.912	0	.041	.526
<i>Dummy variables</i>						
		0 (%)	1 (%)			
TROUBLE	408	352 (86%)	56 (14%)			
CEODUAL	408	223 (55%)	185 (45%)			

Variable definitions: TAG1 = income tax expense currently divided by book income; TAG2 = income tax expense currently payable divided by operating cash flows; CSRDISC = CSR disclosure index between 0% and 100%; BODI = the proportion of board members who are independent directors; AGEPUB = the number of years that the corporation's shares have been traded on the stock exchange; MTOBOD = the total proportion of corporate stock owned by insiders (e.g., managers) who serve on the board; CEOTENURE = the number of years that the CEO has served as a director; BLKHLD = the total proportion of outstanding shares of blockholders who hold at least 5% of outstanding shares and are not affiliated with management; SIZE = the natural logarithm of total assets; LEV = long-term debt divided by total assets; CINT = net property, plant, and equipment divided by total assets; INVINT = inventory divided by total assets; RDINT = R&D expenditure divided by net sales; MKTBK = the market value of equity divided by the book value of equity; ROA = pre-tax income divided by total assets; TROUBLE = a dummy variable that takes a value of 1 if the corporation reported at least three annual net losses in the 6-year period preceding the first year of the tax aggressive activity, and 0 otherwise; and CEODUAL = a dummy variable that takes a value of 1 if the chairperson of the board holds the managerial positions of CEO or managing director, and 0 otherwise.

Table 1 also reports the descriptive statistics of the other continuous variables in our base regression model. BODI has a mean (median) of .469 (.500), AGEPUB has a mean (median) of 15.327 (12), MTOBOD has a mean (median) of .081 (.012), CEOTENURE has a mean (median) of 7.291 (5), BLKHLD has a mean (median) of .204 (.147), SIZE has a mean (median) of 18.885 (18.901), LEV has a mean (median) of .172 (.050), CINT has a mean (median) of .298 (.176), INVINT has a mean (median) of .081 (.029), RDINT has a mean (median) of .168 (0), MKTBK has a mean (median) of 2.679 (2.270) and ROA has a mean (median) of .145 (.041).

For the dummy variables, we report that for TROUBLE, the vast majority of our sample (86%) comprises of corporations that did not report three annual net losses in the 6-year period preceding the first year of the tax aggressive activity, as expected. However, for CEODUAL we find that a slight majority of the sample (55%) represents corporations where the chairperson of the board holds the managerial positions of CEO or managing director.

Overall, an acceptable range of variation is observed for all of the variables presented in Table 1 as well as a reasonable level of consistency between the means and medians, reflecting normality of distributions (see, e.g., Hair et al., 2006).

4.2. Correlation results

The Pearson pairwise correlation results are presented in Table 2. The correlations show that TAG1 and TAG2 are significantly negatively associated with CSRDISC ($p < .05$). These results indicate that the higher the corporation's level of CSR, the lower is the level of corporate tax aggressiveness. For TAG1,

Table 2
Pearson correlation results.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
[1] TAG1	1																
[2] TAG2	.401***	1															
[3] CSRDISC	-.169***	-.110**	1														
[4] BODI	-.057	-.113**	.221***	1													
[5] TROUBLE	.055	.006	-.277***	-.189***	1												
[6] AGE PUB	.020	.043	.069	.036	-.103**	1											
[7] MTOBOD	.103**	.050	-.219***	-.307***	-.050	-.044	1										
[8] CEOTENURE	-.044	-.022	-.031	-.115**	-.152***	.166***	.307***	1									
[9] CEODUAL	.008	.074*	-.161***	-.242***	.138***	.046	.235***	.265***	1								
[10] BLKHL D	-.050	-.117**	.313***	.161***	-.178***	.059	-.233***	-.011	-.085*	1							
[11] SIZE	.022	.069*	.571***	.364***	-.564***	.110**	-.132***	.039	-.232***	.440***	1						
[12] LEV	.083*	.045	-.039	-.022	.056	-.089*	-.004	-.008	.014	.030	-.114**	1					
[13] CINT	.083*	.044	-.039	-.022	.056	.015	-.086*	-.033	.064	-.085*	.097*	.323***	1				
[14] INVINT	-.063	-.023	.030	.050	-.257***	.107**	.048	.010	-.079	.001	.165***	-.268***	.144***	1			
[15] RDINT	.104**	.035	-.175***	-.130***	.248***	-.049	.029	-.025	.076	-.033	-.313***	.114**	-.154***	-.238***	1		
[16] MKTBK	.016	.038	.111**	-.050	.104**	-.076	-.111**	-.043	.045	.160***	-.089*	.144***	-.013	-.187***	.047	1	
[17] ROA	.095**	.033	-.246***	-.231***	.385***	-.075	-.028	-.040	.029	-.075	-.470***	.116**	-.213***	-.234***	.233***	.317***	1

Variable definitions: See Table 1 for variable definitions.

N = 408 for all variables.

The p-values are one-tailed for directional hypotheses and two-tailed otherwise.

* Significance at the .10 level.

** Significance at the .05 level.

*** Significance at the .01 level.

we also find significant correlations (with predicted signs) with MTOBOD ($p < .05$), LEV ($p < .10$), CINT ($p < .10$), RDINT ($p < .05$), and ROA ($p < .05$). In terms of TAG 2, we observe significant correlations (with predicted signs) with BODI ($p < .05$), BOSS ($p < .10$), BLKHLD ($p < .05$), and SIZE ($p < .10$).

Table 2 also reports the correlations between the explanatory variables. It shows that only moderate levels of collinearity exist between the explanatory variables used in our study. The highest correlation coefficient is between CSRDISC and SIZE of .571 ($p < .01$). Moreover, we also calculate variance inflation factors (VIFs) when estimating our base regression model to test for signs of multi-collinearity among the explanatory variables. Our (unreported) results confirm that no VIFs exceed five for any of our explanatory variables, so multi-collinearity is not problematic in our base regression model.¹⁶

4.3. Regression results

The tobit regression results are reported in Table 3.¹⁷ For the TAG1 base regression model, we find that the regression coefficient for CSRDISC is negative and significantly associated with tax aggressiveness ($p < .05$), providing support for H1. Accordingly, the higher the level of CSR activities of a corporation, the lower is the level of tax aggressiveness. This result is consistent with our conjecture that where a corporation engages in more CSR activities (e.g., community and political involvement, environmental protection, social and community development and investment, promoting staff welfare and development, and having policies in place that maintain a good relationship with customers, suppliers and government bodies) it is less likely to be tax aggressive. Thus, where the corporation has a superior CSR profile, it is expected to be more guarded about undertaking tax aggressive activities as this would be inconsistent with its other CSR engagements and could possibly counteract the positive effects associated with the CSR activities of the corporation as viewed by society generally.

We also find that several of our corporate governance and fraud control variables are significantly associated with tax aggressiveness in the TAG1 base regression model. The regression coefficient for TROUBLE is positive and significantly associated with tax aggressiveness ($p < .01$), as expected. Poor financial performance causes management to place undue reliance on earnings and profitability (Loebbecke et al., 1989), thereby increasing the threat of tax aggressiveness in the corporation. We also observe that the regression coefficient for MTOBOD is positive and significantly associated with tax aggressiveness ($p < .01$), as expected. It appears that managers are motivated to inflate the stock price of a corporation by engaging in tax aggressive behavior (Lanis and Richardson, 2011). Table 3 also shows that the regression coefficient for CEODUAL is positive and significantly associated with tax aggressiveness ($p < .10$), as expected. Thus, where the CEO and chairperson's positions are combined (Jensen, 1993), this increases the likelihood of tax aggressiveness through ineffective monitoring of top management owing to the conflict of interest of the CEO.

In terms of the ETR control variables for the TAG1 base regression model, we find that the regression coefficient for INVINT is negative and significantly associated with tax aggressiveness ($p < .05$), as expected. Because INVINT is a substitute for CAPINT, inventory intensive corporations are less tax aggressive than capital intensive corporations (Stickney and McGee, 1982). We also observe that the regression coefficient for RDINT is positive and significantly associated with tax aggressiveness ($p < .05$), as R&D intensive corporations are expected to use tax-deductible R&D expenditure to facilitate tax aggressiveness (Stickney and McGee, 1982). We also find that some of the INDSEC regression coefficients are positively associated with tax aggressiveness as suggested by prior research (Omer et al., 1993), including CONS ($p < .10$) and IT ($p < .10$). Finally, the regression coefficients for BODI, AGE-PUB, CEOTENURE, BLKHLD, SIZE, LEV, CINT, MKTBK, and ROA are not significant.

¹⁶ Hair et al. (2006) suggest that a VIF value above the threshold of ten corresponds to a high level of multi-collinearity among the explanatory variables.

¹⁷ We perform several tests to ensure that the major assumptions of Tobit regression analysis are satisfied for the regression models developed in this section of our study (see, e.g., Long, 1997). First, the normal probability plots of the residuals of the regression models indicate that the normality assumption was satisfied. Second, the plots of the residuals against the corresponding fitted (predicted) values show that the assumptions of the homogeneity of variance of residuals, and the appropriateness of the linear models were not violated.

Table 3
Tobit regression results.

Variable	Predicted sign	TAG1 ^a	TAG2 ^a
Intercept	?	.751 (1.22)	.248 (.64)
CSRDISC	–	–.644 (–1.79)**	–.730 (–2.55)***
BODI	–	–.020 (–.13)	–.022 (–.17)
TROUBLE	+	.211 (3.75)***	.088 (.91)
AGEPUB	–	.001 (.31)	.003 (1.04)
MTOBOD	+	.775 (2.68)***	.161 (.69)
CEOTENURE	+	.003 (.95)	.001 (.09)
CEODUAL	+	.123 (1.29)*	.249 (1.82)**
BLKHLTD	–	–.095 (–.59)	–.627 (–3.43)***
SIZE	+	.014 (.72)	.022 (1.12)
LEV	+	.044 (.34)	.313 (2.14)**
CINT	+	.076 (.54)	.236 (2.16)**
INVINT	–	–.589 (–1.67)**	–.126 (–.28)
RDINT	+	.014 (1.70)**	.013 (1.60)*
MKTBK	?	.001 (.84)	.001 (1.59)
ROA	?	.007 (.34)	.041 (2.23)**
INDSEC:			
ENE	?	.491 (.80)	.078 (.43)
MAT	?	.731 (1.18)	.050 (.43)
IND	?	.428 (.66)	.101 (.51)
COND	?	.691 (1.12)	.035 (.22)
CONS	?	.822 (1.29)*	.253 (1.83)*
HCARE	?	.649 (1.03)	.035 (.23)
IT	?	.871 (1.34)*	.015 (.08)
TELE	?	.713 (1.08)	.020 (.12)
Pseudo R ² (%)		14.16%	11.80%
F-value		7.44***	4.48***
Log likelihood		–376.51	–536.87
N		408	408

Variable definitions: INDSEC = industry sector dummy variable that take a value of 1 if the corporation is represented in the specific GICS category and 0 otherwise. Thus: ENE = energy sector dummy; MAT = materials sector dummy; IND industries sector dummy; COND = consumer discretionary dummy; CONS = consumer staples dummy; HCARE = health care dummy; IT = information technology dummy; TELE = telecommunications dummy; and see Table 1 for other variable definitions.

^a Coefficient estimates with the *t*-statistics in parentheses. Standard errors are corrected using the White (1980) procedure.

* Significance at the .10 level. The *p*-values are one-tailed for directional hypotheses and two-tailed otherwise.

** Significance at the .05 level. The *p*-values are one-tailed for directional hypotheses and two-tailed otherwise.

*** Significance at the .01 level. The *p*-values are one-tailed for directional hypotheses and two-tailed otherwise.

Table 3 also reports the regression results for the TAG2 base regression model. Once more, we observe that the regression coefficient for CSRDISC is negative and significantly associated with tax aggressiveness ($p < .01$), providing additional support for H1 based on a different proxy measure of corporate tax aggressiveness. Our empirical findings thus indicate that where a corporation has a strong CSR mandate in place, it is less likely to resort to tax aggressive behavior because this could potentially offset the positive effects associated with CSR activities of the corporation as viewed by society as a whole.

Some of our corporate governance and fraud control variables are also significantly associated with tax aggressiveness in the TAG 2 base regression model. Again, we find that the regression coefficient for CEODUAL is positive and significantly associated with tax aggressiveness ($p < .05$), as expected. We also observe that the regression coefficient for BLKHLTD is negative and significantly associated with tax aggressiveness ($p < .01$) in this regression model, as expected. The existence of blockholders adds to the incentive to monitor management, as these shareholders have greater power and influence over the board and management than less significant shareholders (Shleifer and Vishny, 1986; Jensen, 1993).

For the ETR control variables, we find that the regression coefficient for RDINT is once more, positive and significantly associated with tax aggressiveness ($p < .10$). We also observe that the regression

coefficient for LEV is positive and significantly associated with tax aggressiveness ($p < .10$), as highly leveraged corporations are expected to use tax-deductible interest payments to promote tax aggressiveness in the corporation (Stickney and McGee, 1982). We also find that the regression coefficient for CINT is positive and significantly associated with tax aggressiveness ($p < .05$), as expected. Capital intensive corporations employ accelerated depreciation charges based on asset lives to facilitate tax aggressiveness (Gupta and Newberry, 1997). Our results also show that the regression coefficient for ROA is positive and significantly associated with tax aggressiveness ($p < .05$), indicating that profitable corporations are more likely to engage in tax aggressive activities than less profitable corporations. We also find that the INDSEC regression coefficient for CONS is again positively associated with tax aggressiveness ($p < .10$). Finally, the regression coefficients for BODI, TROUBLE, AGEPUB, MTOBOD, CEOTENURE, BLKHLD, SIZE, INVINT, and MKTBK are not significant.

Overall, the base regression model results for TAG1 and TAG2 consistently support our conjecture that the higher the level of CSR activities of a corporation, the lower is the level of tax aggressiveness.

4.4. Additional analysis

As mentioned in the discussion of the CSR disclosure index in the research design, we calculated this index based on 52 individual CSR activity items which can be grouped according to six different CSR categories: (1) corporate and CSR strategy items; (2) staffing strategy items; (3) social investment items; (4) environment items; (5) customer and supplier items; and (6) community and political involvement items. We are interested in carrying out an additional Tobit regression analysis to determine which of the six individual CSR categories are statistically (negatively) associated with tax aggressiveness. Thus, we estimate the following extended regression model:

$$\begin{aligned} \text{TAG}_{it} = & \alpha_0 + \beta_1 \text{CSRDISC1}_{it} + \beta_2 \text{CSRDISC2}_{it} + \beta_3 \text{CSRDISC3}_{it} + \beta_4 \text{CSRDISC4}_{it} \\ & + \beta_5 \text{CSRDISC5}_{it} + \beta_6 \text{CSRDISC6}_{it} + \beta_7 \text{BODI}_{it} + \beta_8 \text{TROUBLE}_{it} + \beta_9 \text{AGEPUB}_{it} \\ & + \beta_{10} \text{MTOBOD}_{it} + \beta_{11} \text{CEOTENURE}_{it} + \beta_{12} \text{CEODUAL}_{it} + \beta_{13} \text{BLKHLD}_{it} + \beta_{14} \text{SIZE}_{it} \\ & + \beta_{15} \text{LEV}_{it} + \beta_{16} \text{CINT}_{it} + \beta_{17} \text{INVINT}_{it} + \beta_{18} \text{RDINT}_{it} + \beta_{19} \text{MKTBK}_{it} + \beta_{20} \text{ROA}_{it} \\ & + \beta_{21-28} \text{INDSEC}_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

where: CSRDISC1 = the CSR disclosure index for corporate and CSR strategy items ranging between 0 and 100%; CSRDISC2 = the CSR disclosure index for staffing strategy items ranging between 0% and 100%; CSRDISC3 = the CSR disclosure index for social investment items ranging between 0% and 100%; CSRDISC4 = the CSR disclosure index for environment items ranging between 0% and 100%; CSRDISC5 = the CSR disclosure index for customers and suppliers items ranging between 0% and 100%; and CSRDISC6 = the CSR disclosure index for community and political involvement items ranging between 0% and 100%.

We present the results of our additional regression analysis in Table 4.¹⁸ For the TAG1 extended regression model, the regression coefficient for CSRDISC3 is negative and significantly associated with tax aggressiveness ($p < .05$). This is an interesting finding as the CSRDISC3 category relates to the social investment commitment of a corporation. It includes disclosure items relating to a corporation's: social commitment statement; value of social investment and charitable work; assistance to charities and NGOs; community sponsorship (financial support) and staff volunteering. CSRDISC3 is potentially one of the most relevant CSR categories in terms of society and taxation generally, as it is particularly

¹⁸ The Pearson correlation results for the six different CSR categories are reported in Appendix B. The Pearson correlations show that only moderate levels of collinearity exist among the six different CSR categories. The highest correlation coefficient is between CSRDISC4 and CSRDISC6 of .584 ($p < .01$). We also computed VIFs for the six CSR disclosure categories. Our (unreported) results show that no VIFs exceed five for any of six different disclosure categories, so multi-collinearity is not problematic in our extended regression model. Finally, we perform several tests to ensure that the key assumptions of Tobit regression analysis are satisfied for our extended regression model (see, e.g., Long, 1997). First, the normal probability plots of the residuals of the regression models show that the normality assumption was satisfied. Second, the plots of the residuals against the corresponding fitted (predicted) values indicate that the assumptions of the homogeneity of variance of residuals, and the appropriateness of the linear models were not violated.

Table 4

Tobit regression results – additional analysis.

Variable	Predicted sign	TAG1 ^a	TAG2 ^a
Intercept	?	.785 (1.23)	.106 (.24)
CSRDISC1	–	–.102 (–.38)	–.534 (–7.58)***
CSRDISC2	–	–.141 (–.43)	–.166 (–.13)
CSRDISC3	–	–.519 (–2.19)**	–.394 (–2.06)**
CSRDISC4	–	–.004 (–.02)	–.024 (–.12)
CSRDISC5	–	–.133 (–.57)	–.010 (–.05)
CSRDISC6	–	–.448 (–1.06)	–.330 (–.54)
BODI	–	–.003 (–.02)	–.002 (–.02)
TROUBLE	+	.200 (3.65)***	.084 (.86)
AGEPUB	–	.001 (.56)	.004 (1.27)
MTOBOD	+	.785 (2.72)***	.711 (–2.18)**
CEOTENURE	+	.003 (.84)	.002 (.39)
CEODUAL	+	.116 (1.24)*	.285 (2.01)**
BLKHLD	–	–.082 (–.52)	–.050 (–.46)
SIZE	+	.015 (.80)	.020 (1.00)
LEV	+	.038 (.30)	.309 (2.20)**
CINT	+	.075 (.57)	.232 (2.16)**
INVINT	–	–.614 (–1.70)**	–.016 (–.04)
RDINT	+	.013 (1.58)*	.002 (.21)
MKTBK	?	.001 (1.02)	.002 (1.67)*
ROA	?	.006 (.32)	.036 (1.96)*
INDSEC:			
ENE	?	.499 (.82)	.073 (.34)
MAT	?	.732 (1.19)	.026 (.90)
IND	?	.422 (.66)	.057 (.25)
COND	?	.720 (1.17)	.006 (.03)
CONS	?	.805 (1.28)*	.190 (.52)
HCARE	?	.660 (1.06)	.059 (.29)
IT	?	.887 (1.39)*	.024 (.11)
TELE	?	.556 (.30)	.060 (.26)
Pseudo R ² (%)		16.99%	11.35%
F-value		6.53***	7.02***
Log likelihood		–374.92	–531.85
N		408	408

Variable definitions: CSRDISC1 = CSR disclosure index for corporate and CSR strategy ranging between 0% and 100%; CSRDISC2 = CSR disclosure index for staffing strategy ranging between 0% and 100%; CSRDISC3 = CSR disclosure index for social investment ranging between 0% and 100%; CSRDISC4 = CSR disclosure index for the environment ranging between 0% and 100%; CSRDISC5 = CSR disclosure index for customers and suppliers ranging between 0% and 100%; CSRDISC6 = CSR disclosure index for community and political involvement ranging between 0% and 100%; and see Tables 1 and 3 for other variable definitions.

^a Coefficient estimates with the *t*-statistics in parentheses. Standard errors are corrected using the White (1980) procedure.

* Significance at the .10 level. The *p*-values are one-tailed for directional hypotheses and two-tailed otherwise.

** Significance at the .05 level. The *p*-values are one-tailed for directional hypotheses and two-tailed otherwise.

*** Significance at the .01 level. The *p*-values are one-tailed for directional hypotheses and two-tailed otherwise.

relevant to the provision of public goods to society, which is directly funded (in part) by the corporate tax system (see, e.g., Freedman, 2003; Williams, 2007). Nevertheless, we find that the regression coefficients for CSRDISC1, CSRDISC2, CSRDISC4, CSRDISC5, and CSRDISC6 are not significant in this extended regression model.

We also find that some of our corporate governance and fraud control variables are significantly associated with tax aggressiveness in the TAG1 extended regression model. The regression coefficient for TROUBLE is positive and significantly associated with tax aggressiveness ($p < .01$), as expected. Poor financial performance causes management to place undue reliance on earnings and profitability (Loebbecke et al., 1989), which increases the likelihood of tax aggressiveness. We also observe that the regression coefficient for MTOBOD is positive and significantly associated with tax aggressiveness ($p < .01$), as expected. It seems that managers are motivated to increase the stock price of a corporation by engaging in tax aggressive behavior (Lanis and Richardson, 2011). Table 4 also shows that the

Table A1

Table CSR disclosure items – summary and descriptive statistics.

Item	Category of CSR disclosure item	Mean	Median	Std. dev.
	<i>1. Corporate and CSR strategy items</i>			
1	Corporate mission	0.324	0	0.468
2	Code of ethics/business conduct	0.858	1	0.350
3	CSR strategy statement	0.186	0	0.390
4	Record of complaints	0.980	1	0.139
5	Relationship with clients	0.169	0	0.375
6	Impact on work practice	0.105	0	0.307
7	Impact on suppliers	0.346	0	0.476
8	Corporate governance statement	0.012	0	0.110
	Total for category	0.373	0	0.180
	<i>2. Staff strategy items</i>			
9	Staff training	0.147	0	0.355
10	Staff career development	0.047	0	0.211
11	Staff diversity	0.056	0	0.231
12	Staff protection (EEO, safety and security)	0.304	0	0.461
13	Compliance with labor standards	0.025	0	0.155
14	Employees' ownership	0.701	1	0.458
15	Staff communication	0.027	0	0.162
16	General staff appointment policy	0.010	0	0.099
17	Executive appointment policy	0.260	0	0.439
18	Major appointment for the year	0.600	1	0.495
19	Breakdown of employees by geographical	0.037	0	0.188
20	Breakdown of employees by line of business	0.012	0	0.110
21	Breakdown of employees by level of qualifications	0.002	0	0.050
22	Breakdown of employees by ethnic origin	0.000	0	0.000
23	Discussion of employees' welfare	0.044	0	0.206
24	Information on accidents at workplace	0.181	0	0.386
25	Monitoring of staff and employees work relation policy	0.002	0	0.050
26	Implement of employees mission statement	0.032	0	0.176
	Total for category	0.136	0	0.109
	<i>3. Social investment items</i>			
27	Social commitment statement	0.235	0	0.425
28	Value of social investment and charitable work	0.064	0	0.245
29	Assistance to charities and NGOs	0.083	0	0.277
30	Community sponsorship (financial support)	0.108	0	0.311
31	Staff volunteering	0.032	0	0.176
	Total for category	0.104	0	0.218
	<i>4. Environment items</i>			
32	Environmental protection statement	0.586	1	0.493
33	Does the firm recognize environmental protection objectives?	0.581	1	0.494
34	Do they measure their performance against the objectives?	0.275	0	0.447
35	Greenhouse gas emissions policy	0.255	0	0.436
36	Energy consumption	0.208	0	0.407
37	Water consumption	0.132	0	0.339
38	Paper recycling	0.032	0	0.176
39	Ink recycling	0.002	0	0.050
	Total for category	0.259	0	0.260
	<i>5. Customer and supplier items</i>			
40	Statement of internal control	0.388	0	0.488
41	Value added statement	0.002	0	0.050
42	Product safety statement	0.022	0	0.147
43	Improvement in product quality	0.088	0	0.284
44	Improvement in customer service	0.078	0	0.269
45	Distribution of marketing network for finished products	0.066	0	0.249
46	Customer award /ratings received	0.054	0	0.226

(continued on next page)

Table A1 (continued)

Item	Category of CSR disclosure item	Mean	Median	Std. dev.
	Total for category	0.100	0	0.136
	6. Community and political involvement items			
47	Participation in government social campaign	0.007	0	0.086
48	Community programs (health and education)	0.049	0	0.216
49	KPIs linked to CSR (social, community, and environment)	0.196	0	0.398
50	Assigned specific responsibility	0.000	0	0.000
51	Policies on lobbying and political donations	0.010	0	0.099
52	Charity/pro-bono work	0.127	0	0.334
	Total for category	0.065	0	0.126
	Grand Total for the 52 items	0.175	.135	0.124

Note: The 52 CSR data items were hand collected from the annual reports for the sample corporations for the 2008/2009 financial year.

Table B1

Pearson correlations for the CSR disclosure items.

	CSRDISC1	CSRDISC2	CSRDISC3	CSRDISC4	CSRDISC5	CSRDISC6
CSRDISC1	1					
CSRDISC2	.336***	1				
CSRDISC3	.576***	.472***	1			
CSRDISC4	.552***	.563***	.474***	1		
CSRDISC5	.459***	.384***	.336***	.328***	1	
CSRDISC6	.579***	.561***	.409***	.584***	.439***	1

Variable definitions: CSRDISC1 = CSR disclosure index for corporate and CSR strategy; CSRDISC2 = CSR disclosure index for staffing strategy; CSRDISC3 = CSR disclosure index for social investment; CSRDISC4 = CSR disclosure index for the environment; CSRDISC5 = CSR disclosure index for customers and suppliers; and CSRDISC6 = CSR disclosure index for community and political involvement.

N = 408 for all variables.

*** Significance at the .01 level. The *p*-values are two-tailed.

regression coefficient for CEODUAL is positive and significantly associated with tax aggressiveness ($p < .10$), as expected. Hence, where the CEO and chairperson's positions are combined (Jensen, 1993), this increases the possibility of tax aggressiveness in a corporation.

In terms of the ETR control variables, we find that the regression coefficient for INVINT is negative and significantly associated with tax aggressiveness ($p < .05$), as expected. Because INVINT is a substitute for CAPINT, inventory intensive corporations are not as tax aggressive as capital intensive corporations (Stickney and McGee, 1982). We also observe that the regression coefficient for RDINT is positive and significantly associated with tax aggressiveness ($p < .10$), as R&D intensive corporations are expected to use tax-deductible R&D expenditure to facilitate tax aggressiveness (Stickney and McGee, 1982). We also find that the INDSEC regression coefficient for CONS is positively associated with tax aggressiveness ($p < .10$). Finally, the regression coefficients for BODI, AGE PUB, CEOTENURE, BLKHL D, SIZE, LEV, CINT, MKTBK, and ROA are not significant.

Table 4 also reports the regression results for the TAG2 extended regression model. We find that the regression coefficient for CSRDISC1 is negative and significantly associated with tax aggressiveness ($p < .01$). CSRDISC1 relates to the corporate and CSR strategy of the corporation. It includes disclosure items pertaining to a corporation's: mission; code of ethics/business conduct; CSR strategy statement; record of complaints; relationship with clients; impact on work practice; impact on suppliers; and corporate governance statement. CSRDISC1 is potentially another applicable CSR category in terms of taxation as it partly relates to the ethical behavior and business conduct of a corporation. Thus, CSRDISC1 could possibly have major ramifications for society, as poor ethical behavior and business conduct on the part of a corporation could potentially reduce the level of corporate tax collections which is available to assist the funding of the provision of public goods in society (Freise et al., 2008). Moreover, we once again find that the regression coefficient for CSRDISC3 is negative and significantly associated with tax aggressiveness ($p < .05$). It seems that the social investment commitment of a

corporation is especially pertinent as to whether a corporation will engage in tax aggressiveness. However, the regression coefficients for CSRDISC2, CSRDISC4, CSRDISC5, and CSRDISC6 are not significant in this extended regression model.

Regarding our corporate governance and fraud control variables, we observe that the regression coefficient for MTOBOD is once more positive and significantly associated with tax aggressiveness ($p < .01$), as expected. Again, we also find that the regression coefficient for CEODUAL is positive and significantly associated with tax aggressiveness ($p < .05$), as expected.

For the ETR control variables, we observe that the regression coefficient for LEV is positive and significantly associated with tax aggressiveness ($p < .05$), as expected. Highly levered corporations utilize the tax deductibility of interest payments to facilitate tax aggressiveness (Stickney and McGee, 1982). We also find that the regression coefficient for CINT is positive and significantly associated with tax aggressiveness ($p < .05$), as expected. Capital intensive corporations exploit accelerated depreciation charges based on asset lives to promote tax aggressiveness (Gupta and Newberry, 1997). The regression coefficient for MKTBK is also positive and significantly associated with tax aggressiveness ($p < .05$), showing that corporations with a high market value relative to book value are more likely to be tax aggressive. Our results also indicate that the regression coefficient for ROA is positive and significantly associated with tax aggressiveness ($p < .05$). It appears that profitable corporations are more likely to engage in tax aggressive activities than less profitable corporations. Finally, the regression coefficients for BODI, TROUBLE, AGEPUB, CEOTENURE, BLKHLD, SIZE, INVINT, RDINT, MKTBK, and INDSEC are not significant.

On the whole, the extended regression model results provide some evidence that the social investment commitment, and corporate and CSR strategy (including the ethics and business conduct) of a corporation are important elements of CSR activities that have a negative impact on tax aggressiveness.

5. Conclusions

This study investigates the association between CSR and corporate tax aggressiveness. Based on a sample of 408 publicly listed Australian corporations for the 2008/2009 financial year, our regression results indicate that the higher the level of CSR disclosure of a corporation, the lower is the level of tax aggressiveness. We find that a negative and statistically significant association between CSR disclosure and tax aggressiveness holds across a number of different regression model specifications, so more socially responsible corporations are likely to be less tax aggressive in nature. Finally, the regression results from our additional analysis show that the social investment commitment, and corporate and CSR strategy (including the ethics and business conduct) of a corporation are fundamental elements of CSR activities that have a negative impact on tax aggressiveness.

Overall, our study provides unique insights into the association between CSR and corporate tax aggressiveness. In so doing, it helps to extend the literature on this topic. Our findings should also be of value to tax policymakers who seek to identify the circumstances under which the risk of corporate tax aggressiveness is higher. Finally, this study provides further evidence for an emerging research paradigm regarding CSR and corporate tax aggressiveness (see, e.g., Sikka, 2010).

This study is subject to several limitations. First, the sample is drawn from publicly listed Australian corporations. Because of data unavailability, it was not possible to include unlisted corporations in our sample. Second, we constructed our tax aggressiveness (ETR) measures based on financial statement data as tax return data are private and unavailable. The literature (see, e.g., Plesko, 2003) questions the accuracy of financial-statement-based tax aggressiveness measures, so our results should be interpreted with some caution. Third, publicly available annual reports and CSR reports were consulted to determine the level of CSR disclosure (as a proxy for CSR activity) in our study. However, some previous research suggests this to be a poor proxy for CSR activity.

Future research into CSR and corporate tax aggressiveness could examine several important matters. First, a more detailed analysis could be carried out regarding which specific CSR activities are more closely associated with a corporation's tax policy and why (as our results indicate) some CSR activities are more important than others. Second, further analysis could be undertaken into the link

between a broad range of CSR disclosure items and CSR activities in Australia and elsewhere. Third, the role of ethics in driving CSR activities and corporate tax policy requires further investigation. We encourage future research in this area.

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Appendix A

See Table A1.

Appendix B

See Table B1.

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