



Business Strategy, Corporate Social Responsibility, and Tax Avoidance

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Abstract

This study examines whether corporate social responsibility (CSR) has an influence on the relation between business strategy (i.e., *Prospectors* and *Defenders* in the Miles and Snow organizational strategy) and tax avoidance. Based on the data of firms in the United States from 2002 to 2013, it is assumed that the relation between business strategy and tax avoidance is moderated by corporate social performance. Research findings suggest that *Prospectors* with higher CSR ratings are positively associated with higher cash effective tax rate. The results also indicate that CSR ratings show the same moderating effect on *Defenders*. Overall, evidence suggests that a firm's inherent characteristics (i.e., business strategy) can affect its decision making in tax management while later-adopted strategy of the firm (i.e., CSR implementation) also plays an indispensable role.

Keywords: Corporate Social Responsibility, Tax Avoidance, Organizational Strategy

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Introduction

Global economic growth brings forth abundant business prospects. Meanwhile, in light of increasing competition, firms tend to violate ethical principles of business operation. For instance, issues regarding environmental damage, inappropriate production process, labor disputes, and corporate tax payment occur. Taxation is the primary source of income for the government to function properly. With tax revenue, the government can maintain and develop infrastructures that may further lead to a better society. Some articles thus suggest that an essential way for firms to engage in the society is to pay taxes (Christensen and Murphy 2004, Hoi, Wu and Zhang 2013). However, higher taxation means lesser profit for firms. Therefore, in order to increase profits to fulfill shareholders' interest, some firms resort to tax management to minimize their tax payment. Most people consider tax avoidance as socially irresponsible because tax revenue is heavily connected to the society (Erle 2008). As a result, stakeholders start to distrust and pay close attention to the every movement of the firms. The awareness of the importance of corporate social responsibility, hereafter referred to as CSR, also arouses heated academic and business discussions.

The number of research conducted on the relation between CSR and tax avoidance increased steadily since Hanlon and Heitzman (2010) stated that this topic ought to be examined more for its importance. While some argue that companies with higher corporate social performance involve in less tax avoidance behaviors to uphold their CSR spirit, others argue that CSR firms have higher propensity to engage in tax management because these companies deem that the resources put to CSR implementation should compensate the amount of tax avoidance. Later, Higgins, Omer, and Phillips (2015) suggest that firms' business strategy have an impact on tax avoidance. Their findings indicate that researchers should take business strategy into account since this factor affects tax avoidance. In this study, I apply the results in

Higgins et al. (2015) and extend the research by using a different perspective to investigate the role of CSR in the relation between business strategy and tax avoidance. Specifically, this study addresses the following question:

RQ: Do CSR influences the tax avoidance behavior in firms that implement Prospectors (Defenders) as their business strategy?

Although the public only started to concern firms' CSR adoption until last decade, the concept of CSR can be dated back to 1950s. Consistent with Carroll and Shabana (2010), the definition of CSR in this research is 'an integration of business fulfillment of economic, legal, ethical and philanthropic responsibilities' (p.89). The concept of CSR has been challenged by many scholars. The most widely known example is Milton Friedman. He argues that managers' primary goal is to maximize firms' profits while complying with laws and regulations. This view conforms to the shareholder theory. Contrary to shareholder theory, stakeholder theory, officially introduced by R. Edward Freeman in 1983, states that managers need to consider more than just shareholders. Specifically, top management needs to consider every party that can affect or be affected by the firm's decision. The term 'social' in CSR can be further elaborated with the stakeholder theory. It stands for consumers, employees, community, and the society as a whole. Friedman's initial intention was to oppose CSR implementation. However, Carroll (1991) points out that Friedman's statement fulfills the fundamental spirit of CSR which are economic responsibilities, legal responsibilities, and ethical responsibilities.

The relation between tax avoidance and CSR has been previously studied in numerous empirical researches of mixed findings. For example, Lanis and Richardson (2013, 2015) document a positive relation between tax avoidance and CSR, whereas Davis et al. (2016) find that highly socially responsible firms involve in more tax avoidance activities. Other influential factors in tax avoidance behaviors have also been explored. Based on Miles and Snow's (1978,

2003) strategic typology, Higgins et al. (2015) find that firms that implement *Prospector* strategy as their business strategy have a higher propensity in engaging in tax avoidance behavior. Moreover, *Prospectors* are more aggressively inclined to avoid tax payment. These inconsistent results might result from the difference in research method or other unexplored potential factors. Prior studies that have examined the relation between tax avoidance and CSR did not include business strategy as a factor. However, samples in the studies might comprise firms with different business strategy. Thus, I investigate what effect CSR will bring to the relation between business strategy and tax avoidance by using KLD-ratings in MSCI database. With an exclusion of Corporate Governance category, I sum up the total numbers of strength in other six CSR-categories and then minus the sum of the total numbers of concerns to derive the moderator CSR.

To better address the research question of this study, I employ cash effective tax rate, GAAP effective tax rate and five-year effective tax rate respectively to measure tax avoidance. I test the research question by referring to public firms in the United States from the year of 2002 to 2013. Based on different tax avoidance measures, there are three main OLS regressions. Consistent with Davis et al. (2106), the findings of this study suggest that CSR ratings show significantly negative relation with all three tax avoidance measures, but only the results in GAAP effective tax rates remain significant after adding control variables. I also find that in both results with control variables and without control variables, the *Prospectors* are positively associated with lower effective tax rates. Different from the results in Higgins et al. (2015), my results suggest that *Defenders* have lower tax avoidance behavior. Lastly, the outcome of interactions of *Prospectors* and *Defenders* with CSR ratings vary. CSR ratings weaken tax avoidance behavior in *Prospectors* when using cash effective tax rate as the measure no matter with or without adding control variables. However, CSR only increases *Defenders'* GAAP effective tax rates when control variables are not included. Other results regarding the interaction effect are positive but insignificant. Overall, the prominent results are in alignment

with my prediction.

This study adds to the existing researches conducted on CSR and tax and also supports the statements that *Prospectors* have higher propensity to reduce their taxes payment (Higgins et al. 2015). Moreover, I find that *Defenders* engage less in tax planning activities if looking at the short term period. This suggests that strategic difference is also a factor that influences tax management decision-making. Additionally, I find that *Prospectors* and *Defenders* exhibit lower tax avoidance when they are more socially responsible, but the results indicate otherwise when only looking at the relation between CSR index and effective tax rates. This suggests that future researchers should be aware of other organizational characteristics or potential conditions that might affect tax avoidance behaviors. For example, Watson (2015) finds that earning performance impacts the tax planning activities of socially responsible firms. Accordingly, there are still a lot of latent factors for future researchers to explore in the relation between corporate tax avoidance and CSR.

In the following section, an introduction on the theoretical background, literature review and hypothesis development will be given. The next section presents the research design which is followed by the empirical results in section 4 and conclusions in section 5.

2. Theory and hypothesis development

Since the proposal of CSR, like other theories, controversies arouse in firms' obligation to take this responsibility and the definition of pro-social behaviors. Resource distribution is one of the heavily debated issues in light of CSR. Being socially responsible means firms have to split part of their resources to stakeholders that are non-shareholders. The most well-known CSR opponent, Milton Friedman, used agency theory to argue that managers' only goal is to increase the firms' profits. The agency theory refers to the relationship of one party (the agent) working for another party (the principal). In most cases, this relationship is established on a contract. An agent must work toward the direction or goal as the principal wishes. Contradicting goals or desires of the principal and the agent lead to goal incongruence, which is a common agency problem (Eisenhardt 1989). Friedman (1970) states that if to consider a manager as an individual, the person can be socially responsible by spending his own time and money, because his role under this scenario is the principal. However, a manager holds the position of an agent while working in a company. Therefore, a manager needs to fulfill the best interest of the principals — shareholders. Namely, the executives have responsibilities toward their principals instead of the society or the public. Thus, the top management should pursue maximum profit under legal and reasonable circumstances. This idea is also called the shareholder theory, which defines that a manager's objective is to increase shareholders' benefits.

In 1983, R. Edward Freeman introduced the stakeholder theory. Unlike shareholder theory, stakeholder theory expands the relationship to a wider perspective that includes all parties that can influence or be influenced by the firm's decisions. Carroll (1991) points out that the meaning of 'social' in CSR can be interpreted by the 'stakeholder' in stakeholder theory. Therefore, the term 'social' used in CSR represents, for instance, consumers, employees, or even in a broader sense — the society. Under stakeholder theory, executives' biggest challenge

is to maintain the balance among all stakeholders. It is called stakeholder management. To successfully satisfy every stakeholder, managers must distinguish the power and legitimacy of each party (Carroll 1991). The ultimate goal of stakeholder management is to fulfill maximum satisfaction for the greatest number of stakeholders while minimizing the damage to others. More specifically, the question is how managers manage to fulfill the interests of shareholders while being socially responsible.

2.1 Stakeholder Theory

Stakeholder theory provides managers with a different mentality in decision-making. Freeman (1984) defines stakeholders as “those groups who can affect or are affected by the achievement of an organization’s purpose” (p.49). Compared with shareholder view; managers need to consider much more under the stakeholder theory. For instance, the interests of employees, consumers, society, and the government. The expansion of interest parties sophisticated managers’ decision-making process, because part of the firm’s success is also based on its relationship with the stakeholders (Russo and Perrini 2009).

CSR adoption is considered as a direct way for firms to interact more with other stakeholders based on its definition. Integrating CSR and stakeholder theory, Freeman (1984) provides a good interpretation which is “less emphasis is put on satisfying owners, and comparatively more emphasis is put on the public or the community or the employees” (p.38). According to this statement, it is clear that firms have to weigh the costs and benefits each decision brings to themselves and their stakeholders. This interpretation also applies to tax avoidance and stakeholder theory but in an opposite way. If firms decide to engage in tax avoidance as opposed to affairs regarding the public, community or employees, they dedicate more to fulfill their owners’ interest. Correspondingly, there is a rival relation between CSR and tax avoidance because each stakeholder provides different extent of pressure on firms to prioritize their interest. Therefore, stakeholder management is crucial to managers.

In order to successfully manage the relationship with each stakeholder, executives need to identify two things. The first one is the power and legitimacy of each party (Carroll 1991). Phillips (2003) proposes two kinds of stakeholder legitimacy, normative legitimacy and derivative legitimacy. The former describes that only those to which firms have owed them moral obligation can be called as stakeholders. The latter represents the parties of which their claims and actions will (potentially) affect the organizations and the stakeholders defined in normative legitimacy. Secondly, managers have to prioritize each party based on each stakeholder's power and legitimacy. Take corporate tax as an example, on one hand, the strategically decreasing tax payment is a way to increase profits and to benefit shareholders. On the other hand, the strategy will bring negative impact on stakeholders and the society, because partial taxes paid contribute to national infrastructures and social welfares (Sikka 2010). Recent evidence gives different opinions on this dilemma. While some directors consider tax payment as being socially responsible, Davis et al. (2016) finds high CSR rating firms engage in more tax avoidance than weak CSR rating companies. According to the interpretation of the results, executives consider CSR activities (i.e., "policies or actions which identify a company as being concerned with society-related issues" (Roberts 1992, p.595)) and tax payment as substitutes. Therefore, it is reasonable for companies that already devote money and resources to CSR related affairs pay less tax. Bearing in mind the conflicting role of CSR and tax avoidance from previous discussions, the number of relative studies increase in recent years, and the inconsistent results draw attention from taxing authorities and the public.

Higgins et al. (2015) suggests that a firm's business strategy is another factor that influences the level of engagement in tax avoidance. Results indicate that *Prospectors* have a higher propensity for tax avoidance using aggressive methods because of its strategic features. Since one of the objectives of the organizational strategy is to achieve a firm's goal, CSR adoption is also associated with a firm's business strategy. Overall, it is necessary for executives to think of each stakeholder's interest before making a decision or strategy regarding tax

management and CSR adoption in light of conflicts. Hence, stakeholder theory is the underlying concept that supports every aspect of this study.

2.2 Tax Avoidance

Corporate tax payment is a basic way for firms to interact with the society (Hoi et al. 2013). Although there are explicit tax rules for firms to follow, executives still manage to avoid tax or lower tax payment to fulfill the objective of maximizing post-tax profits. Hanlon and Heitzman (2010) define tax avoidance in a broader sense as “the reduction of explicit taxes.” They further explain that “if tax avoidance represents a continuum of tax planning strategies where something like municipal bond investments is at one end, then terms such as noncompliance, evasion, aggressiveness, and sheltering would be closer to the other end of the continuum” (p.137). Another definition is also given in a broad sense which defines tax avoidance as any activities that will reduce taxable income (Dyreng, Hanlon and Maydew 2008). The concept of tax avoidance in this study is based on these two definitions for its frequent adoption in other tax avoidance literatures. It is also noteworthy that the term of tax avoidance does not indicate any inappropriate behaviors of firms.

From a management perspective, corporate taxes motivate and influence various decision-making. More precisely, it is important for managers to consider corporate tax minimization by engaging in tax planning and balancing cost and effectiveness (Lanis and Richardson 2012). However, from a public perspective, (i.e., including society and government). If firms apply tax tactics, taxing authorities will not receive the equivalent amount of corporate taxes which is supposed to finance public goods (i.e., the facilities or services that are non-exclusive and non-rival) (Freedman 2003, Freise, Link, and Mayer 2008). Hence, tax avoidance is publicly perceived as socially irresponsible (Erle 2008). Since corporate tax avoidance concerns the distribution of resources among the government, the society and shareholders, it is crucial to taxing authorities, shareholders, and the public. Consequently, more and more executives and

firms nowadays pay attention to their tax planning activities because potential investors might regard tax avoidance behaviors as cheating (Huseynov and Klamm 2012).

2.3 Business Strategy

A substantial number of articles are dedicated to the discussion of the types and combinations of organizational strategies (Miles and Snow 1978, 2003, Hambrick 1983, Peteraf 1993, Porter 2008). More specifically, the question raised is which business strategy a firm should pick to ensure good performance with minimum risks. In light of the broad scope of organizational strategies, previous researchers divided them based on product line extensions, primary target market and operating procedures. The Miles and Snow (1978, 2003) strategic typology is one of the most influential and highly cited. Four categories which are *Prospector*, *Defender*, *Analyzer* and *Reactor* are used to categorize business-level strategies (McDaniel and Kolari 1987) based on four dimensions: the product market, technology, management, and the firm's reaction to environmental changes.

Prospectors are sensitive to the opportunities in a business environment, and this usually triggers competitions within the industry. *Prospectors* concentrate on developing new products, discovering new market and analyzing market trend to pursue more innovation and forward-looking development as pioneering leaders in the industry. In contrast with *Prospectors*, *Defenders'* primary goal is to sustain their market share. This kind of firms do not subjectively explore a new market, seldom undergo significant organizational changes and pursue cost minimization. *Analyzers* follow market leaders and launch new products rapidly in a promising market. This type of strategy falls in between *Prospectors* and *Defenders*. They not only operate stably and efficiently but also search for chances to enter a new market cautiously when in turmoil. Whereas, *Reactors* only react to the pressure of environmental changes. They usually do not have a fixed market, and they refuse to invest in new product development (Hambrick 1983, Slater and Olson 2001, DeSarbo, Anthony Di Benedetto, Song, and Sinha 2005).

2.3.1 Business Strategy and Tax Avoidance

To the best of my knowledge, Higgins et al. (2015) is the first and only study which investigates the relation between business strategy and tax management using the Miles and Snow's (1978, 2003) strategic typologies (e.g., *Prospectors*, *Defenders* and *Analyzer*) as a measure of business strategy. Higgins et al. (2015) first investigated the association between firms' business strategy and the level of tax avoidance captured by three different measures (i.e., firms' cash effective tax rates, book effective tax rates, and permanent book-tax differences). Although the results of *Defenders* are insignificant, the evidence of *Prospectors* does suggest that the level of tax avoidance is higher than otherwise. Further examination is conducted on whether *Prospectors* avoid tax more aggressively than *Defenders*. Results are in alignment with the hypothesis. For instance, *Prospectors* have more foreign operations in tax havens which indicates that *Prospectors* are more willing to take aggressive tax avoidance measures to obtain benefits from such tax-planning. In conclusion, the study believes that the characteristic differences between *Prospectors* and *Defenders* lead to a different extent in engaging tax planning measures and aggressive tax avoidance.

2.4 Corporate Social Responsibility

Since the proposal of Donald K. David which is similar to the concept of CSR in 1946, the discussion of CSR has intrigued many scholars and people in the industry (Carroll and Shabana 2010). In 1953, Howard R. Bowen wrote a book titled *Social Responsibilities of the Businessman*. Bowen (1953) mentions that the obligation of enterprises is to seek all activities that are in line with social values and meet their needs. Although the history of CSR can be dated back to about 60 years ago, there is still no official definition of CSR. The CSR mentioned in this research is based on Carroll and Shabana (2010) which defines CSR as an integration of four dimensions: "businesses' fulfillment of economic, legal, ethical and philanthropic

responsibilities” (p.89).

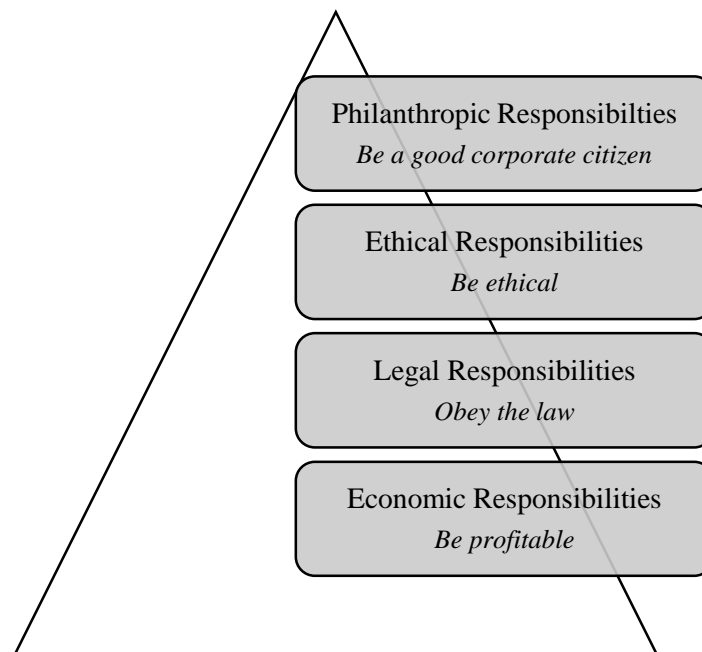


Figure2. The Pyramid of Corporate Social Responsibility (Carroll 1991, p.42)

Figure 2 demonstrates the importance of each component of social responsibility. For business, the foundation is to achieve economic responsibilities by providing goods and services to meet public demand and make profits simultaneously. Although the level of importance of these four responsibilities may differ from firms, they are not mutually exclusive. Moreover, the actions or decisions made by businesses can simultaneously cover all four of the responsibilities. While economic responsibilities are the foundation of this pyramid, it must coexist with legal responsibilities. Particularly, firms must comply with laws and regulations when seeking profits. Ethical responsibilities are the other public expectation toward firms which is not legally binding. Thus, it makes business management harder as ethical responsibilities are ill defined. The last one is philanthropic responsibilities which is initially named as discretionary responsibilities. ‘Discretionary’ refers to the non-compulsory nature of this type of responsibilities which means that firms can make their own decision on it. Most of the actions taken in this category are related to, for instance, donating money or resources to charity or vulnerable group voluntarily. Therefore, it is later referred to as philanthropic responsibilities. The public will not criticize firms for doing nothing but firms will certainly

enjoy favorable reputation by delivering philanthropic responsibilities (Carroll 1979, 1991, Carroll and Shabana 2010).

CSR supporting statements argue that delivering CSR leads to the fulfillment of firms' self-interests in the long run (Carroll and Shabana 2010). Nowadays, people can timely receive information via different channels easily. Yet, such convenience comes with more social problems and even global problems. The public start anticipating firms to involve in solving social problems because governments fail to do so, and the business sector is believed to have the necessary resources and capabilities. Referring back to stakeholder theory, managers should take the public expectation into consideration since the public does have impact on business development.

While many arguments support CSR adoption, several statements are in opposition to CSR (Friedman 1962, Hayek 1969, Davis 1973). Friedman (1962) states that social problems fall under the government's responsibilities which do not concern the business sector. Managers' primary goal is to be responsible for the firm's owners by increasing profit. Davis (1973) also proposes two objections claiming that business should not involve with CSR. Firstly, since the board selects a firm's executives (e.g., CEO and CFO) based on how well they can operate a firm, the executives do not necessarily have the skills to solve social problems. Secondly, as firms are already socially influential enough, it is inappropriate to rely on firms to solve social problems which will only increase their power. The last opposition is that if to adopt CSR, managers would not be able to fully commit to their primary goal of profit maximization (Hayek 1969).

Although Friedman's original statement is to hold against CSR, Carroll (1991) published his unique interpretation in favor of CSR using the four components of CSR proposed by Carroll (1979). As Friedman (1970) initiated, the first and only goal for the business is to maximize profits legally and ethically. However, Carroll (1991) argues that most of the people only look at the first part of Friedman's statement, which is the increase of profits. If combining

the last part except philanthropic responsibilities, Friedman's statement attains economic responsibilities, legal responsibilities, and ethical responsibilities.

As a consequence, the discussion and implementation of CSR concept in the business sector arise in the last decades. It is gradually observed that consumers are willing to pay more to support the notion of CSR. For instance, green architecture, fair trade, etc. Hence, firms start adjusting their business model and publicly demonstrating that they value CSR and sustainable development. The new business model incorporating CSR not only enhances business reputation and brand image but also increases profits. Many researches acknowledge the positive relation between CSR and financial performance. McGuire, Schneeweis, and Sundgren (1988) use survey to examine the relation between CSR and firm performance. The result acknowledges the correlation but does not draw any conclusion on causal effect (i.e., whether CSR implementation leads to high financial performance or vice versa). Waddock and Graves (1997) investigate the relation by using a more completed data. They suggest that better Corporate Social Performance (CSP) has a positive effect on financial performance. Moreover, firms that have better prior financial performance are willing to invest more resources into CSR implementation. Thus, they explain this might be an interactive relation. Another article also sustains the view that CSR implementation brings additional benefits to the firms. Sen and Bhattacharya (2001) state that CSR adoption has a positive effect on consumer behaviors. Individuals who support CSR or believe in CSR are willing to support firms that engage in CSR activities.

Since CSR implementation is actually beneficial to firms, CSR adoption becomes trendy in practice. However, there are no guidelines or regulations for firms to follow. Also, there is no measure to examine whether firms have implemented CSR or not. There are two reasons why firms start taking on social responsibilities. One is for ethical reasons. For instance, Jones (1995) uses the stakeholder model (Freeman 1984) as a foundation and combine the ethics and economics framework to illustrate firms that operate with trust and corporation. Carroll's (1979)

four components of CSR is also representative. The other reason is opportunism. Firms might practice CSR to conceal actions that are actually taken to fulfill top management's interest (Hemingway and MacLagan, 2004). Thus, some CSR opponents say that CSR is only used as 'window dressing', referring to firms that use CSR as an attractive display to draw public attention without any practical CSR implementation.

2.4.1 CSR and Tax Avoidance

Recently, researchers shift focus to the investigation of the relation between CSR and tax avoidance in response to Hanlon and Heitzman's (2010). From the aspect of tax payment, firms which abide by the rules, pay the relative amount of tax and contribute back to the community are demonstrations of being socially responsible (Lanis and Richardson 2015). As people nowadays are more aware of enterprise behaviors, firms which inappropriately or illegally engage in tax avoidance will be labeled as untrustworthy or opportunistic. For example, upon media exposure, the public starts concerning and criticizing the tax payment status of some large-scale international enterprises. Duhigg and Kocieniewski (2012) write an article regarding how an American technology firm uses tax avoidance tactic to save up \$2.4 billion federal income. They report that the company only paid 9.6 percent of its reported profit of \$34.2 billion as income tax in 2011. Whereas, another retailing company paid \$5.9 billion worldwide cash taxes, which is approximately equivalent to 24.2 percent of its booked profits. Accordingly, the intention of tax avoidance contradicts the spirit of CSR.

Lanis and Richardson (2012) referring to publicly listed Australian corporations find that there is a negative and significant relation between CSR and tax aggressiveness. Although the effective tax rates they use do not precisely capture tax aggressiveness, and sample selection bias might occur (Hoi et al. 2013), this research enlightens later studies. The results in Hoi et al. (2013) suggest that highly socially irresponsible firms are more possibly related to tax avoidance behaviors. The correlation is examined by using the degree of firms involved in

irresponsible CSR activities as the measure and comparing the firms with four or over four irresponsible CSR activities and other firms in the samples. Lanis and Richardson (2015) change their research method and sampling and apply matched sample by using tax disputes as indicator to classify tax avoidance firms and non-tax avoidance firms. They find a negative correlation between socially responsible firms and tax avoidance.

However, some researchers still think socially responsible firms might have a higher propensity to engage in tax avoidance. Huseynov and Klamm (2012) find that the three dimensions of CSR, corporate governance, community, and diversity are related to tax avoidance. They conclude that the reason that socially responsible firms would attempt to reduce their tax payment might not only because of considering shareholders' benefit, but also because of the society. Since lowering cost means increasing profit, firms might be more willing to participate in more philanthropic activities. Thus, the public might find it more acceptable if these firms seek tax reduction. Davis et al. (2016) use the amount of tax payment and the amount of investment in tax lobbying as measures of corporate tax payment to empirically examine whether corporate tax payment plays a complementing or substitute role to CSR activities. Findings indicate a negative correlation between CSR and cash effective tax rate. The interpretation of the results is that firms view corporate tax payment and CSR activities as substitutes for each other, and these firms also believe that the public will accept their tax underpayments because they have already contributed to CSR activities.

Thereby, the results of research on taxation and CSR are inconsistent and mixed. Several explanations of the mixed results include different sample period, inconsistent measures, different samples from different countries and so on. Bearing in mind the importance of the issue, I investigate the relation between CSR and tax avoidance using a large number of samples of firms in the United States from 2002 to 2013 from another perspective. CSR rating is applied as a moderator to examine whether the degree of tax avoidance in *Prospectors/Defenders* changes. Hence, my research findings can contribute to the existing literature reviews and

broaden our acknowledgment regarding tax and CSR.

2.5 Hypothesis Development

A recent study by Higgins et al. (2015) shows that *Prospectors* have a significant and negative correlation with cash and book effective tax rates. However, the result of *Defenders* is insignificant. It is therefore concluded that such result derives from the endemic differences between two business strategies. It is noteworthy that if *Prospectors* are more likely to engage in tax avoidance behaviors, it would require the public and taxing authorities to devote extra effort to monitor *Prospectors*' tax payment status. Meanwhile, literature review on tax and CSR provides evidence on CSR mitigating tax avoidance behaviors (Lanis and Richardson 2012, 2015). Specifically, firms with higher CSR scores engage less in tax planning activities. Nevertheless, these studies do not consider the factor of business strategy. The samples might consist of firms with different business strategies. To investigate whether CSR has the same positive effect among firms with different strategies, I thus use CSR ratings as the moderator. If there is a positive correlation between CSR adoption and effective tax rates, CSR will also positively influence the effective tax rates in *Prospectors*. Since there is no previous research that indicates significant correlation between *Defenders* and tax avoidance, I assume that CSR implementation will have a positive effect on effective tax rates, but such influence might be insignificant. These predictions lead to the hypothesis of this research which is stated as alternative form:

H₁: Ceteris paribus, CSR performance positively moderates the relation between business strategy and tax avoidance.

I examine this hypothesis using CSR ratings. A firm's corporate social performance could moderate the relation between business strategy and tax avoidance because it partially

represents how socially responsible a firm is. Tax avoidance, however, is considered as a socially irresponsible behavior. Therefore, CSR adoption should mitigate tax avoidance behaviors if the firm is highly socially responsible. The next section elaborates on how the hypothesis is tested in detail.

3. Research Design

3.1 Measuring Tax Avoidance

There are various measures to capture the dependent variable (i.e., tax avoidance). Each measure, however, has its limitations (Hanlon and Heitzman 2010). The most frequently used and widely accepted measure in prior researches is effective tax rate (ETR) (Dyreng et al. 2008, 2010, Hoi et al. 2013, Higgins et al. 2015, Watson 2015). Therefore, I use three different effective tax rates as measures to capture tax avoidance. In order to connect this study with prior tax avoidance and CSR researches, the first two tax avoidance measures are GAAP effective tax rate ($GAAP ETR_{i,t}$) and cash effective tax rate ($CETR_{i,t}$). The calculations of both measures are based on annual data, while $GAAP ETR$ applies total tax expense (TXT) and $CETR$ uses cash taxes paid ($TXPD$) as the numerator. In addition, $CETR$ uses adjusted pre-tax income as its denominator. The measures are computed as following equations:

$$GAAPETR_{i,t} = \frac{TXT_{i,t}}{PI_{i,t}} \quad (1)$$

$$CETR_{i,t} = \frac{TXPD_{i,t}}{PI_{i,t} - SPI_{i,t}} \quad (2)$$

Following Davis et al. (2016), I last employ the five-year cash effective tax rates. The long-term cash effective tax rates method is a new measure proposed by Dyreng et al. (2008). They use ten-year cash effective tax rate to examine the informativeness of this measure on long-run corporate tax avoidance. With evidence, they suggest that it is possible for firms to maintain low effective tax rate for a longer period. Specifically, firms are capable of avoiding tax payments in the long term. Furthermore, the longer term measure differentiates tax planning activities from isolated decisions (Husynov and Klamm 2012). Instead of the ten-year cash effective tax rate, I use the five-year cash effective tax rate that is computed by the sum of five-

year income taxes paid (*TXPD*) divided by the five-year sum of pretax income (*PI*) minus special items (*SPI*):

$$L_CETR_{i,t} = \frac{TXPD_{i,t-4} + \dots + TXPD_{i,t}}{[(PI_{i,t-4} - SPI_{i,t-4}) + \dots + (PI_{i,t-4} - SPI_{i,t-4})]} \quad (3)$$

The value of each effective tax rate is required from 0 to 1 in order to derive meaningful results. I thus eliminate the observations that involve negative effective tax rate and the observations with an effective tax rate that is larger than 1.

Referring to previous researches in the field (e.g., Hoi et al. 2013, Higgins et al. 2015, Lanis and Richardson 2015, Davis et al. 2016), I also include six tax avoidance control variables: firm size (*SIZE*), return on assets (*ROA*), the existence of foreign business operations (*FOREIGN*), intangible assets (*INTAN*), inventory intensity (*INVT*), and leverage (*LEV*). The results of Gupta and Newberry (1997) suggest that effective tax rates are associated with firm size, profitability, capital intensity, inventory intensity, and leverage. Adopting their sign predictions and results, I estimate positive predicted signs for *SIZE*, *ROA*, and *INVT*. For *LEV*, *INTAN*, and *FOREIGN*, I adopt the predictions of Davis et al. (2016) and mark these variables with negative prediction signs. Appendix 2 tabulates the calculations and prediction signs for each control variable.

The following regression model estimates the relation between business strategy and tax avoidance, and the effect of CSR brings to this relation:

$$\begin{aligned} CETR_{i,t} = & \beta_0 + \beta_1 PRO_{i,t} + \beta_2 DEF_{i,t} + \beta_3 CSR_{i,t} + \beta_4 PRO_{i,t} * CSR_{i,t} + \beta_5 DEF_{i,t} * CSR_{i,t} \\ & + \beta_6 SIZE_{i,t} + \beta_7 ROA_{i,t} + \beta_8 DEBT_{i,t} + \beta_9 FOREIGN_{i,t} + \beta_{10} INTAN_{i,t} \quad (4) \\ & + \beta_{11} INVT_{i,t} + \beta_{12} LEV_{i,t} + \beta_{13} YEAR + \beta_{14} INDUSTRY + \varepsilon_{i,t} \end{aligned}$$

CETR_{i,t} can be replaced by *GAAPETR_{i,t}* and *L_CETR_{i,t}*. Appendix 1 provides the predictive validity framework (Libby Boxes) that depicts the whole concept of this research. Next two

subsections discuss the measures of independent variable — business strategy and moderating variable — CSR ratings.

3.2 Business Strategy Composite Measure

Before measuring the firms' business strategy, I first use Standard Industrial Classification (SIC) code to eliminate the observations of financial institutions, insurance companies, financial firms (SIC codes 6000-6999) and utility industries (SIC codes 4900-4949) for the reason that the differences in business model and regulatory environments may influence later analysis (Higgins et al. 2015, Hoi et al. 2015, Watson 2015). The method includes six variables adopted from other researches (Miles and Snow 1978, Ittner, Larker and Rajan 1997). I adopt Bentley, Omer and Sharp (2013) and Higgins et al. (2015) approach, using the following components to determine firms' strategy: (a) the ratio of research and development expense to total sales, (b) total number of employees divided by total sales and (c) one-year percentage change in total sales to measure historical growth, (d) the ratio of selling, general and administrative expense to sales, (e) standard deviation of total number of employees to measure employee fluctuations, and (f) the ratio of total net property, plant and equipment to total assets (measure of capital intensity). Appendix 2 provides the measure of each variable in detail. Consistent with Ittner et al. (1997) and Bentley et al. (2013), all variables are computed using five-year rolling averages. Thus, I require the data from 1997 to 2001 even though the study period of this research is from 2002 to 2013.

In line with Bentley et al. (2013) and Higgins et al. (2015), I further categorized the firm-year observations into groups based on the last two-digit SIC code. Within each group, the components are ranked by forming five quintiles. The scores are given based on which quintile the observation fall into (e.g., observations in top quintile receive a score of 5, observations in lowest quintile receive a score of 1, etc.) The dummy variable *PRO* equals to 1 if the observations receive a total score above 24, including 24; otherwise, equals to 0. The dummy

variable *DEF* equals to 1 if the observations obtain a total score between 6 to 12, including 6 and 12; 0 if otherwise.

3.3 CSR Ratings

Prior studies (Chand 2006, Kim, Park and Wier 2012, Berglund and Kang 2013) have examined the firms' CSR performance by using KLD-ratings produced by Kinder, Lydenberg, and Domini Research & Analysis, Inc. (KLD; now known as MSCI). Since KLD-ratings is an frequently used metric in academic research which is supported by Sharfman (1996) and Waddock and Graves (1997), I implement KLD-ratings in measuring CSR. There are seven major CSR-categories in the database: corporate governance, community, diversity, employee relations, environment, human rights, and products. Within each category, KLD reports a total number of strengths and a total number of concerns. The database substantially expands its coverage from 2002 (Davis et al. 2016), and the latest available data is until 2013. I will thus gather CSR data from MSCI (formerly KLD and GMI) database in the years from 2002 to 2013. In addition, following Kim et al. (2012) and Watson (2015), I exclude the Corporate Governance category to prevent making implication between CSR and corporate governance. Then, I subtract the sum of the total number of concerns in the remaining six CSR-categories from the sum of the total number of strengths in the remaining six CSR-categories to generate the total CSR ratings for each firm-year observations. Different from other research, I will not establish the dummy variable because the score of CSR ratings of each observation vary. Moreover, it seems unreasonable to put firms that receive 1 point and firms that receive 10 points into the same group.

3.5 Data

The initial sample period starts from 1997 to 2013 with all available data in Compustat. Since one of the tax avoidance measures and business strategy composite measure require five-

year data, the final sample period includes the years from 2002 to 2013. The data used in determining the firms' business strategy, computing five-year cash effective tax rates and measuring control variables is accessed through the COMPUSTAT Fundamentals Annual database within the Wharton Research Data Services (WRDS) system. The data used in measuring CSR ratings is accessed via the MSCI (formerly KLD and GMI) database within the same system. Appendix 3 indicates the corresponding code in the database for each variable in COMPUSTAT database. Datasets are all based on firm-year observations. Table 1 depicts the sample selection process.

TABLE 1
Sample Selection

Panel A: COMPUSTAT database	
Selection criteria	Firm-year observations
All available data in COPUSTAT from fiscal year 1997 to 2013	168,624
Less:	
Observations of utilities companies (SIC code 4900-4949)	-5,268
Observations of finance companies (SIC code 6000-6999)	-47,176
Firms with missing values for business strategy composite measure, five-year cash effective tax rate, and control variable measure	-106,111
Firms with negative effective tax rate or the rate is larger than 1	-3,794
Total observations in COMPUSTAT database before merge (2002-2013)	6,275
Panel B: MSCI database	
Selection criteria	Firm-year observations
All available data in MSCI from fiscal year 2002 to 2013	35,495
Less:	
Observations without cusip code for merge	-367
Duplicate firm-year observations	-58
Total observations in MSCI database before merge (2002-2013)	35,070
Panel C: Data for regression	
Selection criteria	Firm-year observations
Total observations after merge	37,263
Less:	
Firm-year observations with missing data in one of the database	-33,181
Final sample (2002-2013)	4,082

4. Empirical results and analysis

4.1 Descriptive Statistics

Panel A of Table 2 presents descriptive statistics on the industrial composition of the full sample and the percentage each strategic type holds in different industries. Different from prior business strategy studies (e.g., Bentley et al. 2013, Higgins et al. 2015), my final sample does not consist any firms in agriculture, forestry, and fishing industry (two-digit SIC code 01-09). Based on the proportion each industry holds, it shows that Manufacturing (two-digit SIC code 20-39) industry is most heavily represented, followed by Services (two-digit SIC code 70-89), and Retail Trade (two-digit SIC code 52-59). Although the sample is much smaller because of the mismatch in two different databases, the sample distribution is still similar to that of Bentley et al. (2013) and Higgins et al. (2015).

Panel B of Table 2 outlines the CSR ratings in different industries. Mining (two-digit SIC code 10-14) and Transportation and Communication (two-digit SIC code 40-48) receive lower average CSR ratings compared to other groups. In the untabulated one-way ANOVA test results, the means between CSR ratings in these groups are significantly different from each other. Panel C in Table 2 provides descriptive statistics of the Business Strategy Composite Measure and the six components of this measure. Since the characteristic differences are the main indicators that distinguish *Prospectors* and *Defenders*, I employ t-test and Wilcoxon Rank Sum test to confirm that the differences are significant to derive meaningful results. In this panel and panel D, the numbers of mean and median in bold indicate there are significantly different at $p < 0.05$. Consistent with Bentley et al. (2013), *Prospectors* and *Defenders* have significant differences in mean and median of every measure components – i.e., R&D expense-sales ratio (*RD5*), employees-sales ratio (*EMPS5*), historical growth (*REV5*), SG&A expenses-sales ratio (*SGA5*), employee fluctuations (σ *EMP5*) and capital intensity (*CAP5*).

Table 2
Descriptive statistics

Panel A: Industry categories										
Group	Two-digit		Full sample		Prospectors		Analyzers		Defenders	
	SIC code	Industry	N	%	N	%	N	%	N	%
1	10-14	Mining	52	1.3	0	0.0	49	1.3	3	3.6
2	15-17	Construction	2	0.1	0	0.0	2	0.1	0	0.0
3	20-39	Manufacturing	3,077	75.4	56	69.1	2,966	75.7	55	65.5
4	40-48	Transportation and Communication	12	0.3	0	0.0	12	0.3	0	0.0
5	50-51	Wholesale Trade	146	3.6	6	7.4	133	3.4	7	8.3
6	52-59	Retail Trade	219	5.4	8	9.9	207	5.3	4	4.8
7	70-89	Services	559	13.7	11	13.6	536	13.7	12	14.3
8	99	Other	15	0.4	0	0.0	12	0.3	3	3.6
Total			4,082	100.0	81	100.0	3,917	100.0	84	100.0

Panel B: CSR ratings in each industry						
Group	Industry	Mean	SD	Min	Median	Max
1	Mining	-0.615	2.628	-5.000	-1.000	10.000
2	Construction	0.000	0.000	0.000	0.000	0.000
3	Manufacturing	0.616	2.903	-5.000	0.000	11.000
4	Transportation and Communication	-0.583	1.443	-2.000	-0.500	3.000
5	Wholesale Trade	0.438	2.058	-4.000	0.000	8.000
6	Retail Trade	0.283	2.921	-5.000	0.000	11.000
7	Services	0.930	3.034	-5.000	0.000	11.000
8	Other	0.400	2.667	-3.000	0.000	5.000
Total		0.614	2.895	-5.000	0.000	11.000

Panel C: Business strategy variables									
Variable	Full Sample					Prospectors		Defenders	
	Mean	SD	Q1	Median	Q3	Mean	Median	Mean	Median
<i>Business Strategy</i>	17.891	2.735	16.000	18.000	20.000	24.407	24.000	11.476	12.000
Business Strategy Composite Measure Components									
<i>RD5</i>	0.067	0.089	0.012	0.035	0.107	0.142	0.127	0.016	0.008
<i>EMPS5</i>	0.005	0.003	0.003	0.004	0.006	0.008	0.006	0.002	0.002
<i>REV5</i>	29.967	1159.255	4.001	8.884	15.875	20.132	18.193	4.284	2.476
<i>SGA5</i>	0.293	0.172	0.174	0.259	0.380	0.414	0.397	0.185	0.174
<i>σEMP5</i>	3.486	14.480	0.266	0.085	2.453	8.364	2.044	1.723	0.151
<i>CAP5</i>	0.204	0.136	0.101	0.173	0.275	0.271	0.243	0.146	0.105

Panel D: Regression variables									
Variable	Full Sample					Prospectors		Defenders	
	Mean	SD	Q1	Median	Q3	Mean	Median	Mean	Median
<i>L_CETR</i>	0.239	0.114	0.166	0.239	0.303	0.185	0.190	0.255	0.265
<i>CETR</i>	0.236	0.138	0.141	0.227	0.309	0.189	0.196	0.271	0.259
<i>GAAPETR</i>	0.297	0.114	0.240	0.306	0.354	0.251	0.245	0.336	0.245
<i>PRO</i>	0.198	0.139	0.000	0.000	0.000	1.000	1.000	0.000	0.000
<i>DEF</i>	0.206	0.142	0.000	0.000	0.000	0.000	0.000	1.000	1.000
<i>CSRratings</i>	0.614	2.895	-1.000	0.000	2.000	0.889	0.000	-0.583	-1.000
<i>PRO*CSR</i>	0.176	0.496	0.000	0.000	0.000	0.889	0.000	0.000	0.000
<i>DEF*CSR</i>	-0.012	0.329	0.000	0.000	0.000	0.000	0.000	-0.583	-1.000
<i>SIZE</i>	7.547	1.548	6.461	7.398	8.470	7.889	7.845	7.048	6.730
<i>ROA</i>	0.119	0.082	0.064	0.107	0.161	0.119	0.109	0.112	0.102
<i>FOREIGN</i>	0.423	0.447	0.108	0.359	0.664	0.627	0.617	0.292	0.153
<i>INTAN</i>	0.255	0.214	0.083	0.209	0.374	0.269	0.180	0.291	0.192
<i>INVT</i>	0.134	0.999	0.660	0.119	0.185	0.122	0.098	0.165	0.136
<i>LEV</i>	0.162	0.160	0.040	0.135	0.257	0.154	0.108	0.182	0.148

All independent continuous variables are winsorized at the 1st and 99th percentiles.

N= number of observations

%= percentage of each industry in different sample set

Panel A presents the percentage each industry holds in full sample, and subsamples that only contain *Prospectors* or *Analyzers* or *Defenders*. Panel B indicates the CSR ratings in different industry. Panel C shows the descriptive statistics of business strategy variables and the CSR ratings under different strategic type. Panel D depicts the descriptive statistics of each variables used in the regression.

Panel D of Table 2 reports the descriptive statistics of all regression variables for the full sample and the subsamples (i.e., *Prospectors* and *Defenders*) respectively. All continuous independent variables are winsorized at the 1st and 99th percentile. The findings suggest that *Defenders* have higher five-year cash effective tax rate (*L_CETR*), current cash effective tax rate (*CETR*) and GAAPETR (*GAAPETR*) compared with *Prospectors*. The mean and median of these three variables are significantly different ($p < 0.05$). However, the mean and the median of CSR ratings in *Prospectors* are significantly higher than those in *Defenders*. The statistics also show that *Prospectors* and *Defenders* have significant differences in means and medians values in control variables. Specifically, *Prospectors* are larger (*SIZE*) and have more foreign operations (*FOREIGN*) than *Defenders*. Contrary to the findings in Higgins et al. (2015), other control variables (i.e., *ROA*, *INTAN*, *INVT*, and *LEV*) do not show significantly different mean and median between *Prospector* and *Defenders*.

4.2 Pearson correlation matrix

Table 3 provides the Pearson correlation between variables used in this research. The significantly negative correlation between tax avoidance measures (*L_CETR*, *CETR*, and *GAAPETR*) and *PRO* provide some evidence that *Prospectors* engage in tax planning activities to lower their effective tax rates, which is consistent with Higgins et al. (2015). In addition, different from my prediction, I find *Defenders* engage in less tax avoidance which is shown by the positive correlation between current cash effective tax rate, GAAP effective tax rate, and *Def*. Some studies (Lanis and Richardson 2012, 2015) argue that socially responsible firms are positively related to low tax avoidance behavior. However, contradicting to my prediction, the correlation derived in this study suggests that CSR ratings in the sample are negatively correlated with all three tax avoidance measures.

The table also indicates the correlations among control variables used in the regression. The highest correlation coefficient is between *INTAN* and *LEV* of 0.338 ($p < 0.01$). When the

Table 3
Pearson correlation matrix

Variables	L_CETR	CETR	GAPETR	PRO	DEF	CSRratings	PRO*CSR	DEF*CSR	SIZE	ROA	FOREIGN	INTAN	INVT	LEV
L_CETR	1.000													
CETR	0.543 ***	1.000												
GAPETR	0.226 ***	0.229 ***	1.000											
PRO	-0.064 ***	-0.048 ***	-0.057 ***	1.000										
DEF	0.019	0.037 **	0.051 ***	-0.021	1.000									
CSRratings	-0.072 ***	-0.043 ***	-0.100 ***	0.014	-0.060 ***	1.000								
PRO*CSR	-0.011	0.004	-0.017	0.250 ***	-0.005	0.164 ***	1.000							
DEF*CSR	0.009	-0.007	-0.010	0.005	-0.252 ***	0.121 ***	0.001	1.000						
SIZE	-0.067 ***	-0.044 ***	-0.105 ***	0.032 **	-0.047 ***	0.425 ***	0.080 ***	0.044 ***	1.000					
ROA	-0.010	-0.010	0.025	-0.001	-0.013	0.134 ***	0.008	0.022	0.006	1.000				
FOREIGN	-0.001	-0.023	-0.210 ***	0.065 ***	-0.043 ***	0.049 ***	0.014	-0.021	0.129 ***	-0.106 ***	1.000			
INTAN	-0.068 ***	-0.058 ***	-0.002	0.010	0.025	0.041 ***	0.000	-0.007	0.167 ***	-0.096 ***	0.029 *	1.000		
INVT	0.191 ***	0.143 ***	0.099 ***	-0.018	0.044 ***	-0.205 ***	-0.013	-0.030 *	-0.163 ***	0.066 ***	-0.053 ***	-0.223 ***	1.000	
LEV	0.015	-0.043 ***	0.031 **	-0.008	0.018	0.045 ***	-0.015	0.013	0.296 ***	-0.158 ***	0.087 ***	0.338 ***	-0.035 **	1.000

*, **, *** indicate significance of the coefficients at 10%, 5% and 1% confidence level, respectively.

Variable definitions are presented in Appendix 2

correlation coefficient of control variables are located between ± 0.25 and ± 0.75 , the collinearity is considered as in moderate level (Hair et al. 2006). Therefore, the correlations among these explanatory variables only indicate moderate levels of collinearity. However, to verify the doubt regarding multicollinearity, I calculate VIFs when estimating the regression model. According to STATA manual (StataCorp, 1997), there are two informal rules to identify the existence of multicollinearity: (1) The largest value of the variance inflation factor (VIF) is greater than 10. Some conservative researchers choose the value of 30; (2) The average number of all VIFs is considerably larger than 1. The unreported results confirm that the VIFs of all control variables do not exceed 10. This suggests that multicollinearity is not a serious concern to the regression model.

4.3 Regression results

4.3.1 Business strategy and tax avoidance

Table 4, panel A provides full sample results without control variables while panel B outlines the results that include control variables. Column 1-3 in both panels indicate three different measures of tax avoidance separately. Moreover, the unreported *p*-values are based on standard errors that are clustered in firm level. In all three estimations in panel A, the coefficients on *PRO* are significant and negative. In line with the previous discussion in section 2, *Prospectors* have higher propensity to involve in tax avoidance behavior. In particular, effective tax rates are lower in *Prospectors* no matter which dependent variable used in the regression to capture the tax avoidance. Surprisingly, the results show that *Defenders* are significantly positively related to *CETR* and *GAAPETR*. These findings are different from that of Higgins et al. (2015) which suggest no significant association between *Defenders* and tax avoidance. Basically, the evidence remains the same after considering the control variables in the regression (Table 4, panel B).

TABLE 4

Tax avoidance, business strategy, and CSR regression results

Panel A: Regression results without control variables

Variables	<i>L_CETR</i>		<i>CETR</i>		<i>GAAPETR</i>	
	(1)		(2)		(3)	
	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.
Intercept	0.2150	10.75 ***	0.2040	9.73 ***	0.3200	14.96 ***
<i>PRO</i>	-0.0640	-2.36 **	-0.0595	-2.93 ***	-0.0537	-2.57 **
<i>DEF</i>	0.0171	1.17	0.0342	1.76 *	0.0358	3.67 ***
<i>CSRratings</i>	-0.0028	-2.85 ***	-0.0018	-1.96 **	-0.0037	-4.34 ***
<i>PRO*CSR</i>	0.0049	1.40	0.0082	2.13 **	0.0054	1.51
<i>DEF*CSR</i>	0.0074	1.53	0.0017	0.24	0.0043	1.74 *
Industry fixed effect	Yes		Yes		Yes	
Year fixed effect	Yes		Yes		Yes	
Observations	4,082		4,082		4,082	
R^2	0.052		0.048		0.052	

Panel B: Regression results with control variables

Variables	<i>L_CETR</i>		<i>CETR</i>		<i>GAAPETR</i>	
	(1)		(2)		(3)	
	Coeff.	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.
Intercept	0.2300	7.15 ***	0.2270	7.42 ***	0.3590	13.63 ***
<i>PRO</i>	-0.0608	-2.42 **	-0.0569	-2.99 ***	-0.0401	-1.97 **
<i>DEF</i>	0.0138	0.90	0.0330	1.70 *	0.0246	2.72 ***
<i>CSRratings</i>	-0.0009	-0.74	-0.0002	-0.21	-0.0018	-1.84 *
<i>PRO*CSR</i>	0.0043	1.17	0.0072	1.82 *	0.0047	1.38
<i>DEF*CSR</i>	0.0077	1.56	0.0022	0.30	0.0018	0.74
<i>SIZE</i>	-0.0038	-1.37	-0.0023	-0.88	-0.0053	-2.47 **
<i>ROA</i>	-0.0253	-0.70	-0.0577	-1.44	0.0242	0.76
<i>FOREIGN</i>	0.0077	0.99	0.0036	0.42	-0.0043	-5.27 ***
<i>INTAN</i>	-0.0141	-0.86	-0.0025	-0.16	0.0111	0.76
<i>INVT</i>	0.1470	3.52 ***	0.1070	2.64 ***	0.0863	3.16 ***
<i>LEV</i>	0.0319	1.43	-0.0278	-1.36	0.0569	3.18 ***
Industry fixed effect	Yes		Yes		Yes	
Year fixed effect	Yes		Yes		Yes	
Observations	4,082		4,082		4,082	
R^2	0.067		0.055		0.092	

*, **, *** indicate significance of the coefficients at 10%, 5% and 1% confidence level, respectively.

Panel A shows the results of the OLS regressions without control variables. The dependent variables are five-year cash effective tax rates (*L_CETR*) in model 1, current cash effective tax rates (*CETR*) in model 2, and GAAP effective tax rates (*GAAPETR*) in model 3. The independent variables used for these models are *PRO* ('1' if receiving score above 24, including 24, '0' otherwise), *DEF* ('1' if receiving score between 6 to 12, including 6 and 12, '0' otherwise), *CSRratings* (sum of total number of strengths minus sum of total number of concerns), *PRO*CSR* (interaction effect of *PRO* and *CSRratings*), *DEF*CSR* (interaction effect of *DEF* and *CSRratings*). Panel B shows the result of the same OLS regressions that includes control variables. The control variables used for the models are *SIZE* (log of total assets), *ROA* (Pre-tax income t / Total assets t-1), *FOREIGN* (Pre-tax foreign income scaled total pre-tax income t), *INTAN* (Total intangibles t scaled by total assets t-1), *INVT* (Total inventory t scaled by total assets t-1), and *LEV* (Total long term debt t / Total assets t-1).

4.3.2 Business strategy, tax avoidance, and CSR ratings

The results of the hypothesis test are reported in Table 4. In panel A, when the regression is estimated without adding control variables, the coefficients on *CSRratings* in all three columns are negatively significant which contradicts the predicted sign in Appendix 2. However, only the coefficient on *CSRratings* in column 3 stays negative (-0.0018) and significant (p -value = 0.065) after including control variables. This negative relation can be interpreted by the substitute role of CSR adoption to corporate tax payment (Davis et al. 2016) which means that firms will justify tax avoidance behaviors with their invested resources in CSR activities with the notion that firms' resources are limited.

Although the directions of coefficients on the interaction term *PRO*CSR* and *DEF*CSR* are as I expected, the significance levels vary in three different estimations. When using five-year cash effective tax rate as the dependent variable (column 1), coefficients on *PRO*CSR* and *DEF*CSR* are insignificant. However, I find positive (0.0082 and 0.0072) and significant (p -value = 0.034 and p -value = 0.068) coefficients on *PRO*CSR* in column 2 of both panels and another positive (0.0043) and significant (p -value = 0.083) coefficient on *DEF*CSR* in column 3 of panel A. Accordingly, these findings support Hypothesis 1 that CSR adoption positively moderates the relation between business strategy and tax avoidance. In addition, the moderating effect is more significant on *Prospectors* than *Defenders*.

Table 4, panel B provides several statistically significant results demonstrating the coefficients for the explanatory variables. Contrary to expectations, firm size is negatively related to GAAP effective tax rate. According to the conclusion in Dyreng et al. (2008), it is suggested that smaller firms have to pay more taxes for each tax dollar they earned. Moreover, Huseynov and Klamm (2012) give another explanation that larger firms may have more resources and channels to conduct tax management. Although the relation between *ROA* and both long-term and current cash effective tax rate measures are opposite from the predicted sign,

the results are insignificant. *FOREIGN* indicates whether a firm has foreign operations. It has a significantly negative relation with *GAAPETR* (p -value = 0.000) which reveals that higher foreign pre-tax income is associated with lower GAAP effective tax rates.

I also find that firms with higher inventory intensity (*INVT*) are significantly positively related to all three tax avoidance measures. These findings support Gupta and Newberry (1997)'s interpretation on the relation between capital intensity, inventory intensity and effective tax rates which states that tax benefits are linked to the capital investment, so firms with high capital intensity (*INTAN*) should have lower effective tax rates. Given the substitute degree of *INVT* and *INTAN*, high *INVT* firms, therefore, should relate to higher effective tax rates. The results also show *LEV* has a positive effect on *GAAPETR*. This is consistent with the interpretation that high *LEV* firms would have lower effective tax rate because of tax-deductible interest expenses payment (Gupta and Newberry 1997, Lanis and Richardson 2015).

5. Conclusions

Conceivably, research objects, measures or study period may be the cause of inconsistent research findings on the relation between tax avoidance and CSR. Nonetheless, prior research (i.e., Higgins et al. 2015) documents that business strategy is related to tax avoidance and tax aggressiveness. Particularly, Miles and Snow's (1978, 2003) strategy typology suggests that *Prospectors* relate to lower book and cash effective tax rates and higher permanent book-tax differences. Therefore, I expect CSR have different effects on these firms with different business strategies. To verify my conjecture, I adopt the business strategy composite measure used in Bentley et al. (2013) and Higgins et al. (2015) to differentiate *Prospectors* and *Defenders*. Using data from 2002 to 2013, I examine the moderating effect of CSR on the relation between firms' business strategy and three tax avoidance measures: long-term cash effective tax rates, current cash effective tax rate and GAAP effective tax rate.

Consistent with the substitute relation between corporate tax payment and CSR activities investment, the results indicate that firms with higher CSR ratings have lower effective tax rates. Within the sample, I find that *Prospectors* involve in more tax avoidance behavior as demonstrated by lower five-year cash effective tax rate, current cash effective tax rate and GAAP effective tax rate. On the contrary, *Defenders* have a positive association with effective tax rates. However, in terms of the relation between business strategy and CSR, I find that both *Prospectors* and *Defenders*, especially *Prospectors*, with higher CSR ratings appear to engage in less tax avoidance behavior. This indicates that socially responsible *Prospectors* may be willing to increase their tax payment to exhibit the spirit of CSR since tax avoidance is perceived by the public as socially irresponsible.

This study contributes to the literature reviews that address the relation between tax avoidance and CSR by using a different perspective to investigate the way CSR influence tax

avoidance. Specifically, the effect of CSR has on tax avoidance changes in different conditions (i.e., *Prospectors* and *Defenders*). Moreover, this research provides additional evidence to support prior researches that suggest the association between business strategy and tax avoidance. The findings may serve as a reference to taxing authorities for monitoring certain companies.

This study is subject to some limitations as the following. First, the numbers of observations in subsamples – *Prospectors* and *Defenders* are much lower than those in prior studies because the final sample used in the examination is derived from two different databases and a number of observations are dropped due to mismatch. The second limitation is generalizability. Since CSR development and tax regulations are distinct in the various countries, the findings of this research may not apply to non-America firms. Thirdly, although I utilize three tax avoidance measures, the limitations of each measure may potentially interfere with the findings. Future research could be enhanced by using different CSR databases to reduce the number of observation elimination and to avoid insufficient number of subsamples. Furthermore, it will also be helpful to implement firms in other countries or other tax avoidance measures to examine whether CSR performs the same effect in different research settings.

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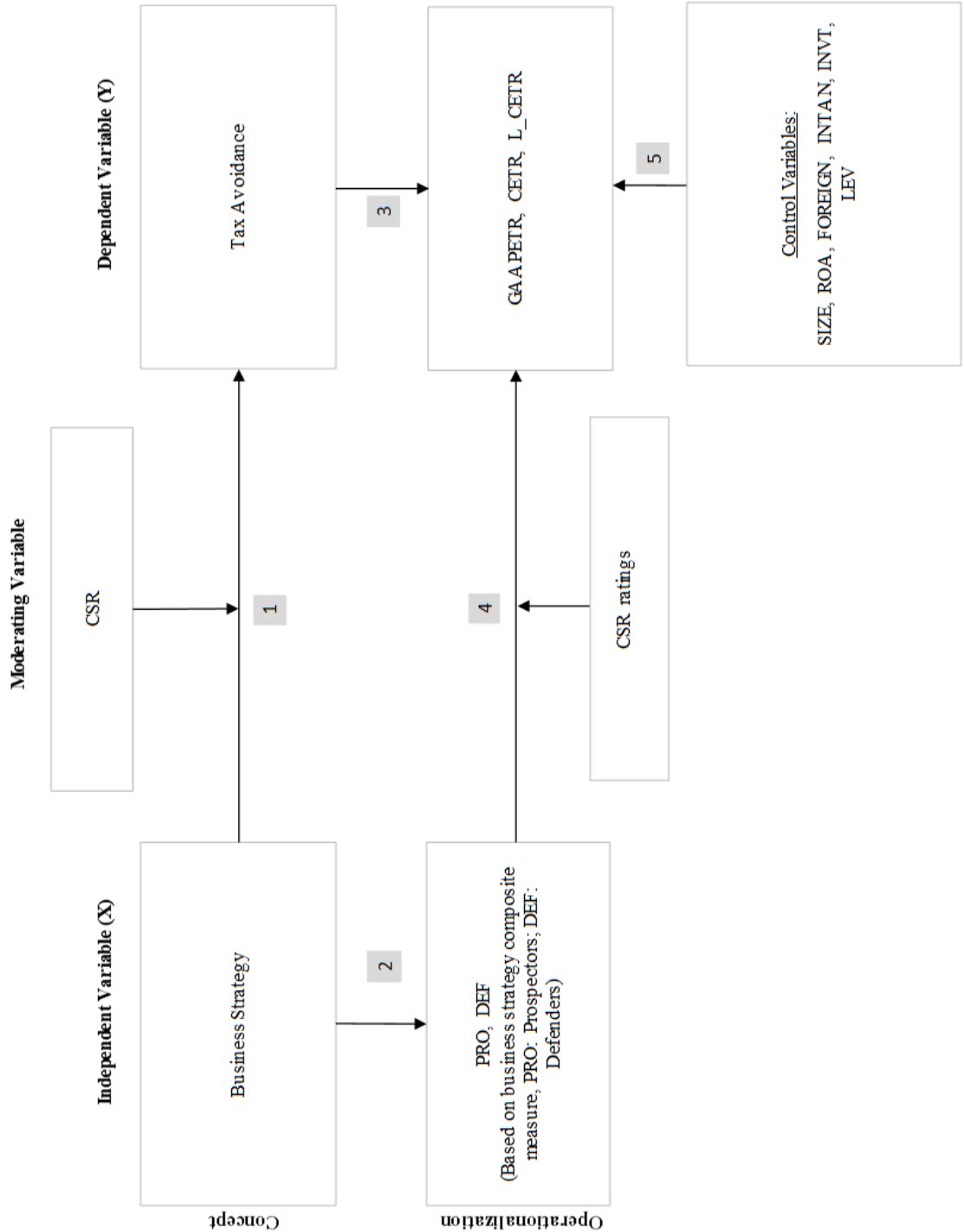
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Appendix

Appendix 1 Predictive validity framework



Appendix 2 Variable definitions

Variable	Predicted Sign	Description
Dependent Variables		
<i>GAAPETR</i>		$GAAPETR_{i,t} = TXT_{i,t}/PI_{i,t}$
<i>CETR</i>		$CETR_{i,t} = TXPD_{i,t}/(PI_{i,t} - SPI_{i,t})$
<i>L_CETR</i>		$L_CETR_{i,t} = (TXPD_{i,t-4} + \dots + TXPD_{i,t})/[(PI_{i,t-4} - SPI_{i,t-4}) + \dots + (PI_{i,t-4} - SPI_{i,t-4})]$
Business Strategy Composite Measure Components		
<i>*Six variables below are all computed based on five-year rolling average</i>		
<i>RD5</i>		R&D expense/Total sales
<i>EMPS5</i>		Total number of employees/Total sales
<i>REV5</i>		One-year percentage change in total sales
<i>SGA5</i>		SG&A/Total sales
<i>σEMP5</i>		Standard deviation of the total number of employees
<i>CAP5</i>		Net PPE / Total assets
Independent Variables		
<i>PRO</i>	-	Equal to one if observations are Prospector, which receive a score above 24, including 24, in business strategy measure, otherwise zero.
<i>DEF</i>	-	Equal to one if observations are Defender, which receive a score between 6 to 12, including 6 and 12, in business strategy measure, otherwise zero.
Moderator		
<i>CSR</i>	+	Sum of total number of strengths in each category minus sum of total number of concerns in each category
Control Variables		
<i>SIZE</i>	+	Natural logarithm of total assets <i>t</i>
<i>ROA</i>	+	Pre-tax income <i>t</i> / Total assets <i>t-1</i>
<i>LEV</i>	+	Total long term debt <i>t</i> / Total assets <i>t-1</i>
<i>FOREIGN</i>	-	Pre-tax foreign income scaled total pre-tax income <i>t</i>
<i>INTAN</i>	-	Total intangibles <i>t</i> scaled by total assets <i>t-1</i>
<i>INVT</i>	+	Total inventory <i>t</i> scaled by total assets <i>t-1</i>

Appendix 3 Corresponding code in COMPUSTAT

Code in database	Corresponding variable
Business Strategy Composite Measure Components	
XRD	Research and Development Expense
SALE	Total Sales
EMP	Total Number of Employees
XSGA	Selling, General, and Administrative Expense
PPENT	Property, Plant and Equipment – Total (Net)
AT	Total Assets
Measure of tax avoidance and control variables	
AT	Total Assets
TXT	Total Income Taxes
PI	Pretax Income
SPI	Special Items
TXPD	Income Taxes Paid
DLTT	Total Long Term Debt
PIFO	Pretax Income Foreign
INTAN	Intangible Assets – Total
INVT	Inventories – Total