# In Pursuit of Profit: The Likely Culprit of Tax Avoidance via Tax Havens

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## Abstract

We develop a profile of corporations that are likely to employ tax avoidance strategies using tax havens. To build upon prior research which identifies tax avoidance by proxy or publicly identified tax sheltering disputes, our research broadens the scope of sample by including all publicly traded firms with tax haven investments disclosed in annual reports. We find firms with high cash effective tax rates and low operating uncertainty are most likely to benefit from, hence engage in, tax haven activities. Firms with stronger market power and less vulnerable to external legitimacy consideration are more likely to take advantage of tax haven investments. Lastly, tax haven activities are less likely for firms having broad investment opportunity sets whereas market pressure makes tax havens more attractive. These results support the view that from shareholders' perspective, tax strategies, such as tax haven activities, can be a value enhancing yet risky business endeavor.

**Keywords:** Tax havens, organizational legitimacy, investment opportunity set, operating uncertainty, market power, market pressure

**JEL Classification:** H26; L21; M14; M41

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**Abstract**

We develop a profile of corporations that are likely to employ tax avoidance strategies using tax havens. To build upon prior research which identifies tax avoidance by proxy or publicly identified tax sheltering disputes, our research broadens the scope of sample by including all publicly traded firms with tax haven investments disclosed in annual reports. We find firms with high cash effective tax rates and low operating uncertainty are most likely to benefit from, hence engage in, tax haven activities. Firms with stronger market power and less vulnerable to external legitimacy consideration are more likely to take advantage of tax haven investments. Lastly, tax haven activities are less likely for firms having broad investment opportunity sets whereas market pressure makes tax havens more attractive. These results support the view that from shareholders' perspective, tax strategies, such as tax haven activities, can be a value enhancing yet risky business endeavor.

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## INTRODUCTION

The rising magnitude and pervasiveness of tax avoidance through the utilization of tax havens have become a sensitive issue that captures news headlines and becomes the target of federal tax law changes. Despite the government scrutiny and public outcry, the appeal of using of tax havens seems to be significantly increasing (Gravelle 2015). Of the Fortune 500 companies, at least 362 have established subsidiaries in tax haven jurisdictions (Citizens for Tax Justice 2014). The estimated loss in U.S. tax revenue from corporate tax haven profit shifting varies from about $54 billion to $130 billion (Zucman 2014). Due to the magnitude and pervasiveness of tax haven activities, identifying the determinants and conditions underlying the propensity for firms to adopt tax havens is relevant in understanding and curbing this tax avoidance strategy. Accordingly, we develop a profile of corporations that are more likely to employ tax havens as tax avoidance strategies.

Existing research commonly measures tax avoidance by the cash effective tax rate (e.g., Dyreng, Hanlon, and Maydew 2008; Chen, Chen, Cheng, and Shevlin 2010; Kim, Li, and Zhang 2011; Hoi, Wu, and Zhang 2013; Hope, Ma, and Thomas 2013). Yet the accuracy of using cash effective rates has been called into question (Frank, Lynch, and Rego 2009; Wilson 2009; Hanlon and Heitzman 2010; Lisowsky 2010; Lanis and Richardson 2015). Lisowsky (2010) finds no significant association between tax sheltering and long-run cash effective rates. An alternative to the effective tax rate proxy is identifying corporations with publicly identified tax sheltering disputes (Graham and Tucker 2006; Hanlon and Slemrod 2009; Gallemore, Maydew, and Thornock 2014; Lanis and Richardson 2015). Although these are actual occurrence of aggressive tax avoidance, these samples are incomplete and small; they only include corporations with public record of investing in tax shelters. Our research overcomes these

deficiencies by including all U.S. publicly traded firms disclosing tax haven activities in the annual reports and not just the limited sample of firms that chose tax shelter activities and were publicly identified.  We include cash effective tax rate in our analysis, not as measure of tax avoidance, but as a measure of ability to profit from tax heavens.

The classification of what jurisdictions are tax havens is not precise. The Organization for Economic Development and Cooperation (OECD) created its initial list of tax havens in 2000 and included only 33 countries that have the following: low or non-existent tax rates on certain categories of income, lack transparency, bank secrecy, little information sharing, and require little to no economic activity to obtain entity legal status (Gravelle 2015). A more comprehensive list of 58 countries was created in the widely cited study of tax havens by Hines and Rice (1994). The Stop Tax Haven Abuse Act of 2009 (The Senate of the United States 2009) provides a more limited list of 34 foreign jurisdictions identified by the Internal Revenue Service (IRS) in a federal court proceeding[2] as being secrecy jurisdictions. To be comprehensive, we incorporate all of these jurisdictions in our examination of tax havens.

Tax avoidance activities encompass a wide scope of tax strategies, from the most benign to the most aggressive, such as tax havens and tax shelters (Hanlon and Heitzman 2010; Dyreng, Hanlon, and Maydew 2016). Although the main goal of tax shelters and tax havens may be the same – to lower the corporate tax liability – tax havens are not tax shelters. Tax shelters are tax motivated transactions that are unrelated to normal business operations and based on a literal reading of relevant legal authority produces a tax deduction in excess of any economic loss that is inconsistent with legislative intent or purpose (Bankman 2004). When there is no "economic substance" or "business purpose" for the transaction, the tax shelter is evading rather than

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[2] In the Matter of Tax Liabilities of John Does, et al., No. 5:05-cv-04167-JW (N.D. CA. 2006).

avoiding taxes (Lisowsky 2010). In contrast, tax havens are creations by foreign jurisdictions and investing resources in tax havens is the specific intent of the jurisdiction creating the beneficial tax structure. While tax benefits derived from tax havens may fall within the deep gray areas of corporation's home country tax laws, they are legal tax avoidance strategies. Accordingly, the characteristics of corporations exploiting tax havens may or may not mirror those of firms willing to engage in tax shelters. Employing factors identified by tax shelter research (Desai 2003; Hanlon and Slemrod 2009; Brown 2011; Gallemore et al. 2014; McGuire, Omer, and Wilde 2014), we investigate conditions associated with and determinates of tax haven activity. Specifically, we examine how cash effective tax rates, operating uncertainty, market power, organizational legitimacy, investment opportunity, and market pressure are related to the likelihood that corporations will invest in tax havens.

High tax liabilities and low operating uncertainty are necessary conditions for long-term tax avoidance strategies to be effective (Francis and Reiter 1987; Shevlin 1990; Dhaliwal, Frankel, and Trezevant 1994; Kubick, Lynch, Mayberry, and Omer 2015). Profitability provides not only the tax liability to shield but also the resources to invest in long-term tax avoidance strategies, which can be costly (Gupta and Newberry 1997; Rego 2003; Wilson 2009; Lisowsky 2010). Operating uncertainty affects the ability to predict the future benefits from tax avoidance activities (McGuire et al. 2014). Our results support a positive association of tax haven activity with long-term profitability, as measured by the five-year cash effective tax rate, and a negative association with operating uncertainty, as measured by the five-year adjusted cash flow volatility. These results are consistent with prior research; corporations with high tax liabilities and consistent cash flows are most likely to benefit from, hence engage in, tax haven activities.

Conditions facilitating a firm's persistent higher and smoother profitability are market power and reputation. Kubick et al. (2015) demonstrate that market power provides firms with the ability to engage in and benefit from tax avoidance. These firms have greater ability to forecast earnings, which is essential in the realization of tax avoidance benefits (Mayberry, McGuire, and Omer 2013). Utilizing tax havens enable firms to reduce current period cash tax expense by deferring portions of income tax liabilities to future periods; however, there are risk associated with aggressive tax strategies (Hanlon and Slemrod 2009; Graham, Hanlon, Shevlin, and Shroff 2014; Austin and Wilson 2015).  As Graham et al. (2014) report, 72 percent of tax executives at publically traded firms rate concerns for reputation as an important factor when evaluating tax planning strategies. Yet Gallemore et al. (2014) observed no long lasting reputational effects from tax shelter news events.  The conflict in findings may be due to two different constructs being observed, reputation versus organizational legitimacy (hereafter legitimacy).

Although legitimacy and reputation have similar antecedents, social processes, and consequences, they are two separate constructs (Deephouse and Carter 2005). Legitimacy encompasses conforming to social norms (Parsons 1960; Hirsch and Andrews 1984) whereas reputation is a relative comparison among corporations on a variety of dimensions (Deephouse and Carter 2005).  The loss of legitimacy can be more harmful for a firm than the loss of reputation because a loss of reputation does not threaten the firm's continued existence whereas loss of legitimacy may affect its market power (Deephouse and Carter 2005). Since legitimacy and reputation are separate organizational concepts, the relationship of each with tax avoidance may be different. We focus on legitimacy due to its greater important to a firm's viability and the absence, to our knowledge, of prior tax research explicitly examining this factor. The proxy we

use for legitimacy is a firm's corporate social responsibility MSCI KLD[3] Social Index ranking score.

As Scholes and Wolfson (1992) eloquently articulated, tax planning should be assessed from a "contractual perspective" with multilateral consideration and incorporate all costs. A firm's market power and legitimacy can potentially affect transactional costs. We find that legitimacy functions similar to market power in its positive association with tax haven activities. We interpret these results as supporting the notion that market power and legitimacy insulate firms from unfavorable public perceptions and as Davis, Guenther, Krull, and Williams (2016) propose, corporations engaged in aggressive tax avoidance invest in CSR to offset negative perceptions. They show a negative relationship between corporate social responsibility and five-year cash effective tax rates indicating socially responsible firms do not pay more taxes than other firms.

McGuire et al. (2014) suggest that investment opportunity sets and market pressure are related to tax sheltering activities. When corporate tax departments are considered profit centers (Robinson, Sikes, and Weaver 2010; Armstrong, Blouin, and Larker 2012), tax planning strategies are included in the investment opportunity sets that are competing for the firm's limited resources. For firms with broad investment opportunity sets, tax sheltering activities may lose out to investments with higher after-tax returns (McGuire et al. 2014). In addition, firms face external market pressures to meet and beat market expectations (Graham, Harvey, and Rajgopal 2005). Due to this pressure, managers may act opportunistically and engage in aggressive financial reporting behavior (Jensen 2005), which can potentially lead to incorporating tax planning strategies in achieving desired financial reporting results (Desai

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[3]Morgan Stanley Capital International (MSCI) Kinder, Lydenberg and Domini (KLD).

2005). We observe that tax haven activities are negatively associated with the depth of firm investment opportunity sets and positively associated with market pressure.

Current research on tax avoidance research falls into two categories, specific tax avoidance strategies and tax avoidance outcomes. Our study not only extends the research stream examining the conditions and determinants of specific corporate tax avoidance strategies, it is more inclusive in terms of tax avoidance determinate considerations. In particular, we combine factors examined by McGuire et al. (2014) (operating uncertainty, investment opportunity sets, and capital market pressures), Kubick et al. (2015) (persistent profitability and market power), and Davis et al. (2016) (corporate social responsibility/operational legitimacy) into one study to develop a comprehensive portrait of firms involved in tax haven activities. The image sketched for firms employing tax havens is that of corporations with persistent predictable profitability, subject to market pressure, and that are insulated from public pressure by possessing market power and organizational legitimacy. Firms with broad investment opportunity sets are less likely to engage in tax haven activities as they have more competing prospects to allocate their scares resources. These findings are important in understanding the determinants of tax avoidance strategies.

Unlike tax shelter research, which is subject to sample limitation and selection bias, our tax haven analysis includes almost 12,000 firm-year observations. As such, our study strengthens the validity concerns with respect to small data sample and sheds more light on the determinants of firm adopting tax avoidance strategies by developing a more inclusive sample.

The results of our research should be of interest to policymakers. The federal tax law is currently struggling with containing the growing flight of corporate income to foreign jurisdictions. The portrait developed by our research of corporations likely to invest in tax havens may help with creating tax laws that cast a narrower net to target only those firms likely

to adopt tax haven as tax avoidance strategies. In particular, our results suggest that profitable firms under market pressure with market power and legitimacy are likely to invest in tax havens.

The remainder of this paper is organized as follows. The next section provides a literature review and hypotheses development. The third section explains models, variable construction and data sources and the fourth section discusses results and interprets findings. The final section concludes.

## HYPOTHESES DEVELOPMENT

Decades have passed since Friedman's famous article (Friedman 1970), "The Social Responsibility of Business is to Increase its Profits," appeared on the New Nork Times. Friedman (1970) believed corporate executives, acting as agents, should conduct the business according to the principals' (i.e. shareholders') interests, "which generally will be to make as much money as possible while conforming to the basic rules of the society, both those embodied in law and those embodied in ethical custom." Legitimately minimizing tax expenses through effective tax planning strategies is consistent with the shareholder value maximization objective. The United States (U.S.) corporate income tax system allows U.S. corporations defer income tax liability on foreign income until foreign subsidiary profits are repatriated back to U.S. parent companies. If these foreign subsidiary profits are earned in low tax jurisdictions, i.e. tax havens, then U.S. multinational corporations can take advantage of the deferral system by paying very little income tax abroad and deferring U.S. income tax liability as long as possible by keeping foreign subsidiary profits abroad.

**Conditions for Viable Tax Haven Strategies**

Logically, for corporations to benefit from costly long term tax planning strategies they must have a significant tax liability to shelter and benefits derived are greater for corporations with high tax cash rates than for those with low rates. Profitability provides not only the tax to shield but also the resources for investing in costly long-term tax avoidance strategies (Gupta and Newberry 1997; Rego 2003; Wilson 2009; Lisowsky 2010). Accordingly, a nontrivial tax liability and predictable profitability/cash flows are prerequisites for these long-term opportunities to be cost effective (Francis and Reiter 1987; Shevlin 1990; Dhaliwal et al. 1994; Kubick et al. 2015). Profitable corporations with substantial tax liabilities are more likely to implement tax avoidance strategies to reduce their effective tax rates.

In contrast, less operating certainty results in low assurances of future cash flows and creates uncertainty regarding the cost effectiveness of any long term tax strategies. For example, McGuire et al. (2014) demonstrate that tax shelter activities are negatively associated with operating uncertainty, and note that operating uncertainty constrains resources available for investing in costly tax strategies. Thus, corporations are not likely to invest in costly tax avoidance strategies when the unpredictability future taxable income causes estimating future marginal tax rates to be dubious and creating uncertainty regarding the ability to benefit from future tax savings (Shevlin 1990; Graham 1996; Kubick et al. 2015). Management's smoothing of taxable income raises the precision in predicting future tax planning benefits and Graham and Smith (1999) establish that about 50 percent of corporations have significant tax incentives to smooth taxable income. Income smoothness facilitates the implementation of tax avoidance strategies. Mayberry, McGuire, and Omer (2015) document that corporations with discretionary

smoother taxable income have higher levels of future tax avoidance supporting the notion that

smoothing is part of managers' tax avoidance strategies.

Profitable corporations with substantial tax liabilities are more likely to implement tax

avoidance strategies, a reduction in effective tax rates, especially cash effective tax rates, which

are considered proxies for current period tax liability. Ceteris paribus, the need/benefit of tax

haven activities for a corporation with high cash effective tax rate is greater than for corporations

with low cash effective tax rate. Therefore, we conjecture that high cash effective tax rate is a

necessary condition for corporations to engage in tax haven activities because the need for tax

savings is high. The second necessary condition for employing tax havens is operating

sustainability. Operating uncertainty decreases the predictability of future benefits from tax

haven activities. Thus, both necessary conditions should be considered be investigated when

identifying the types of corporations that have the most to gain from engaging in tax haven

strategies. The first hypothesis is as follows:

> H1:     Tax haven activities are positively associated with cash effective tax rate and
>         negatively associated with operating uncertainty.

**Market Power, Reputation/Organizational Legitimacy**

*Market Power*

According to Shepherd (1970, 3), market power "is the ability of a market participant …

to influence price, quality and the nature of the product in the marketplace." The competitive

advantage that market power provides leads to high, persistent, and less risky profits

(Montgomery 1985; Hou and Robinson 2006; Irvine and Pontiff 2009; Peress 2010). This profit

stability permits consideration of more diverse opportunities with greater associated risk

(Montgomery 1985; MacKay and Phillips 2005; Hoberg, Phillips, and Prabhala 2014) such as

tax avoidance strategies employing tax havens (Cloyd, Mills, and Weaver 2003; Lisowsky 2010; Alexander and Poe 2011). Kubick et al. (2015) suggest that research investigating corporation-level tax strategies should include market power as a determinant of tax avoidance behavior.

Kubick et al. (2015) provide evidence that market power, through greater persistent profitability and its natural hedge against adverse shocks or competitive threats, procures a competitive advantage. The sustained future profitability and greater productive operations offer potentially greater incentives to engage in tax shelters. Market power also supports aggressive tax avoidance behavior because failures of risky tax strategies, such as employing tax havens, are less likely to have negative repercussions affecting competitive positions or performance metrics. Kubick et al. (2015) results, based on over 25,000 corporation-year observations for 1993 to 2010, also indicate that investors consider corporations with high market power and comparatively high cash tax avoidance as more risky, and therefore, find the stock of these corporations less desirable. Accordingly, high tax avoidance may impair the natural hedge created by market power.

The relevant risks of tax avoidance opportunities can be high (Hanlon and Slemrod 2009; Chen et al. 2010; Kim et al. 2011; Rego and Wilson 2012; Chyz, Zhen, Meng, and Leung 2013; Dyreng, Hoopes, and Wilde 2016) and result in current planning costs. IRS disallowance of strategies along with the imposition of penalties and interest can cause future-period tax benefits to dissolve, loss of corporation/executive reputation and future employment prospects, political/media pressure if publicly criticized, and possible consumer backlashes (e.g., Hanlon and Slemrod 2009; Wilson 2009). However, the corporations with market power may be insulated from the negative consequences of tax avoidance failures and can participate in more aggressive tax haven avoidance strategies (Kubick et al. 2015).

### *Reputation/Organizational Legitimacy*

Tax shelters and tax havens are strategies that can facilitate shareholder value maximization by enhancing firm values and future performance (Desai and Dharmapala 2006; Blaylock 2016). The results of Goh, Lee, Lim, and Shevlin (2016) support the notion that tax avoidance reduces the cost of equity as successful tax avoidance strategies can help retain more cash. According to Graham and Tucker (2006), tax shelters produce deductions equivalent to about 9 percent of a corporation's total assets. The revelation that such benefits do not encourage more use of tax shelters than actually exists is called the "undersheltering puzzle" (Desai and Dharmapala 2006; Hanlon and Heitzman 2010; Gallemore et al. 2014; McGuire et al. 2014). Shackelford and Shevlin (2001) and Weisbach (2002) were among the first to question why more corporations do not fully take advantage of tax planning opportunities associated tax shelters and alluded to the possible explanation that the potential risks/cost associated with sheltering activities may outweigh the benefits.

The Scholes and Wolfson (1992) framework suggests that evaluating effective tax planning involves not only the benefits in tax savings, but also effects on trade, implicit taxes, and non-tax costs, such as risk. Tax avoidance strategies can manifest in agency risk of potential managerial rent diversion due to increases of financial opacity caused by tax avoidance (Desai and Dharmapala 2006; Desai, Dyck, and Zingales 2007), and reputation risk when firms are perceived as not paying their "fair share" of taxes. The concern regarding the reputational risk associated with aggressive tax strategies is not just a conjecture or speculation. The survey conducted by Graham et al. (2014) reveals that 72% of tax executives at publicly traded firms cite reputational risk as constraining aggressive tax strategies. As a result, the cost of aggressive

tax strategies can be reflected in equity market return and cost of debt (Hanlon and Slemrod 2009; Hasan, Hoi, Wu, and Zhang 2014).

A favorable reputation leads to a competitive advantage because the corporation gains greater support from stakeholders (Barney 1991; Deephouse 2000; Rindova, Williamson, Petkova, and Sever 2005; Newburry 2010). This advantage can improve financial performance, attract higher quality employees, and encourage greater support from communities (Deephouse 2000; Fombrun, Gardberg, and Barnett 2000; Turban and Cable 2003). A corporate reputation is based on comparisons by its stakeholders of a firm's behaviors with that of other corporations' and includes the stakeholders' instrumental and normative expectations of corporate behavior (Fombrun 1996; Deephouse and Carter 2005; Redding 2005; Jackson and Deeg 2008; Barnett and Pollock 2012). The concept of reputation includes a corporation's image, standing, prestige, and goodwill as these terms identify a relative position of a corporation amongst its peers (Shenkar and Yuchtman-Yaar 1997). Relative financial performance is also a crucial and fundamental determinant of corporate reputation (Sobol and Farrelly 1988; Fombrun and Shanley 1990). Consequently, a necessary element of reputation is the comparison of organizations on a variety of characteristics to determine their relative standing (Ruef and Scott 1998).

Like other assets, reputation can be invested in and developed in order to command higher prices in the product market. Roberts and Dowling (2002) demonstrate that these higher prices can help sustain superior financial performance. The rewards of higher prices lead firms to develop performance assurance efforts that, circularly, build even stronger reputations (Klein and Leffler 1981). Unlike other assets, however, a positive reputation is strategic in the sense that competitors cannot easily imitate it (Simões and Dibb 2008). In the financial arena, positive

reputations lead to lower costs of equity capital (Cao, Myers, Myers, and Omer 2015) and debt (Anginer, Mansi, Warburton, and Yildizhan 2016).

There is sparse empirical evidence of the effects of tax avoidance on corporate reputations (Gallemore et al. 2014). Hanlon and Slemrod (2009) investigate the impact of tax shelters on corporate stock prices using a 3-day event window study. Their results indicate that corporations suffer stock price declines when their tax shelter participation is publically announced. Since the IRS disallowance of the tax shelter and imposition of penalties reduces current and future cash flows, news about IRS actions are likely to be viewed negatively. There is a steeper decline for the retail sector and this is most likely due a consumer backlash. A less negative or slightly positive result is found for corporations that have higher cash effective tax rates. Hanlon and Slemrod (2009) consider this to mean that the stock market views these corporations as merely trying to reduce taxes and not being aggressive. Thus, their results demonstrate, at least in the retail sector, that corporations using aggressive tax avoidance may harm their short-term stock prices. Using FTSE 100 firms in U.K., Dyreng, Hoopes, and Wilde (2016) document that public scrutiny can substantially increase the costs associated with aggressive avoidance strategies.

Gallemore et al. (2014) also examine the stock prices of corporations with tax shelter news events. As a starting point, they replicate Hanlon and Slemrod (2009), and also show that in the short run the tax shelter publicity generates significant negative abnormal returns for the corporations involved. However, when extending the event window to 30 days, the stock prices reverse to their previous per-event level; the stock reaction is only temporary. They also search for reputational effects for managers (CEOs and CFOs), auditor turnover, customer backlash,

and public media. In none of the situations did Gallemore et al. (2014) observe significant reputational costs imposed on corporations employing of tax shelters.

Graham et al. (2014) identify a significant limitation regarding the research of Hanlon and Slemrod (2009) and Gallemore et al. (2014). This research contains only corporations whose tax shelter involvement was publicized. It does not include corporations that either did not delve into tax shelters or were never admonished publically. Consequently, this research is not applicable to corporations whose concerns for reputation may inhibit participation in aggressive tax strategies such as tax shelters. Graham et al. (2014) address this limitation by taking the direct approach of extensively surveying 600 tax executives to ascertain the relationship between reputational concerns and corporate tax planning decisions. Reputational concerns were rated by 72 percent of the publically traded firm executives as an important factor influencing the corporation's likelihood to engage in aggressive tax avoidance strategies. Publicly traded, larger and more profitable corporations as well as the retail industry were significantly more apprehensive regarding adverse reputation effects of tax planning. Further, financial accounting performance is important in tax planning; 84 percent of publicly traded corporations acknowledged that top management is at least as much concerned about the GAAP earnings per share as they are about cash taxes.

What is sometimes included in the concept of reputation in tax avoidance research is actually both reputation and organizational legitimacy (Deephouse and Carter 2005). Legitimacy is defined as a generalized perception that a corporation's actions are appropriate, desirable, or proper within a social system (Suchman 1995). Social acceptance occurs by adhering to regulative and normative expectations and values. Thus, a fundamental aspect of legitimacy is conforming to social norms (Parsons 1960; Hirsch and Andrews 1984). In contrast, reputation is

a relative social comparison among corporations on a variety of attributes, which can include

comparing on regulative and normative dimensions (Deephouse and Carter 2005). Deephouse

and Carter (2005) conclude that the loss of legitimacy is much direr for a firm than the loss of

reputation. Being less regarded due to a lower reputation does not threaten the firm's continued

existence whereas loss of legitimacy may affect its market power (Deephouse and Carter 2005).

Because legitimacy and reputation are separate organizational concepts, the relationship of each

with tax avoidance need not be identical.

Corporate social responsibility (CSR) meets the definition of legitimacy as CSR is

concerned with corporate behavior within the social system. The legitimacy effect of CSR

mitigates negative actions by the firms that could color public perceptions (Fombrun, Gardberg,

and Barnett 2000; Godfrey, Merrill, and Hansen 2009). For example, corporations may increase

their CSR activities when engaging tax minimization. The fortifying CSR legitimacy offsets

negative perceptions of aggressive tax behavior; increased CSR is a substitute for reducing tax

payments (Davis et al. 2016). CSR activities become primarily a risk-management strategy.

While CSR is core value within the corporation culture regarding what is the appropriate

and desirable behavior after considering economic, social environmental ramification, tax

aggressiveness is rarely considered as a significant CSR activity (Hoi et al. 2013). Only

excessively aggressive tax avoidance may be labeled irresponsible or unethical behavior because

it exploits the implicit contract between business and society. From this line of reasoning, overly

aggressive tax avoidance practices are inconsistent with CSR. The research of Hoi et al. (2013)

supports this supposition. They establish that corporations with excessively irresponsible social

behavior are more likely to engage in tax aggressive activates, have lower effective tax rates and

have greater discretionary and permanent book-to-tax differences. Further, they see little

evidence of a relationship between responsible CSR and tax avoidance. While Lanis and Richardson (2012, 2015) report that more socially responsible corporations are less likely to employ aggressive tax shelters, Watson (2015) confirms the same association between firms lacking CSR and tax avoidance but documents that this effect is reduced when current or future earnings performance is high. However, recent results of Davis et al. (2016) provide evidence that CSR and the five-year cash effective tax rates are correlated, implying a positive relationship between CSR and tax avoidance. They also find CSR is positively related to tax lobbying expenditures. These results are consistent with firms using CSR as a legitimacy vehicle to offset negative perceptions associated with low cash effective tax rates. Watson (2015) reports similar evidence for CSR and tax avoidance but only when current or future earnings are low; the association disappears if earnings are high.

Deephouse and Carter (2005) suggest investing in legitimacy is a relevant business strategy that benefits corporations. These investments serve as an insurance policy or natural hedging against unfavorably public image damage (Baucus and Near 1991; Flammer 2013). They allow the corporation to dodge social norm and expectations applied to other corporations (Ashforth and Gibbs 1990; Berkowitz and Macaulay 1961; Phillips and Zuckerman 2001). The benefits of legitimacy in this context are similar to having market power.

In summary, reputation/legitimacy and market power influence a corporation's tendency to engage in risky tax avoidances strategies such as tax havens. However, extant research presents an unclear relationship between reputation/legitimacy and aggressive tax strategies; corporations are concerned about the repercussions of aggressive tax strategies but the stock market has only a short-term reaction. Market power insulates corporations from negative repercussions of tax avoidance but not for corporations with overly aggressive strategies

resulting in comparatively high cash tax avoidance. Hence, the second sets of hypotheses are non-directional:

H2a: Tax haven activities are not associated with a corporation's market power.
H2b: Tax haven activities are not associated with a corporation's reputation.


**Investment Opportunity Set and Market Pressure**

A corporation has been described as a combination of assets in place and future investment opportunities (Myers 1977). These future opportunities are unobservable option sets that include firm-specific investments and their associated distributions yields (Smith and Watts 1992; Jaggi and Gul 1999). These sets also include the ability to consider investment opportunities (McGuire et al. 2014). A distinguishing feature of investment opportunity sets is that their viability is dependent on further corporate discretionary expenditures (Kole 1991; Gaver and Gaver 1993). Accordingly, tax planning strategies may be within the scope of a corporation's investment opportunity set especially when the tax department is considered as a profit center and tax directors are responsible for and incentivized to procure possible tax savings strategies (Robinson et al. 2010; Armstrong et al. 2012).

McGuire et al. (2014) assert that a corporation's available investment opportunity set influences its propensity to engage in aggressive tax strategies. Extensive investment opportunity sets may facilitate a corporation's investments in tax shelters because they are likely to have numerous and unique transactions, which would make it difficult for the IRS to monitor for tax shelter transactions. However, extensive investment opportunities may also provide options that generate more productive after-tax returns than tax shelter and avoid the potential tax risk. The evidence of McGuire et al. (2014) support latter proposition; extensive investment opportunities result in a lower probability of engaging in tax shelter activities.

The failure by corporations with extensive investment opportunity sets to exploit tax planning strategies may be attributable to nonmonetary concerns. Graham's et al. (2014) results reveal an aversion to engaging in certain tax planning strategies because of reputational concerns. The public corporations most guarding their reputations are those that are large, more profitable corporations, with high analyst attention (i.e. firms under capital market pressure), and those in the retail sector. Thus, it is the tax executives' perceptions regarding reputations costs rather than the actual results that may be determining decisions regarding aggressive tax planning.

The survey of Graham et al. (2005) establish that corporations emphasize meeting market expectations. Management incentives for meeting these expectations may result in aggressive financial reporting behavior (Jensen 2005). Consequently, corporations under capital market pressure are significantly more focused on the effects that tax planning strategies have on financial reporting. Desai (2005) provides specific evidence of corporations exploiting tax planning strategies to achieve financial reporting benefits. The results of the Graham et al. (2014) survey of tax executives also support this notion with over 70 percent of public firms indicating that tax planning should not harm earning per share and 57 percent believing that tax planning should have a positive effect on earnings per share. Based on these findings, they conclude that capital market pressure is a critical factor when examining the influence financial reporting has in tax planning strategies. The research of McGuire et al. (2014) is consistent with Graham et al. (2014); corporations with higher capital market pressure are more likely to employ tax shelters to meet their market expectations.

Taken together, our third hypotheses are as follows:

H3a:    Tax haven activities are negatively associated with a corporation's investment opportunity set.

H3b:    Tax haven activities are positively associated with a corporation's market pressure.


## RESEARCH DESIGN

**Proxy for Haven Activities**

We use three measures of tax haven activities, namely $Haven_{ALL}$, $Haven_{OCED}$, and $Haven_{ABUSE}$ respectively. $Haven_{ALL}$ is the total distinct tax haven countries/territories identified by Irish (1982) and Hines and Rice (1994) which are listed in Form 10-K Exhibit 21 with total number of 58 countries/territories. This is the most inclusive tax haven measure and as a result, it is likely to include some countries/territories where corporations engage themselves in conducting business for strategic considerations other than tax avoidance. In other words, this measure may over-identify corporations' tax haven activities. $Haven_{OCED}$ is the total distinct tax haven countries/territories identified in OECD (2000) which are listed in Form 10-K Exhibit 21 with total number of 33 countries/territories. $Haven_{ABUSE}$ is the total distinct tax haven countries/territories identified in the failed Stop Tax Have Abuse Act of 2007 which are listed in Form 10-K Exhibit 21 with a total number of 32 countries/territories. The numbers of both $Haven_{OCED}$ and $Haven_{ABUSE}$ countries/territories are much smaller than that of $Haven_{ALL}$, corporations identified under $Haven_{OCED}$ and $Haven_{ABUSE}$ categories are more likely engage in tax avoidance. Appendix provides the list of countries under the three different categories.


**The Effective of Tax Rates and Operating Uncertainty (H1)**

To test the first hypothesis (H1), whether tax haven activities are positively associated with effective tax rate and negatively associated with operating uncertainty, we use the following model:

$$Haven_{i,t} = \beta_0 + \beta_1 CETR_{i,t} + \beta_2 Adj.CFO\ Volatility_{i,t} + \beta_3 Size_{i,t} + \beta_4 ROA_{i,t} + \beta_5 Leverage_{i,t}$$
$$+ \beta_6 NOL_{i,t} + \beta_7 \Delta NOL_{i,t} + \beta_8 FI_{i,t} + \beta_9 PPE_{i,t} + \beta_{10} Intangibles_{i,t}$$
$$+ \beta_{11} EqInc_{i,t} + \beta_{12} R\&D_{i,t} + \beta_{13} B/M_{i,t} + \beta_{14} iOWN_{i,t} + \beta_{15} abs(DA)_{i,t}$$
$$+ \beta_{16} Big5_{i,t} + Industry\ Effect + Fixed\ Year\ Effect + \varepsilon_{i,t}. \qquad (1)$$

We predict a positive association between effective tax rate and tax haven activities and a negative association between operating uncertainty and tax haven activities, implying $\beta_1 > 0$ and $\beta_2 < 0$. Tests of the coefficients from Equation (1) are based on standard errors that are clustered at the firm level to adjust for time series dependence due to repeated firm observations within our sample (Petersen 2009). As such, management's smoothing of taxable income facilitates implementation of tax avoidance strategies (Graham and Smith 1999). Graham and Smith (1999) establish that about 50 percent of corporations have significant tax incentives to smooth taxable income. Mayberry et al. (2015) document that corporations with discretionary smoother taxable income have higher levels of future tax avoidance supporting the notion that smoothing is part of managers' tax avoidance strategies.

To operationalize explanatory variables, namely effective tax rate and operating uncertainty, following Kubick et al. (2015), we use cash effective tax rate as proxy for effective tax rate.[4] Cash effective tax rate, *CETR*, is the sum of income tax paid (TXPD)[5] divided by the sum of pretax income (PI) over the years *t*-4 to *t* (Dyreng et al. 2008). For operating uncertainty, we follow McGuire et al. (2014) and use abnormal operating cash flow volatility which is industry median adjusted operating cash flow volatility (*Adj. CFO Volatility*) as the proxy. *CFO*

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[4] We also used effective tax rate and current effective tax rate calculated the same as… for robustness check, the results hold.
[5] Compustat variable names are in brackets.

is cash flow from operating activity (OANCF) scaled by total assets (AT). *CFO Volatility* is the standard deviation of *CFO* measured period by *t-4* to *t*. *Adj. CFO Volatility* is the yearly industry median adjusted (by two-digit SIC) standard deviation of *CFO*.

The control variables included in our analysis are similar to those in Hoi et al. (2013) and Kubick et al. (2015). We include measures of corporation performance characteristics and tax avoidance determinants. More specifically, *Size* is the natural log of equity market value determined by multiplying the fiscal year end price of common stock (PRCC_F) by common share outstanding (SCHO). *ROA* is income before extraordinary items (IB) scaled by beginning balance total assets (AT). *Leverage* is total long-term debt (DLTT) scaled by beginning balance total assets (AT). *NOL* is net operating loss carryforward (TLCF) scaled by beginning balance total assets (AT). Change of net operating loss carryforward, $\Delta NOL$, is the change of net operating loss carryforward (TLCF) scaled by beginning balance total assets (AT). *FI* is foreign income (PIFO) scaled by beginning-of-year total assets. We use *PPE, Intangibles*, *EqInc*, and *R&D* to capture total net property, plant and equipment (PPENT), intangible assets (INTAN), equity income (ESUB), and research and development expense (XRD), respectively, all of which are scaled by the beginning-of-year total assets (AT). *B/M* is the equity book value (CEQ) scaled by the equity market value defined above. We use institutional ownership, *iOWN,* as a raw corporate governance measure. *iOWN* is the percentage of institutional holding of common shares outstanding. Same as Hoi et al. (2013), we use the absolute value of discretionary accruals, *abs(DA)*, as the measure of earnings quality. The discretionary accruals are the error terms of the performance-adjusted accrual model (Kothari, Leone, and Wasley 2005). *Big$_5$* is an indicator variable set to 1 if the audit corporation is one of the Big 4/Big 5 and 0 otherwise.

To address whether tax liability and operating uncertainty affect firms' propensity to engage in

tax haven activities, we use an ordered logit model where the total number of total haven

countries/regions that a firm is associated with in a given year is $Haven_{i,t} \in \{1, 2, \ldots, J\}$ and

$$\Pr(Haven_{i,t} \leq j \,|X) = F\,(\kappa_j - \beta X) \qquad j=1, 2, \ldots, J \tag{1a}$$

where
$$\begin{aligned}
\beta X = {} & \beta_1 CETR_{i,t} + \beta_2\, Adj.CFO\ Volatility_{i,t} + \beta_3 Size_{i,t} + \beta_4 ROA_{i,t} + \beta_5 Leverage_{i,t} \\
& + \beta_6 NOL_{i,t} + \beta_7 \Delta NOL_{i,t} + \beta_8 FI_{i,t} + \beta_9 PPE_{i,t} + \beta_{10} Intangibles_{i,t} + \beta_{11} EqInc_{i,t} \\
& + \beta_{12} R\&D_{i,t} + \beta_{13} B/M_{i,t} + \beta_{14} iOWN_{i,t} + \beta_{15}\, abs(DA)_{i,t} + \beta_{16}\, Big5_{i,t} \\
& + Industry\ Effect + Fixed\ Year\ Effect + \varepsilon_{i,t}\,.
\end{aligned}$$

Similar to equation (1), we predict a positive association between effective tax rate and tax haven

activities and a negative association between operating uncertainty and tax haven activities,

implying $\beta_1 > 0$ and $\beta_2 < 0$.


**The Effective of Market Power and Organizational Legitimacy (H2a & H2b)**

To test the second set of hypotheses, H2a & H2b, as to whether tax haven activities are

associated with corporations' market power and organizational legitimacy, we employ the

following model:

$$\begin{aligned}
Haven_{i,t} = {} & \beta_0 + \beta_1 CETR_{i,t} + \beta_2\, Adj.CFO\ Volatility_{i,t} + \beta_3 Mkt\ Power_{i,t} + \beta_4 Legitimacy_{i,t} \\
& + \beta_5 Size_{i,t} + \beta_6 ROA_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 NOL_{i,t} + \beta_9 \Delta NOL_{i,t} + \beta_{10} FI_{i,t} \\
& + \beta_{11} PPE_{i,t} + \beta_{12} Intangibles_{i,t} + \beta_{13} EqInc_{i,t} + \beta_{14} R\&D_{i,t} + \beta_{15} B/M_{i,t} \\
& + \beta_{16} iOWN_{i,t} + \beta_{17}\, abs(DA)_{i,t} + \beta_{18}\, Big5_{i,t} + Industry\ Effect \\
& + Fixed\ Year\ Effect + \varepsilon_{i,t}\,.
\end{aligned} \tag{2}$$

Similar to testing of Equation (1), tests of the coefficients from Equation (2) are based on

standard errors that are clustered at the firm level. Following Kubick et al. (2015) and Peress

(2010), the proxy for market power is a measure of a corporation's excess price-cost margin (*Mkt*

*Power*) within its industry. *Mkt Power* is calculated as a corporation's yearly industry median

adjusted (by two-digit SIC) price-cost margin which is the ratio of sales (SALE) less cost of

goods sold (COGS) less selling, general, and administrative expense (XSGA) divided by sales

(SALE). *Legitimacy* is a dummy variable which is set to one if a corporation's *CSR* scores is ranked as the top quartile within its industry for a given year (by two-digit SIC) and 0 otherwise.[6] *CSR* is a corporate social responsibility score that reflects total strengths minus total weaknesses across KLD's six social rating categories. The measurement construct is similar to that developed by Chatterji, Levine, and Toffel (2009), Kim, Park, and Wier (2012), and Hoi et al. (2013). The six social rating categories are corporate governance, community, diversity, employee relations, environment, and product respectively. Again, standard errors are clustered by corporation to address the problem of time-series correlated residuals.

To address whether market power and reputation affect firms' propensity to engage in tax haven activities, we use an ordered logit model where the total number of total haven countries/regions that a firm is associated with in a given year is $Haven_{i,t} \in \{1, 2, …, J\}$ and

$$\Pr(Haven_{i,t} \leq j \,|X) = F\,(\kappa_j - \beta X) \qquad j=1, 2, …, J \qquad (2a)$$

where
$$\begin{aligned}
\beta X =\ &\beta_1 CETR_{i,t} + \beta_2\,Adj.CFO\,Volatility_{i,t} + \beta_3 Mkt\,Power_{i,t} + \beta_4\,Legitimacy_{\,i,t} \\
&+ \beta_5 Size_{i,t} + \beta_6 ROA_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 NOL_{i,t} + \beta_9 \Delta NOL_{i,t}\,\beta_{10} FI_{i,t} \\
&+ \beta_{11} PPE_{i,t} + \beta_{12} Intangibles_{i,t} + \beta_{13} EqInc_{i,t} + \beta_{14} R\&D_{i,t} + \beta_{15} B/M_{i,t} \\
&+ \beta_{16}\,iOWN_{i,t} + \beta_{17}\,abs(DA)_{i,t} + \beta_{18}\,Big5_{i,t} + Industry\,Effect \\
&+ Fixed\,Year\,Effect + \varepsilon_{i,t}\,.
\end{aligned}$$

**The Effective of Investment Opportunity Set and Market Pressure (H3a & H3b)**

Expanding the findings by McGuire et al. (2014) that the probability of tax-sheltering is negatively associated with investment opportunity set and positively associated with market pressure, we test the third hypothesis (H3), whether tax haven activities are negatively associated with corporations' investment opportunity set and positively associated with market pressure, we employ the following model:

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[6] We also use *CSR* scores as alternative reputation measure, the results hold.

$$Haven_{i,t} = \beta_0 + \beta_1 CETR_{i,t} + \beta_2 Adj.CFO\ Volatility_{i,t} + \beta_3 Mkt\ Power_{i,t} + \beta_4\ Legitimacy_{i,t}$$
$$+ \beta_5 Opportunity\ Set_{i,t} + \beta_6 Mkt\ Pressure_{i,t} + \beta_7 Size_{i,t} + \beta_8 ROA_{i,t} + \beta_9 Leverage_{i,t}$$
$$+ \beta_{10}NOL_{i,t} + \beta_{11}\Delta NOL_{i,t} + \beta_{12}FI_{i,t} + \beta_{13}PPE_{i,t} + \beta_{14}Intangibles_{i,t} + \beta_{15}EqInc_{i,t}$$
$$+ \beta_{16}R\&D_{i,t} + \beta_{17}B/M_{i,t} + \beta_{18}\,iOWN_{i,t} + \beta_{19}\,abs(DA)_{i,t} + \beta_{20}\,Big5_{i,t}$$
$$+ Industry\ Effect + Fixed\ Year\ Effect + \varepsilon_{i,t}\,. \tag{3}$$

The predicted negative association between investment opportunity set and tax have activities

and the positive association between market pressure and tax haven activities imply that $\beta_5 < 0$

and $\beta_6 > 0$. Similar to estimations of Equations (1) and (2), tests of the coefficients from

Equation (3) are based on standard errors that are clustered at the firm level. Following Baber,

Janakiraman, and Kang (1996), Gaver and Gaver (1993), and McGuire et al. (2014), investment

opportunity set (*Opportunity Set*) incorporate four different measures, namely investment

intensity, growth in market value of assets, the market-to-book ratio, and the ratio of scaled R&D

expenditures. Adam and Goyal (2008) find that the market-to-book assets ratio provides the

highest information content regarding investment opportunities. *Opportunity Set* is the first

principal component score of the four measures where investment intensity is the sum of capital

expenditures (AQC), research and development expense (XRD),  and acquisitions (CAPXV) for

the past two years scaled by the sum of depreciation expense (DP) over the same period.  Growth

in market value of assets is the geometric growth rate of market value of assets for the past

two/three years for which data are available. The market-to-book ratio is the sum of market value

of a corporation's assets to the book value of its assets. The ratio of scaled R&D expenditures is

research and development expense (XRD) divided by total assets (AT).[7]

Market pressure (*Mkt Pressure*) is based on the count of positive changes in quarterly

earnings (Myers, Myers, and Skinner 2007; McGuire et al. 2014). Specifically, if split-adjusted

quarterly earnings is greater than that of same quarter from previous year, the count is set to 1

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[7] The first principal component accounts for approximately 33% of the total variance.

(one positive string) and otherwise to 0. Therefore the maximum number of positive string for a given year is 4. *Mkt Pressure* is 4 minus to total number of positive string for a given year.

To address whether investment opportunity set and market pressure affect firms' propensity to engage in tax haven activities, we use an ordered logit model where the total number of total haven countries/regions that a firm is associated with in a given year is $Haven_{i,t} \in \{1, 2, …, J\}$ and

$$\Pr(Haven_{i,t} \leq j \,|X) = F\left(\kappa_j - \beta X\right) \qquad j=1, 2, …, J \tag{3a}$$

where
$$\begin{aligned}
\beta X = {} & \beta_1 CETR_{i,t} + \beta_2 Adj.CFO\ Volatility_{i,t} + \beta_3 Mkt\ Power_{i,t} \\
& + \beta_4\ Legitimacy_{i,t} + \beta_5 Opportunity\ Set_{i,t} + \beta_6 Mkt\ Pressure_{i,t} + \beta_7 Size_{i,t} \\
& + \beta_8 ROA_{i,t} + \beta_9 Leverage_{i,t} + \beta_{10}NOL_{i,t} + \beta_{11}\Delta NOL_{i,t} + \beta_{12}FI_{i,t} + \beta_{13}PPE_{i,t} \\
& + \beta_{14}Intangibles_{i,t} + \beta_{15}EqInc_{i,t} + \beta_{16}R\&D_{i,t} + \beta_{17}B/M_{i,t} + \beta_{18}\,iOWN_{i,t} \\
& + \beta_{19}\,abs(DA)_{i,t} + \beta_{20}\,Big5_{i,t} + Industry\ Effect + Fixed\ Year\ Effect + \varepsilon_{i,t}\,.
\end{aligned}$$

Similar to equation (3), we predict a positive association between effective tax rate and tax haven activities and a negative association between operating uncertainty and tax haven activities, implying $\beta_5 < 0$ and $\beta_6 > 0$.


## RESULTS AND DISCUSSIONS

### Data

Financial reporting data is obtained from Compustat Annual Fundamental data. Corporate social responsibility data is obtained from MSCI, formerly known as KLD Research & Analytics and henceforth referred to as "KLD data" for the sample period available, 1995 to 2013. Institutional holding data is obtained from the Thomson Reuters Institutional Holdings (13F) database. Tax haven data is based on firms' 10-K filings (Exhibit 21) with the SEC. We exclude transportation and public utilities corporations with SIC codes between 4000-4999 and finance, insurance and real estate corporations with SIC codes between 6000-6999 because these

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industries are sufficiently unique that their examinations should be performed separately. All continuous variables used in regression analyses are winsorized at the top and bottom 1% levels of their cross-sectional distributions.

Table 1 Panel A reports the yearly tabulation of number of firms that engage in tax haven activities, from 1995 to 2013. The number of firms engaging in tax haven activities appear to be consistently around 1,000 each year, from 2003 to 2013. Table 1 Panel B reports tax haven firms in each main industry categories for 2013. It appears that tax haven firms are concentrated in manufacture sector. The tabulation demonstrates that unlike tax shelters,[8] tax haven activities are quite pervasive tax strategies adopted by firms. We interpret the result to be consistent with the notion that tax haven activities is an acceptable type of risk exposure from shareholders' perspective and firm managers are encouraged to carry out these tax avoidance strategies (Robinson et al. 2010; Armstrong et al. 2012).

[Insert Table 1 here]

Table 2 reports summary statistics beginning with distributional characteristics of variables used in the analyses. The means (medians) for $Haven_{ALL}$, $Haven_{OECD}$, and $Haven_{ABUSE}$ are 2.003 (1.000), 0.650 (0.000) and 1.196 (0.000) respectively, suggestive of skewed distributions for these haven measures. That is, although the majority of corporations (more than 50%) in the sample do not engage in haven activities per measures of $Haven_{OECD}$ and $Haven_{ABUSE}$, the ones that have havens tend to have multiple ones in different jurisdictions. Mean

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[8] Samples for tax sheltering activities tend to be very small. For example, Graham and Tucker (2006) use a sample of 43 unique firms with 152 firm-year observations. Wilson (2009) identifies 59 unique firms with 215 firm-year observations. Lisowsky (2010) has 267 firm-year observations. McGuire et al. (2014) use a sample of 45 unique firms.

(median) of *CETR* is 0.337 (0.267) indicating positive skew for the cash effective tax rates that may be due to small denominators for relatively few corporations. The variations for *CETR*, *Adj.CFO Volatility$_i$*, *Mkt Power*, *CSR*,[9] *Opportunity Set* and *Mkt Pressure* are quite high relative to their respective means and medians, indicating a wide range of measurement variation.


[Insert Table 2 here]


Table 3 reports univariate correlations between the variables. As expected, the three haven measures are positively correlated, with the coefficients ranging from 0.85 to 0.96 (Pearson) and 0.79 to 0.94 (Spearman). *CETR* is positively correlated with haven measures whereas *Adj. CFO Volatility* is negatively correlated with haven measures, suggesting that corporations face high cash tax liability and low operating uncertainties are more likely to engage in tax haven activities. In addition, *Mkt Power*, *CSR,* and *Opportunity Set* are also positively correlated with tax haven measures; the correlation between tax haven measures and *Mkt Pressure* are not statistically significant at 1% level. The correlation results provide some very preliminary results of the likely determinants of tax haven activities which prompts us to carry out detailed regressions analyses.


[Insert Table 3 here]

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[9] In regression analyses, we use *Legitimacy. Legitimacy* is a dummy variable that is set to 1 if a corporation's *CSR* scores is ranked as the top quartile within its industry for a given year (by two-dig SIC) and 0 otherwise.

**Cash Effective Tax Rates and Operating Uncertainty (H1)**

To investigate whether cash effective tax rate is positively associated with, and operating uncertainty is negatively associated with, tax haven activities, we carry out two sets of analyses. First, we estimate regression results where standard errors are clustered at the firm level while both year fixed effect and industry effect are included in the regressions (Eq. 1). The results are reported in Table 4 Panel A. As noted, the correlation coefficient of *CETR* is positive and significant in explaining all three tax haven measures while controlling for tax and corporation characteristics determinants, supporting the view that one of the necessary conditions for firms to engage in tax haven activities are high income tax liability. Moreover, the correlation coefficient of *Adj.CFO Volatility* is negative and significant across all three tax haven specifications, supporting the notion that another necessary condition for firms to engage in tax haven activities is low operating uncertainty. While, to the best of our knowledge, we are the first documenting the positive association between cash tax liability (*CETR*) and tax haven strategies, as well as the negative association between operating uncertainty (*Adj.CFO Volatility*) and tax haven strategies. Although *ROA* is positively correlated with all three tax haven measures (Table 2), the coefficient of *ROA* is negative and significant across three tax haven specifications after controlling for other corporation characteristics determinants.

In order to formally test whether tax liability and operating uncertainty affect the propensity for firms to engage in tax haven activities, we use ordered logit models to test the propensity. Table 4 Panel B reports regression results based on ordered logit models with fixed year and industry effects. The results are consistent with those reported in Panel A. Taken together, our results are consistent with the view that corporations with high income tax liability

and low operating uncertainty are the ones have the needs, i.e. high tax liability, and the means, i.e. low operating uncertainty are more likely to engage in tax haven activities.

[Insert Table 4 here]

**Market Power and Organizational Legitimacy (H2a & H2b)**

Table 5 reports the test on the association between market power, firm legitimacy and tax haven activities. The format is the same as that of Table 4 where Panel A reports regression results where standard errors are clustered at the firm level while both year fixed effect and industry effect are included in the regressions; and Panel B reports ordered logit regression results. The correlation coefficients of both *Mkt Power* and *Legitimacy,* reported in both Panel A and Panel B, are positive and significant across three tax haven measures after controlling for other corporation characteristics and tax determinants. The positive association between *Mkt Power* and tax haven measures is consistent with Kubick et al. (2015) where they substantiate that market power is positively related to tax avoidance, and we further demonstrate that market power is positively related to tax haven activities, a particular tax deferral/avoidance strategy. We interpret our findings as further evidence that a firm's dominating market power can serve as a natural hedging against potential risk exposure due to aggressive tax strategies.

The positive association between *Legitimacy* and tax haven measures is consistent with Davis et al. (2016) where they document a positive association between corporate social responsibility score and five-year cash effective tax rate. Davis et al. (2016) interpret their findings as evidence that good corporate citizenship investment and tax payment can act as substitutes, which implies that two types of investments, corporate citizenship investment and tax

avoidance strategy investment can both be incorporated into a firm's production function, i.e., within the scope of a given investment opportunity set (McGuire et al. (2014).


[Insert Table 5 here]


**Investment Opportunity Set and Market Pressure (H3a & H3b)**

Table 6 reports the test on the association between firms' investment opportunity set, market pressure and tax haven activities. The format is the same as that of Table 4 and Table 5 where Panel A reports regression results where standard errors are clustered at the firm level while both year fixed effect and industry effect are included in the regressions; and Panel B reports ordered logit regression results. The correlation coefficients of *Opportunity Set,* reported in both Panel A and Panel B, are negative and significant; the correlation coefficients of *Mkt Pressure* are positive and significant across three tax haven measures after controlling for other corporation characteristics and tax determinants. The results are consistent with McGuire et al. (2014) who provide evidence that the likelihood for firms to engage in tax sheltering activities is negatively associated with firms' investment opportunity set but positively associated with firms' market pressure. As noted earlier, tax sheltering activities represent an extreme type of tax avoidance strategy with embedded risks. McGuire et al. (2014) include only 45 firms which are identified with tax sheltering activities. Therefore, our findings supplement the findings by McGuire et al. (2014) by linking the effect of *Opportunity Set* and *Mkt Pressure* to tax haven activities, which are a much widely used tax planning strategy.


[Insert Table 6 here]

**CONCLUSION**

Our research contributes to the tax avoidance literature by developing a comprehensive portrait of firms that are likely to employ tax havens in their tax avoidance strategies. Based on factors identified in prior literature, (McGuire et al. 2014; Kubick et al. 2015; Davis et al. 2016), we establish that tax haven activities are positively associated with high cash effective tax rates and low operating uncertainty. These are necessary conditions for firms to benefit from tax haven activities. Market power and legitimacy both insulate firms from negative public perceptions (Kubick et al. 2015; Deephouse and Carter 2005) thus facilitating tax havens as viable tax avoidance strategies. However, for firms having an expansive investment opportunity set, tax avoidance is just one of many risky investment opportunities available to management (Armstrong, Blouin, Jagolinzer, and Larcker 2015). Accordingly, tax haven tax avoidance strategies will compete with many other viable investment strategies and are less likely to be selected. External market pressure may cause managers to engage in aggressive financial reporting behavior that incorporates tax havens in their tax planning strategies to achieve desirable financial reporting results (Desai 2005). From shareholders' perspective, tax haven activities can be considered as a viable business strategy. Thus, tax avoidance strategies may be potentially value-enhancing yet risky business endeavors (Rego and Wilson 2012) such that firms with stable profitability, shielded from public pressure, subject to market pressure and with fewer investments opportunities are likely to benefit from them.

The common proxy for tax avoidance is cash effect tax rate has been called into question (Frank et al. 2009; Wilson 2009; Lisowsky 2010; Hanlon and Heitzman 2010; Lanis and Richardson 2015). An alternative is to use actual identified tax shelter activity (Graham and

Tucker 2006; Hanlon and Slemrod 2009; Gallemore et al. 2014; Lanis and Richardson 2015).

However, these samples tend to be small and have a selection bias because they include only

corporations publically identified as investing in tax shelters. With more than 15,000 firm-year

observations, our study avoids the small and incomplete sample issues by including all firms

reporting tax haven investments to the SEC. Our study strengthens the validity of aggressive tax

sheltering research.

The results of this study should be of interest to those researching tax avoidance

strategies and tax policy makers. We have identified several conditional and determinant

characteristics of firms likely to adopt tax haven tax avoidance strategies. This profile can be

utilized in investigating other tax avoidance strategies such as tax shelters and aggressive stances

employed to influence financial reporting. Taxing authorities interested in curbing the use of tax

havens can target their efforts on the corporations most likely to tax advantage of, according to

President Obama, "one of the most insidious tax loopholes of U.S. corporate taxing system"

(Zarroli 2016).

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Appendix: Tax Haven Compositions

| $Haven_{ALL}$ | $Haven_{OECD}$ | $Haven_{ABUSE}$ |
|---|---|---|
| Andorra, Anguilla, Antigua and Barbuda, Antilles, Aruba, Bahamas, Bahrain, Barbados, Belize, Bermuda, Botswana, British Virgin Islands, Brunei, Cape Verde, Cayman Islands, Cook Islands, Costa Rica, Cyprus, Dominica, Gibraltar, Grenada, Guernsey, Hong Kong, Ireland, Isle of Man, Jersey, Jordan, Latvia, Lebanon, Liberia, Liechtenstein, Lucia, Luxembourg, Macau or Macao, Malaysia, Maldives, Malta, Marshall Islands, Mauritius, Monaco, Montserrat, Nauru, Netherlands, Niue, Panama, Philippines, Samoa, San Marino, Seychelles, Singapore, St Kitts and Nevis, St Vincent and Grenadines, Switzerland, Tonga, Turks and Caicos, U.S. Virgin Islands, Uruguay, Vanuatu | Andorra, Anguilla, Antigua and Barbuda, Antilles, Aruba, Bahamas, Bahrain, Belize, Bermuda, British Virgin Islands, Cayman Islands, Cook Islands, Costa Rica, Dominica, Gibraltar, Grenada, Liberia, Liechtenstein, Lucia, Malaysia, Marshall Islands, Monaco, Montserrat, Nauru, Niue, Panama, Philippines, Samoa, San Marino, St Kitts and Nevis, St Vincent and Grenadines, Turks and Caicos, Uruguay, Vanuatu | Andorra, Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Cook Islands, Cyprus, Dominica, Gibraltar, Grenada, Guernsey, Hong Kong, Isle of Man, Jersey, Latvia, Liechtenstein, Lucia, Luxembourg, Malta, Panama, Samoa, Singapore, St Kitts and Nevis, St Vincent and Grenadines, Switzerland, U.S. Virgin Islands, Vanuatu |

Table 1 Tax Haven Counts (1995-2013)

Panel A Number of Corporations with Tax Havens by Year

| Year | Haven$_{ALL}$ | Haven$_{OECD}$ | Haven$_{ABUSE}$ |
|---|---|---|---|
| 1995 | 52 | 28 | 50 |
| 1996 | 76 | 27 | 72 |
| 1997 | 110 | 33 | 107 |
| 1998 | 57 | 22 | 55 |
| 1999 | 39 | 15 | 39 |
| 2000 | 41 | 22 | 41 |
| 2001 | 65 | 38 | 61 |
| 2002 | 217 | 119 | 210 |
| 2003 | 954 | 580 | 926 |
| 2004 | 981 | 613 | 957 |
| 2005 | 1,009 | 627 | 984 |
| 2006 | 1,025 | 638 | 995 |
| 2007 | 1,001 | 665 | 964 |
| 2008 | 1,068 | 711 | 1,030 |
| 2009 | 1,005 | 666 | 979 |
| 2010 | 1,063 | 723 | 1,023 |
| 2011 | 1,034 | 687 | 997 |
| 2012 | 1,166 | 750 | 1,137 |
| 2013 | 974 | 646 | 958 |
| | | | |
| Total Counts | 11,937 | 7,610 | 11,585 |

Panel B Corporations with Tax Havens by Industry (Year: 2013)

| Industry | SIC codes | Haven$_{ALL}$ | Haven$_{OECD}$ | Haven$_{ABUSE}$ |
|---|---|---|---|---|
| Agriculture, Forestry and Fishing | 100-999 | 4 | 3 | 4 |
| Mining | 1000-1499 | 49 | 46 | 49 |
| Construction | 1500-1799 | 17 | 15 | 16 |
| Manufacturing | | | | |
| | 2000-2700 | 85 | 57 | 85 |
| | 2800-2899* | 105 | 74 | 104 |
| | 2900-3499 | 57 | 39 | 55 |
| | 3500-3599** | 98 | 70 | 98 |
| | 3600-3699*** | 132 | 92 | 130 |
| | 3700-3999 | 122 | 65 | 120 |
| Wholesale Trade | 5000-5199 | 30 | 20 | 30 |
| Retail Trade | 5200-5999 | 54 | 30 | 52 |
| Services | 7000-8999 | 218 | 132 | 212 |
| Other | 9900-9999 | 3 | 3 | 3 |
| | | | | |
| Total Counts | | 974 | 646 | 958 |

Note: * 2800-2899: Chemicals and Allied Products
** 3500-3599: Industrial and Commercial Machinery and Computer Equipment
***3600-3699: Electronic and Other Electrical Equipment and Components, Except Computer Equipment

Table 2 - Summary Statistics (1995-2013)

| | N | Mean | σ | 10% | 25% | 50% | 75% | 90% |
|---|---|---|---|---|---|---|---|---|
| $Haven_{ALL}$ | 18,110 | 2.003 | 2.946 | 0.000 | 0.000 | 1.000 | 3.000 | 6.000 |
| $Haven_{OECD}$ | 18,110 | 0.650 | 1.329 | 0.000 | 0.000 | 0.000 | 1.000 | 2.000 |
| $Haven_{ABUSE}$ | 18,110 | 1.196 | 1.811 | 0.000 | 0.000 | 0.000 | 2.000 | 4.000 |
| | | | | | | | | |
| CETR | 21,593 | 0.337 | 0.511 | 0.016 | 0.016 | 0.267 | 0.359 | 0.520 |
| Adj.CFO Volatility | 22,832 | -0.006 | 0.112 | -0.066 | -0.066 | -0.018 | 0.006 | 0.050 |
| Mkt Power | 22,861 | -0.471 | 5.684 | -0.100 | -0.100 | 0.041 | 0.122 | 0.257 |
| CSR | 22,861 | -0.288 | 2.480 | -3.000 | -3.000 | -1.000 | 1.000 | 2.000 |
| Opportunity Set | 21,610 | -0.107 | 0.568 | -0.447 | -0.447 | -0.288 | -0.031 | 0.365 |
| Mkt Pressure | 22,847 | 1.609 | 1.350 | 0.000 | 0.000 | 1.000 | 3.000 | 4.000 |
| | | | | | | | | |
| Size | 22,744 | 7.168 | 1.543 | 5.343 | 5.343 | 7.014 | 8.154 | 9.339 |
| ROA | 22,844 | 0.026 | 0.282 | -0.104 | -0.104 | 0.054 | 0.099 | 0.155 |
| Leverage | 22,749 | 0.205 | 0.256 | 0.000 | 0.000 | 0.147 | 0.303 | 0.478 |
| NOL | 22,861 | 0.684 | 0.465 | 0.000 | 0.000 | 1.000 | 1.000 | 1.000 |
| ΔNOL | 22,844 | 0.034 | 0.383 | -0.018 | -0.018 | 0.000 | 0.003 | 0.071 |
| FI | 22,741 | 0.019 | 0.041 | 0.000 | 0.000 | 0.000 | 0.030 | 0.074 |
| PPE | 22,823 | 0.283 | 0.281 | 0.042 | 0.042 | 0.198 | 0.378 | 0.648 |
| Intangible | 22,741 | 0.202 | 0.246 | 0.000 | 0.000 | 0.118 | 0.305 | 0.517 |
| EqInc | 22,741 | 0.004 | 0.430 | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 |
| R&D | 22,741 | 0.058 | 0.123 | 0.000 | 0.000 | 0.010 | 0.071 | 0.161 |
| B/M | 22,741 | 0.401 | 9.856 | 0.120 | 0.120 | 0.398 | 0.622 | 0.908 |
| iOWN | 22,861 | 0.696 | 0.277 | 0.296 | 0.296 | 0.757 | 0.893 | 0.983 |
| Abs(DA) | 21,136 | 0.088 | 0.109 | 0.011 | 0.011 | 0.062 | 0.113 | 0.183 |
| $Big_5$ | 22,777 | 0.903 | 0.296 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

Note: $Haven_{ALL}$, $Haven_{OECD}$, and $Haven_{ABUSE}$ are the sum of total unique haven countries/regions listed in Form 10-K Exhibit 21. The countries/regions included in different haven categories are reported in Appendix. C*ETR* is the sum of income tax paid (TXPD) divided by the sum of pretax income (PI) over the five year rolling period from *t*-4 to *t*. *Adj. CFO Volatility* is the yearly industry median adjusted (by 2-digit SIC) standard deviation of *CFO* measured period by *t-4* to *t*. *CFO* is cash flow from operating activity (OANCF) scaled by total assets (AT). *Mkt Power* is excess price-cost margin. Price-cost margin is industry-median-adjusted (2-digit SIC) price-cost margin which is the ratio of sales (SALE) less cost of goods sold (COGS) less selling, general, and administrative expense (XSGA) divided by sales (SALE). *CSR* is the total strengths minus total concerns in KLD's six social rating categories which are corporate governance, community, diversity, employee relations, environment, and product respectively. *Opportunity Set* is the first principal component score of investment intensity, growth in market value of assets, the market-to-book ratio, and the ratio of scaled R&D expenditures. Investment intensity is the sum of capital expenditures (AQC), research and development expense (XRD), and acquisitions (CAPXV) for the past two years scaled by the sum of depreciation expense (DP) over the same period. Growth in market value of assets is the geometric growth rate of market value of assets for the past two/three years for which data are available. The market-to-book ratio is the sum of market value of a corporation's assets to the book value of its assets. The ratio of scaled R&D expenditures is research and development expense (XRD) divided by total assets (AT). *Mkt Pressure* is based on the count of positive changes in quarterly earnings. If split-adjusted quarterly earnings is greater than that of same quarter from previous year, the count is set to 1 (one positive string) and otherwise to 0. Therefore the maximum number of positive string for a given year is 4. *Mkt Pressure* is 4 minus to total number of positive string for a given year. *Size* is the natural logarithm of equity market value – fiscal year end price (PRCC_F) multiplied by common share outstanding (SCHO). *ROA* is income before extraordinary items (IB) scaled by beginning balance total assets (AT). *Leverage, NOL, ΔNOL, FI, PPE, Intangible, EqInc,* and *R&D* are total long-term debt (DLTT), net operating loss carryforward (TLCF), change of net operating loss carryforward (TLCF), foreign income (PIFO), total net property, plant and equipment (PPENT), intangible assets (INTAN), equity income (ESUB), and research and development expense (XRD) respectively, all of which are scaled by beginning balance total assets (AT). *B/M* is the equity book value (CEQ) divided by equity market value. *iOWN* is the percentage of institutional holding of common shares outstanding. *Abs(DA)* is the absolute value of the discretionary accruals estimated using the Kothari et al. (2005) performance-adjusted accruals model: $Accruals_{it}=\beta_0(1/Assets_{it-1}) + \beta_1\Delta Sales_{it} + \beta_2 PPE_{it} + \beta_3 ROA_{it} + \varepsilon_{it}$, where total accruals (*Accruals*) is income before extraordinary item (IB) minus cash flow from operating activities (OABCF). The accrual model is estimated cross-sectionally each year within 2-digit SIC groups. *DA* is the estimated error. *Big_5* is an indicator variable set to 1 if the audit corporation is one of the Big 4/Big 5 and 0 otherwise All continuous variables are winsorized at the top and bottom 1% of their cross-sectional distribution (two-tailed).

Table 3 - Correlation Matrices

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) | (16) | (17) | (18) | (19) | (20) | (21) | (22) | (23) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Haven$_{ALL}$ (1) | | .79 | .94 | .09 | -.27 | .13 | .08 | .14 | -.01 | .42 | .05 | .07 | -.02 | .00 | .47 | -.10 | .24 | .11 | .16 | .01 | .20 | -.01 | .16 |
| Haven$_{OECD}$ (2) | .89 | | .79 | .06 | -.18 | .09 | .06 | .03 | .00 | .38 | .03 | .10 | -.01 | .01 | .36 | -.02 | .15 | .13 | .05 | .01 | .12 | -.01 | .13 |
| Haven$_{ABUSE}$ (3) | .96 | .85 | | .07 | -.24 | .12 | .08 | .12 | -.01 | .41 | .05 | .07 | -.01 | .00 | .42 | -.09 | .21 | .10 | .14 | .00 | .18 | -.01 | .14 |
| CETR (4) | .04 | .02 | .03 | | -.09 | .04 | .06 | -.28 | .01 | .05 | .07 | .02 | .04 | -.03 | .06 | .04 | .06 | .04 | -.22 | .13 | .03 | -.14 | .04 |
| Adj.CFO Volatility (5) | -.16 | -.12 | -.15 | -.02 | | -.34 | -.09 | -.11 | .06 | -.30 | -.10 | -.10 | .00 | .04 | -.26 | .00 | -.25 | -.08 | -.06 | -.02 | -.16 | .09 | -.11 |
| Mkt Power (6) | .04 | .03 | .04 | .03 | -.17 | | .07 | .16 | -.25 | .41 | .62 | .07 | .01 | -.16 | .33 | .08 | .16 | .06 | -.01 | -.25 | .13 | .12 | .03 |
| CSR (7) | .20 | .17 | .18 | .00 | -.07 | .02 | | .05 | -.02 | .19 | .10 | -.05 | .01 | .00 | .11 | -.01 | .01 | -.01 | .08 | -.11 | -.03 | .02 | .09 |
| Opportunity Set (8) | -.04 | -.06 | -.04 | -.13 | .29 | -.34 | .01 | | -.12 | .06 | .08 | -.26 | -.02 | .04 | .09 | -.35 | .02 | -.11 | .81 | -.47 | .12 | .30 | -.01 |
| Mkt Pressure (9) | -.01 | .00 | -.01 | .04 | .05 | -.08 | -.02 | .04 | | -.18 | -.46 | .03 | -.02 | .12 | -.15 | -.02 | -.06 | -.06 | .06 | .21 | -.03 | -.02 | -.02 |
| Size (10) | .46 | .42 | .45 | -.07 | -.20 | .09 | .26 | -.10 | -.17 | | .34 | .20 | -.01 | -.06 | .36 | .16 | .15 | .17 | -.04 | -.32 | .22 | -.04 | .27 |
| ROA (11) | .08 | .06 | .08 | -.01 | -.39 | .27 | .05 | -.32 | -.23 | .19 | | -.12 | .06 | -.23 | .30 | .11 | .05 | .08 | -.15 | -.28 | .12 | .08 | .00 |
| Leverage (12) | .01 | .03 | .01 | .00 | -.01 | -.01 | -.05 | -.07 | .03 | .09 | -.12 | | -.01 | .04 | .01 | .32 | .20 | .11 | -.27 | -.02 | .08 | -.14 | .12 |
| NOL (13) | -.02 | -.01 | -.02 | .02 | -.02 | .02 | .00 | -.02 | -.02 | -.01 | .02 | .00 | | .16 | -.02 | -.01 | .00 | -.02 | -.04 | .01 | -.02 | .00 | -.01 |
| ΔNOL (14) | -.03 | -.03 | -.03 | -.02 | .17 | -.16 | -.02 | .20 | .07 | -.07 | -.42 | .08 | .09 | | -.08 | -.01 | -.02 | -.02 | .07 | -.01 | -.06 | .02 | .02 |
| FI (15) | .35 | .28 | .32 | -.03 | -.12 | .07 | .14 | -.04 | -.17 | .35 | .19 | -.04 | -.01 | -.05 | | -.02 | .16 | .12 | .13 | -.09 | .10 | .01 | .09 |
| PPE (16) | -.13 | -.05 | -.12 | -.05 | -.02 | .04 | -.06 | -.23 | .00 | .11 | -.01 | .32 | -.01 | .00 | -.04 | | -.29 | .11 | -.39 | .05 | -.06 | -.16 | .02 |
| Intangible (17) | .13 | .08 | .12 | .00 | -.08 | .05 | .01 | -.07 | -.05 | .10 | .01 | .25 | .01 | .01 | .03 | -.23 | | .04 | .02 | .04 | .17 | -.01 | .05 |
| EqInc (18) | .03 | .02 | .02 | .00 | .23 | .00 | .00 | .01 | .01 | .00 | -.69 | .09 | .00 | .21 | -.02 | .10 | .04 | | -.10 | .01 | .02 | -.09 | .06 |
| R&D (19) | -.06 | -.08 | -.06 | -.10 | .30 | -.31 | .01 | .85 | .10 | -.13 | -.43 | -.07 | -.03 | .29 | -.05 | -.23 | -.05 | .00 | | -.25 | -.07 | .25 | .03 |
| B/M (20) | -.04 | -.03 | -.04 | .01 | .00 | .00 | .01 | -.01 | .01 | .02 | .00 | .00 | .01 | .00 | .00 | .00 | .00 | .00 | .00 | | .05 | -.22 | -.04 |
| iOWN (21) | .15 | .09 | .14 | .02 | -.13 | .05 | .00 | -.01 | -.04 | .20 | .14 | .02 | -.02 | -.07 | .09 | -.05 | .12 | -.01 | -.13 | .02 | | -.02 | .14 |
| Abs(DA) (22) | -.04 | -.03 | -.04 | -.06 | .25 | -.15 | .00 | .33 | .00 | -.06 | -.26 | .00 | .00 | .17 | .01 | -.05 | -.01 | -.03 | .39 | .00 | -.07 | | -.05 |
| Big$_5$ (23) | .14 | .12 | .13 | .00 | -.11 | .03 | .08 | -.03 | -.02 | .26 | .02 | .07 | -.01 | .00 | .05 | -.03 | .02 | .00 | -.01 | .00 | .15 | -.05 | |

Note: Pearson correlations appear below the diagonal and Spearman Correlations appear above. Variable descriptions are the same as outlined in table 2. All continuous variables are winsorized at the top and bottom 1% of their cross-sectional distributions. Correlations in bold are significant at 0.01 level (two tailed).

Table 4 – H1: The Necessary Condition for Tax Haven Activities (N=15,668, years)
Panel A: Regression Results of Equation (1)

$$Haven_{i,t} = \beta_0 + \beta_1 CETR_{i,t} + \beta_2\,Adj.CFO\ Volatility_{i,t} + \beta_3 Size_{i,t} + \beta_4 ROA_{i,t} + \beta_5 Leverage_{i,t}$$
$$+ \beta_6 NOL_{i,t} + \beta_7 \Delta NOL_{i,t} + \beta_8 FI_{i,t} + \beta_9 PPE_{i,t} + \beta_{10} Intangibles_{i,t}$$
$$+ \beta_{11} EqInc_{i,t} + \beta_{12} R\&D_{i,t} + \beta_{13} B/M_{i,t} + \beta_{14}\,iOWN_{i,t} + \beta_{15}\,abs(DA)_{i,t}$$
$$+ \beta_{16\ Big4/5_{i,t}} + Industry\ Effect + Fixed\ Year\ Effect + \varepsilon_{i,t} \qquad (1)$$

| | Pred. Sign | $Haven_{ALL}$ | | $Haven_{OECD}$ | | $Haven_{ABUSE}$ | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| Intercept | | -4.197*** | (-10.22) | -2.054*** | (-9.80) | -2.332*** | (-9.26) |
| CETR | (H1: +) | 0.305*** | (5.78) | 0.080*** | (3.60) | 0.157*** | (5.16) |
| Adj.CFO Volatility | (H1: -) | -2.229*** | (-4.77) | -0.609*** | (-3.23) | -1.116*** | (-4.45) |
| Book-Tax Difference | | 0.533 | (1.47) | 0.240* | (1.74) | 0.346* | (1.68) |
| FI | | 15.173*** | (11.77) | 5.094*** | (8.04) | 8.045*** | (10.33) |
| Intangible | | 0.255 | (1.31) | 0.029 | (0.31) | 0.151 | (1.23) |
| R&D | | -1.435*** | (-2.96) | -1.160*** | (-5.19) | -0.664** | (-2.23) |
| iOWN | | -0.488*** | (-2.89) | -0.348*** | (-4.11) | -0.305*** | (-2.94) |
| Size | | 0.909*** | (15.87) | 0.395*** | (12.95) | 0.542 | (15.54) |
| ROA | | -3.554*** | (-8.61) | -1.537*** | (-8.82) | -2.022*** | (-8.37) |
| Leverage | | 0.051 | (0.27) | 0.014 | (0.16) | 0.047 | (0.40) |
| NOL | | -0.052 | (-0.56) | 0.022 | (0.47) | -0.018 | (-0.32) |
| ΔNOL | | -0.641* | (1.73) | -0.284** | (-2.00) | -0.426** | (-2.03) |
| PPE | | -1.908*** | (-11.12) | -0.555*** | (-6.64) | -1.111*** | (-10.73) |
| EqInc | | 0.427 | (0.11) | -0.595 | (-0.38) | -0.568 | (-0.24) |
| B/M | | 0.451*** | (5.18) | 0.198*** | (4.73) | 0.269*** | (5.08) |
| Abs(DA) | | -0.263 | (-0.87) | 0.085 | (0.52) | -0.255 | (-1.32) |
| Big4/5 | | 0.202** | (2.09) | 0.047 | (1.12) | 0.066 | (1.02) |
| Include Industry Effect | | Yes | | Yes | | Yes | |
| Include Fixed Year Effect | | Yes | | Yes | | Yes | |
| Adj. $R^2$ | | 32.21% | | 24.05% | | 28.55% | |

Note: Variable descriptions are the same as outlined in Table 2. All continuous variables are winsorized at top and bottom 1% of their cross-sectional distribution. *, **, *** denote statistical significance at 10%, 5%, and 1% levels, respectively (two-tailed). Cluster explanation.

Table 4 – H1: The Necessary Condition for Tax Haven Activities (continued, N=15,668, year)
Panel B: Regression Results of Equation (1a)

$$Pr(Haven_{i,t} \leq j \,|X) = F\,(\kappa_j - \beta X)\ j=1, 2, \ldots, J \tag{1a}$$

where $\beta X = \beta_1 CETR_{i,t} + \beta_2\,Adj.CFO\ Volatility_{i,t} + \beta_3 Size_{i,t} + \beta_4 ROA_{i,t} + \beta_5 Leverage_{i,t}$
$+ \beta_6 NOL_{i,t} + \beta_7 \Delta NOL_{i,t} + \beta_8 FI_{i,t} + \beta_9 PPE_{i,t} + \beta_{10} Intangibles_{i,t} + \beta_{11} EqInc_{i,t}$
$+ \beta_{12} R\&D_{i,t} + \beta_{13} B/M_{i,t} + \beta_{14}\, iOWN_{i,t} + \beta_{15}\, abs(DA)_{i,t} + \beta_{16}\, Big5_{i,t}$
$+ Industry\ Effect + Fixed\ Year\ Effect + \varepsilon_{i,t}\,.$

| | Pred. Sign | $Haven_{ALL}$ Coef. | z-stat | $Haven_{OECD}$ Coef. | z-stat | $Haven_{ABUSE}$ Coef. | z-stat |
|---|---|---|---|---|---|---|---|
| *Intercepts\** | | | | | | | |
| CETR | (H1: +) | 0.266*** | (9.32) | 0.195*** | (5.97) | 0.234*** | (7.95) |
| *Adj.CFO Volatility* | (H1: -) | -4.219*** | (-13.46) | -2.868*** | (-7.57) | -3.320*** | (-10.31) |
| *Book-Tax Difference* | | 1.417*** | (5.71) | 1.779*** | (5.66) | 1.449*** | (5.59) |
| FI | | 12.668*** | (30.97) | 10.541*** | (23.03) | 10.896*** | (26.12) |
| *Intangible* | | 0.039 | (0.54) | -0.073 | (-0.85) | 0.012 | (0.16) |
| R&D | | -0.434* | (-1.91) | -2.061*** | (-7.05) | -0.280 | (-1.19) |
| iOWN | | -0.093 | (1.50) | -0.200*** | (-2.73) | -0.111* | (-1.72) |
| Size | | 0.619*** | (46.22) | 0.642*** | (42.77) | 0.616*** | (44.96) |
| ROA | | -3.689*** | (-15.08) | -4.443*** | (-14.16) | -3.513*** | (-13.69) |
| *Leverage* | | 0.103 | (1.19) | 0.199* | (1.96) | 0.048 | (0.52) |
| NOL | | -0.044 | (-1.32) | 0.041 | (1.06) | -0.030 | (-0.87) |
| *ΔNOL* | | -1.481*** | (-5.85) | -1.957*** | (-6.11) | -1.650*** | (-6.23) |
| PPE | | -2.150*** | (-25.72) | -1.454*** | (-15.18) | -1.978*** | (-22.66) |
| EqInc | | 0.576 | (0.24) | -1.487 | (-0.48) | -1.387 | (-0.53) |
| B/M | | 0.454*** | (12.58) | 0.473*** | (11.82) | 0.434*** | (11.64) |
| *Abs(DA)* | | -0.480** | (-2.36) | -0.096 | (-0.40) | -0.622*** | (-2.91) |
| $Big_{4/5}$ | | 0.351*** | (6.05) | 0.322*** | (4.26) | 0.297*** | (4.83) |
| | | | | | | | |
| Include Industry Effect | | Yes | | Yes | | Yes | |
| Include Fixed Year Effect | | Yes | | Yes | | Yes | |
| *Pseudo R²* | | 32.76% | | 23.76% | | 28.56% | |

Note: Variable descriptions are the same as outlined in Table 2. Ordered logit intercepts are omitted for brevity. All continuous variables are winsorized at top and bottom 1% of their cross-sectional distribution. *, **, *** denote statistical significance at 10%, 5%, and 1% levels, respectively (two-tailed).

Table 5 – H2: The Association between Market Power, Reputation and Tax Haven Activities (N=15,660, year)

Panel A: Regression Results of Equation (2)

$$Haven_{i,t} = \beta_0 + \beta_1 CETR_{i,t} + \beta_2\,Adj.CFO\ Volatility_{i,t} + \beta_3 Mkt\ Power_{i,t} + \beta_4 Legitimacy_{i,t}$$
$$+ \beta_5 Size_{i,t} + \beta_6 ROA_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 NOL_{i,t} + \beta_9 \Delta NOL_{i,t} + \beta_{10} FI_{i,t}$$
$$+ \beta_{11} PPE_{i,t} + \beta_{12} Intangibles_{i,t} + \beta_{13} EqInc_{i,t} + \beta_{14} R\&D_{i,t} + \beta_{15} B/M_{i,t}$$
$$+ \beta_{16}\,iOWN_{i,t} + \beta_{17}\,abs(DA)_{i,t} + \beta_{18}\,Big5_{i,t} + Industry\ Effect$$
$$+ Fixed\ Year\ Effect + \varepsilon_{i,t}\,. \tag{2}$$

| | Pred. Sign | $Haven_{ALL}$ | | $Haven_{OECD}$ | | $Haven_{ABUSE}$ | |
|---|---|---|---|---|---|---|---|
| | | Coef. | t-stat | Coef. | t-stat | Coef. | t-stat |
| Intercept | | -4.057*** | (-10.09) | -1.999*** | (-9.81) | -2.268*** | (-9.17) |
| CETR | (H1: +) | 0.297*** | (5.64) | 0.077*** | (3.47) | 0.153*** | (5.03) |
| Adj.CFO Volatility | (H1: -) | -2.102*** | (-4.56) | -0.563*** | (-3.01) | -1.042*** | (-4.19) |
| Mkt Power | (H2: +) | 0.028*** | (3.69) | 0.009*** | (3.94) | 0.018*** | (4.24) |
| Legitimacy | (H2: +) | 0.318*** | (3.26) | 0.125** | (2.47) | 0.139** | (2.30) |
| Book-Tax Difference | | 0.515 | (1.48) | 0.234* | (1.75) | 0.337* | (1.69) |
| FI | | 15.102*** | (11.68) | 5.059*** | (7.94) | 8.021*** | (10.27) |
| Intangible | | 0.260 | (1.33) | 0.032 | (0.33) | 0.150 | (1.22) |
| R&D | | -1.446*** | (-2.97) | -1.173*** | (-5.19) | -0.653** | (-2.18) |
| iOWN | | -0.463*** | (-2.77) | -0.339*** | (-4.04) | -0.294*** | (-2.85) |
| Size | | 0.883*** | (16.04) | 0.385*** | (13.34) | 0.531*** | (15.73) |
| ROA | | -3.675*** | (-9.06) | -1.575*** | (-9.14) | -2.105*** | (-8.84) |
| Leverage | | 0.072 | (0.38) | 0.022 | (0.24) | 0.058 | (0.49) |
| NOL | | -0.058 | (-0.62) | 0.019 | (0.42) | -0.021 | (-0.36) |
| $\Delta$NOL | | -0.615* | (-1.72) | -0.275** | (-1.99) | -0.412** | (-2.04) |
| PPE | | -1.899*** | (-11.11) | -0.552*** | (-6.63) | -1.108*** | (-10.72) |
| EqInc | | 0.345 | (0.09) | -0.501 | (-0.30) | -0.451 | (-0.18) |
| B/M | | 0.439*** | (5.12) | 0.193*** | (4.67) | 0.263*** | (5.03) |
| Abs(DA) | | -0.278 | (-0.91) | 0.080 | (0.49) | -0.259 | (-1.34) |
| Big$_{4/5}$ | | 0.191** | (1.96) | 0.043 | (1.02) | 0.060 | (0.92) |
| | | | | | | | |
| Include Industry Effect | | Yes | | Yes | | Yes | |
| Include Fixed Year Effect | | Yes | | Yes | | Yes | |
| Adj. $R^2$ | | 32.45% | | 24.21% | | 28.70% | |

Note: Variable descriptions are the same as outlined in Table 2. *Legitimacy* is a dummy variable which is set to one if a corporation's *CSR* scores is ranked as the top quartile within its industry for a given year (by 2-digit SIC) and 0 otherwise. All continuous variables are winsorized at top and bottom 1% of their cross-sectional distribution. *, **, *** denote statistical significance at 10%, 5%, and 1% levels, respectively (two-tailed).

Table 5 – H2: The Association between Market Power, Reputation and Tax Haven Activities (continued, N=15,660, year)

Panel B: Regression Results of Equation (2a)

$$Pr(Haven_{i,t} \leq j \,|X) = F(\kappa_j - \beta X) \qquad j=1, 2, \ldots, J \qquad (2a)$$

where
$$\beta X = \beta_1 CETR_{i,t} + \beta_2 \,Adj.CFO\, Volatility_{i,t} + \beta_3 Mkt\, Power_{i,t} + \beta_4\, Legitimacy_{i,t}$$
$$+ \beta_5 Size_{i,t} + \beta_6 ROA_{i,t} + \beta_7 Leverage_{i,t} + \beta_8 NOL_{i,t} + \beta_9 \Delta NOL_{i,t} \beta_{10} FI_{i,t}$$
$$+ \beta_{11} PPE_{i,t} + \beta_{12} Intangibles_{i,t} + \beta_{13} EqInc_{i,t} + \beta_{14} R\&D_{i,t} + \beta_{15} B/M_{i,t}$$
$$+ \beta_{16} iOWN_{i,t} + \beta_{17}\, abs(DA)_{i,t} + \beta_{18}\, Big5_{i,t} + Industry\, Effect$$
$$+ Fixed\, Year\, Effect + \varepsilon_{i,t}\,.$$

| | | Haven_ALL | | Haven_OECD | | Haven_ABUSE | |
|---|---|---|---|---|---|---|---|
| | Pred. Sign | Coef. | z-stat | Coef. | z-stat | Coef. | z-stat |
| *Intercepts** | | | | | | | |
| CETR | (H1: +) | 0.255*** | (8.96) | 0.176*** | (5.36) | 0.223*** | (7.56) |
| Adj.CFO Volatility | (H1: -) | -4.086*** | (-12.96) | -2.354*** | (-6.06) | -3.167*** | (-9.77) |
| Mkt Power | (H2: +) | 0.109*** | (5.09) | 0.421*** | (5.55) | 0.134*** | (4.71) |
| Legitimacy | (H2: +) | 0.077** | (2.12) | 0.038 | (0.91) | 0.007 | (0.18) |
| Book-Tax Difference | | 1.294*** | (5.20) | 1.556*** | (4.97) | 1.331*** | (5.13) |
| FI | | 12.765*** | (31.18) | 10.669*** | (23.31) | 11.001*** | (26.36) |
| Intangible | | 0.013 | (0.17) | -0.120 | (-1.38) | -0.021 | (-0.28) |
| R&D | | -0.327 | (-1.44) | -1.855*** | (-6.39) | -0.138 | (-0.58) |
| iOWN | | -0.085 | (-1.37) | -0.203*** | (-2.76) | -0.110* | (-1.69) |
| Size | | 0.613*** | (44.72) | 0.634*** | (40.63) | 0.615*** | (43.28) |
| ROA | | -3.954*** | (-15.92) | -5.050*** | (-15.60) | -3.820*** | (-14.64) |
| Leverage | | 0.119 | (1.36) | 0.216** | (2.10) | 0.056 | (0.62) |
| NOL | | -0.044 | (-1.32) | 0.037 | (0.95) | -0.029 | (-0.84) |
| ΔNOL | | -1.317*** | (-5.19) | -1.640*** | (-5.13) | -1.487*** | (-5.60) |
| PPE | | -2.158*** | (-25.78) | -1.476*** | (-15.39) | -1.991*** | (-22.75) |
| EqInc | | -0.161 | (-0.06) | -1.032 | (-0.33) | -1.327 | (-0.50) |
| B/M | | 0.434*** | (12.06) | 0.449*** | (11.26) | 0.417*** | (11.18) |
| Abs(DA) | | -0.509** | (-2.50) | -0.197 | (-0.81) | -0.651*** | (-3.04) |
| Big_4/5 | | 0.342*** | (5.88) | 0.313*** | (4.13) | 0.288*** | (4.67) |
| | | | | | | | |
| Include Industry Effect | | Yes | | Yes | | Yes | |
| Include Fixed Year Effect | | Yes | | Yes | | Yes | |
| *Pseudo R²* | | 33.04% | | 24.11% | | 28.82% | |

Note: Variable descriptions are the same as outlined in Table 2. *Legitimacy* is a dummy variable which is set to one if a corporation's *CSR* scores is ranked as the top quartile within its industry for a given year (by 2-digit SIC) and 0 otherwise. Ordered logit intercepts are omitted for brevity. All continuous variables are winsorized at top and bottom 1% of their cross-sectional distribution. *, **, *** denote statistical significance at 10%, 5%, and 1% levels, respectively (two-tailed).

Table 6 – H3: The Association between Investment Opportunity Set, Market Pressure and Tax Haven Activities (N=15,127, year)

Panel A: Regression Results of Equation (3)

$$Haven_{i,t} = \beta_0 + \beta_1 CETR_{i,t} + \beta_2\, Adj.CFO\ Volatility_{i,t} + \beta_3 Mkt\ Power_{i,t} + \beta_4 Legitimacy_{i,t}$$
$$+ \beta_5 Opportunity\ Set_{i,t} + \beta_6 Mkt\ Pressure_{i,t} + \beta_7 Size_{i,t} + \beta_8 ROA_{i,t} + \beta_9 Leverage_{i,t}$$
$$+ \beta_{10} NOL_{i,t} + \beta_{11}\Delta NOL_{i,t} + \beta_{12} FI_{i,t} + \beta_{13} PPE_{i,t} + \beta_{14} Intangibles_{i,t} + \beta_{15} EqInc_{i,t}$$
$$+ \beta_{16} R\&D_{i,t} + \beta_{17} B/M_{i,t} + \beta_{18}\, iOWN_{i,t} + \beta_{19}\, abs(DA)_{i,t} + \beta_{20}\, Big5_{i,t}$$
$$+ Industry\ Effect + Fixed\ Year\ Effect + \varepsilon_{i,t}\,. \tag{3}$$

| | Pred. Sign | Haven_ALL Coef. | Haven_ALL t-stat | Haven_OECD Coef. | Haven_OECD t-stat | Haven_ABUSE Coef. | Haven_ABUSE t-stat |
|---|---|---|---|---|---|---|---|
| Intercept | | -4.367*** | (-10.34) | -2.197*** | (-10.15) | -2.453*** | (-9.45) |
| CETR | (H1: +) | 0.276*** | (5.20) | 0.071*** | (3.15) | 0.141*** | (4.57) |
| Adj.CFO Volatility | (H1: -) | -1.885*** | (-3.80) | -0.472** | (-2.34) | -0.912*** | (-3.39) |
| Mkt Power | (H2: +) | 0.015* | (1.92) | 0.004* | (1.70) | 0.011** | (2.47) |
| Legitimacy | (H2: +) | 0.298*** | (3.02) | 0.118** | (2.30) | 0.125** | (2.05) |
| Opportunity Set | (H3: -) | -0.764*** | (-4.45) | -0.317*** | (-4.65) | -0.434*** | (-4.35) |
| Mkt Pressure | (H3: +) | 0.095*** | (5.06) | 0.047*** | (5.02) | 0.062*** | (5.12) |
| Book-Tax Difference | | 0.481 | (1.33) | 0.217 | (1.57) | 0.316 | (1.54) |
| FI | | 15.368*** | (11.57) | 5.156*** | (7.87) | 8.167*** | (10.18) |
| Intangible | | 0.301 | (1.47) | 0.045 | (0.45) | 0.179 | (1.38) |
| R&D | | 1.613* | (1.89) | 0.105 | (0.31) | 1.119** | (2.24) |
| iOWN | | -0.526*** | (-3.01) | -0.362*** | (-4.11) | -0.334*** | (-3.10) |
| Size | | 0.889*** | (15.94) | 0.390*** | (13.32) | 0.535*** | (15.63) |
| ROA | | -3.379*** | (-7.74) | -1.432*** | (-7.83) | -1.902*** | (-7.44) |
| Leverage | | 0.025 | (0.13) | -0.003 | (-0.03) | 0.026 | (0.21) |
| NOL | | -0.051 | (-0.53) | 0.022 | (0.47) | -0.015 | (-0.27) |
| ΔNOL | | -0.603 | (-1.59) | -0.264* | (-1.82) | -0.404* | (-1.90) |
| PPE | | -1.956*** | (-10.76) | -0.564*** | (-6.38) | -1.137*** | (-10.38) |
| EqInc | | 0.505* | (0.13) | -0.447 | (-0.27) | -0.356 | (-0.14) |
| B/M | | 0.344*** | (4.44) | 0.155*** | (4.07) | 0.208*** | (4.39) |
| Abs(DA) | | -0.222 | (-0.70) | 0.123 | (0.73) | -0.220 | (-1.09) |
| Big_{4/5} | | 0.187* | (1.87) | 0.038 | (0.87) | 0.057 | (0.86) |
| | | | | | | | |
| Include Industry Effect | | Yes | | Yes | | Yes | |
| Include Fixed Year Effect | | Yes | | Yes | | Yes | |
| Adj. $R^2$ | | 32.84% | | 24.62% | | 29.07% | |

Note: Variable descriptions are the same as outlined in Table 2. *Legitimacy* is a dummy variable which is set to one if a corporation's *CSR* scores is ranked as the top quartile within its industry for a given year (by 2-digit SIC) and 0 otherwise. All continuous variables are winsorized at top and bottom 1% of their cross-sectional distribution. *, **, *** denote statistical significance at 10%, 5%, and 1% levels, respectively (two-tailed).

Table 6 – H3: The Association between Investment Opportunity Set, Market Pressure and Tax Haven Activities (continued, N=15,127, year)
Panel B: Regression Results of Equation (3a)

$$\Pr(Haven_{i,t} \le j \,|X) = F\,(\kappa_j - \beta X) \quad j=1, 2, \ldots, J \tag{3a}$$

where $\beta X = \beta_1 CETR_{i,t} + \beta_2\,Adj.CFO\,Volatility_{i,t} + \beta_3 Mkt\,Power_{i,t}$
$+ \beta_4\,Legitimacy_{i,t} + \beta_5 Opportunity\,Set_{i,t} + \beta_6 Mkt\,Pressure_{i,t} + \beta_7 Size_{i,t}$
$+ \beta_8 ROA_{i,t} + \beta_9 Leverage_{i,t} + \beta_{10} NOL_{i,t} + \beta_{11}\Delta NOL_{i,t} + \beta_{12} FI_{i,t} + \beta_{13} PPE_{i,t}$
$+ \beta_{14} Intangibles_{i,t} + \beta_{15} EqInc_{i,t} + \beta_{16} R\&D_{i,t} + \beta_{17} B/M_{i,t} + \beta_{18}\,iOWN_{i,t}$
$+ \beta_{19}\,abs(DA)_{i,t} + \beta_{20}\,Big5_{i,t} + Industry\,Effect + Fixed\,Year\,Effect + \varepsilon_{i,t}\,.$

| | Pred. Sign | $Haven_{ALL}$ Coef. | z-stat | $Haven_{OECD}$ Coef. | z-stat | $Haven_{ABUSE}$ Coef. | z-stat |
|---|---|---|---|---|---|---|---|
| *Intercepts** | | | | | | | |
| CETR | (H1: +) | 0.226*** | (7.80) | 0.155*** | (4.61) | 0.196*** | (6.53) |
| Adj.CFO Volatility | (H1: -) | -3.977*** | (-12.06) | -2.225*** | (-5.47) | -3.075*** | (-9.09) |
| Mkt Power | (H2: +) | 0.076*** | (3.79) | 0.400*** | (4.91) | 0.099*** | (3.68) |
| Legitimacy | (H2: +) | 0.062* | (1.69) | 0.019 | (0.46) | -0.015 | (-0.39) |
| Opportunity Set | (H3: -) | -1.231*** | (-11.52) | -1.270*** | (-9.30) | -1.112*** | (-9.99) |
| Mkt Pressure | (H3: +) | 0.057*** | (4.35) | 0.079*** | (5.17) | 0.066*** | (4.85) |
| Book-Tax Difference | | 1.376*** | (5.26) | 1.793*** | (5.64) | 1.524*** | (5.60) |
| FI | | 12.982*** | (31.14) | 10.757*** | (23.07) | 11.164*** | (26.27) |
| Intangible | | 0.033 | (0.44) | -0.122 | (-1.38) | -0.018 | (-0.23) |
| R&D | | 4.604*** | (9.56) | 3.091*** | (5.19) | 4.309*** | (8.63) |
| iOWN | | -0.118* | (-1.85) | -0.221*** | (-2.94) | -0.145** | (-2.18) |
| Size | | 0.613*** | (44.11) | 0.637*** | (40.30) | 0.615*** | (42.72) |
| ROA | | -3.780*** | (-14.38) | -4.783*** | (-14.18) | -3.676*** | (-13.32) |
| Leverage | | 0.069 | (0.77) | 0.145 | (1.37) | -0.005 | (-0.05) |
| NOL | | -0.035 | (-1.03) | 0.049 | (1.24) | -0.021 | (-0.59) |
| ΔNOL | | -1.442*** | (-5.43) | -1.954*** | (-6.03) | -1.731*** | (-6.23) |
| PPE | | -2.245*** | (-25.95) | -1.543*** | (-15.64) | -2.081*** | (-23.02) |
| EqInc | | -0.487 | (-0.19) | -1.743 | (-0.54) | -1.667 | (-0.62) |
| B/M | | 0.277*** | (7.44) | 0.300*** | (7.19) | 0.267*** | (6.88) |
| Abs(DA) | | -0.498** | (-2.38) | -0.064 | (-0.26) | -0.606*** | (-2.75) |
| Big4/5 | | 0.341*** | (5.77) | 0.300*** | (3.92) | 0.284*** | (4.53) |
| | | | | | | | |
| Include Industry Effect | | Yes | | Yes | | Yes | |
| Include Fixed Year Effect | | Yes | | Yes | | Yes | |
| *Pseudo R²* | | 33.82% | | 24.78% | | 29.49% | |

Note: Variable descriptions are the same as outlined in Table 2. *Legitimacy* is a dummy variable which is set to one if a corporation's *CSR* scores is ranked as the top quartile within its industry for a given year (by 2-digit SIC) and 0 otherwise. Ordered logit intercepts are omitted for brevity. All continuous variables are winsorized at top and bottom 1% of their cross-sectional distribution. *, **, *** denote statistical significance at 10%, 5%, and 1% levels, respectively (two-tailed).