Foreign or Domestic Tax Havens: The Location Decision for Intangible Property by U.S. Firms

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Abstract

This study examines the characteristics associated with the decision by U.S. firms to transfer ownership of intangible property to subsidiaries located in foreign and domestic tax havens. It is well-documented that U.S. firms take advantage of transfer pricing strategies to shift profits from high-tax jurisdictions to low or zero-tax jurisdictions, both in the foreign and domestic tax arenas. We acknowledge the reality that U.S. firms have a choice between transferring intangible assets to subsidiaries operating in tax havens overseas or at home in Delaware. Using Exhibit 21 data on the geographic location of the subsidiaries of U.S. firms, we model the firm-level characteristics that are associated with the use of tax haven jurisdictions. We find that U.S. firms with the greatest operational wherewithal and higher tax incentives to engage in profit shifting are more likely to locate corporate subsidiaries in domestic or foreign tax havens. In addition, we find that U.S. firms with higher U.S. federal marginal tax rates, greater free cash flow, and more foreign operations are more likely to have a subsidiary located in a foreign haven country. We do not find results consistent with the predicted associations between firm-level characteristics and the use of domestic haven subsidiaries, in that firms with greater average state tax rates are less likely to use a Delaware tax haven. This study is of interest to academic researchers and tax policymakers as it provides the first attempt to investigate the choice U.S. firms have to locate intangible assets in both foreign and domestic tax havens.

1. Introduction

In this paper, we investigate the decision by U.S. firms to locate intangible assets in foreign tax havens or domestic tax havens.[1] Over the last several years, several studies have examined the U.S. income tax benefits that accrue to U.S. firms for operating in foreign tax havens (see Dyreng and Lindsey 2009, Klassen and Laplante 2012, and Markle 2014, among others). Likewise, other studies have explored the U.S. state income tax savings and other competitive advantages derived by U.S. firms operating in Delaware (see Dyreng et al. 2011 and Daines 2001, among others). The purpose of this study is to analyze the economic forces associated with the location decisions of U.S. firms to transfer intangible property to subsidiaries located in foreign tax havens such as the Cayman Islands and domestic tax havens in Delaware.

While recent academic studies have investigated the tax savings involved with the use of foreign and domestic tax havens in isolation, to the best of our knowledge this study is the first to analyze the characteristics associated with a firm's choice between foreign tax havens and domestic tax havens. Specifically, U.S. firms can select whether to transfer intangible assets to subsidiaries located in Delaware and enjoy permanent state income tax savings, or to transfer intangible assets to subsidiaries located in foreign tax havens where the federal income tax savings are potentially much larger, but only temporary. The federal income tax savings is temporary because U.S. firms pay a residual tax to the U.S. government based on the difference between the federal corporate tax rate and the foreign tax rate when foreign profits are repatriated to the United States. No such requirement exists for state income taxes. Given these asymmetries in the state and federal income tax arenas, we examine the economic tensions at

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[1] Foreign tax havens are identified as in Dyreng and Lindsey (2009), and are countries listed as a tax haven by at least three of the following four sources: (1) Organization for Economic Cooperation and Development (OECD), (2) the U.S. Stop Tax Havens Abuse Act, (3) The International Monetary Fund (IMF) and (4) the Tax Research Organization. Examples of foreign tax haven countries include Bermuda, the Cayman Islands, and Luxembourg. Delaware is the domestic tax haven, as in Dyreng et al. (2013).

play when U.S. firms choose whether to transfer intangible assets to subsidiaries located in foreign tax havens or domestic tax havens.[2]

The mechanism that triggers the tax savings generated from operating in tax havens is profit shifting. In order to realize tax savings, profits must be shifted out of a high-tax jurisdiction to a low or zero-tax jurisdiction. Given their portable nature, intangible assets are ideally suited for shifting profits between tax jurisdictions because firms can generally locate intangible assets in a desirable U.S. state or foreign country with a simple legal transfer, even if the asset is created and developed elsewhere (Desai et al., 2006, Dischinger and Riedel, 2011, Dyreng et al., 2013, De Simone and Stomberg, 2013). Tangible fixed assets are a less flexible source of capital for shifting profits, given the underlying assets generally cannot easily be relocated after they are placed in service. Typically, U.S. firms use intangible assets to shift profits via royalty arrangements, intercompany debt, and cost-sharing agreements. One major premise of this study is that Delaware and foreign tax haven countries are substitute locations for intangible assets.

Shifting profits into foreign and domestic tax havens to generate tax savings requires U.S. firms to have the wherewithal to shift profits, incremental to owning intangible assets. First, U.S. firms must be profitable to shift taxable income. The more profitable the U.S. firm, the more likely the firm is to incur the costs involved in transferring intangible assets to subsidiaries located in foreign and domestic tax havens to take advantage of lower tax rates. Second, U.S. firms that operate in certain industries, such as high technology and pharmaceuticals, are more likely to own valuable intangible assets that produce greater returns, thereby increasing the magnitude of the tax savings involved in shifting profits from high-tax to low-tax jurisdictions.

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[2] While U.S. firms could also save taxes by operating in states that do not impose a corporate income tax (e.g., Nevada, South Dakota, Wyoming, and Washington), we follow Dyreng et al. (2013) and focus solely on Delaware because of the abnormally high amount of business activity in the state of Delaware. Untabulated results show there is little activity in states that do not levy a corporate income tax by firms that are not already operating in Delaware.

Lastly, U.S. firms have greater incentives to shift profits when these same firms confront relatively higher marginal tax rates in non-haven state or foreign tax jurisdictions.

U.S. firms face increased scrutiny by government regulators and the popular press for the use of foreign and domestic tax havens. In particular, government officials express outrage that business profits are not taxed where the economic activities underlying business profits are created. Instead, firms shift profits to tax havens, even though the tax haven state or foreign country has little or no impact on the underlying good or service generating the profit. For example, with respect to foreign tax havens, a 2014 *Bloomberg* article revealed that "U.S. multinational companies reported earning 43 percent of their 2008 overseas profits in Bermuda, Ireland, Luxembourg, the Netherlands and Switzerland, more than five times the share of workers and investment they have in those jurisdictions, according to a 2013 Congressional Research Service report.[3]"

Furthermore, after U.S. firms shift profits into foreign tax havens from other high-tax foreign jurisdictions to save foreign taxes, the profits often remain overseas in order to avoid the residual U.S. tax incurred when foreign profits are repatriated to the United States. The foreign profits that U.S. firms "park" overseas are so substantial that President Obama proposes in his fiscal 2016 budget that the estimated almost $2 trillion in foreign profits currently parked overseas be subject to a one-time U.S. tax of 14 percent, "(generating) about $238 billion, by White House calculations" to fund infrastructure projects.[4] In the state income tax arena, U.S. firms save state income taxes by shifting profits out of high-tax states into the domestic tax haven of Delaware, where income related to intangible assets is tax exempt. According to *The New York Times*, "officials in other states complain that Delaware's cozy corporate setup robs

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[3] See http://www.bloomberg.com/news/articles/2014-03-12/cash-abroad-rises-206-billion-as-apple-to-ibm-avoid-tax.
[4] See http://www.foxnews.com/politics/2015/02/02/in-new-budget-obama-to-proposed-14-percent-tax-on-overseas-corporate-profits-to/.

their states of billions of tax dollars."[5] Anecdotal reports by regulatory officials and the business press, and prior academic research (e.g., Desai et al., 2006, Dyreng et al. 2013) suggests widespread use of tax savings strategies involving foreign and domestic tax havens.

We use Exhibit 21data available from public SEC filings to identify whether U.S. firms operate in foreign or domestic (Delaware) tax havens. We hypothesize that firms with the operational wherewithal and tax incentives to take advantage of tax havens are more likely to do so. Using a logistic model, we find that U.S. firms with a subsidiary operating in at least one tax haven jurisdiction have characteristics associated with owning intangible assets eligible for profit shifting, such as higher research and development expenditures larger gross profit percentages, and operations in pharmaceutical and high-technology industries. We also find that U.S. firms with subsidiaries located in tax havens have higher average state statutory tax rates and marginal U.S. federal tax rates relative to other U.S. firms that do not operate in a foreign or domestic tax haven location. The results are consistent with U.S. firms with the greatest wherewithal to shift profits and save state and U.S. income taxes choosing to locate corporate subsidiaries in tax haven jurisdictions.

Next, we investigate the operational characteristics of U.S. firms operating in foreign tax havens. We hypothesize that in addition to the influences from operational wherewithal and tax incentives, firms with higher U.S. federal marginal tax rates, greater free cash flow, and more foreign operations are more likely to have a subsidiary located in a foreign haven jurisdiction. Using a logistic model, we find that relative to U.S. firms that do not operate in a foreign tax haven, firms with foreign tax haven subsidiaries invest more heavily in research and development, enjoy higher gross profit percentages, operate in industries where firms are more likely to own intangible assets, generate a higher proportion of revenues from foreign sales, have

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[5] http://www.nytimes.com/2012/07/01/business/how-delaware-thrives-as-a-corporate-tax-haven.html?pagewanted=all&_r=0

higher levels of free cash flow, and face higher marginal tax rates. This evidence suggests that

firms that have the wherewithal and tax incentives to shift profits to lower-tax foreign

jurisdictions are more likely to incorporate subsidiaries in foreign tax haven countries. In

addition, the positive association between foreign haven activity and higher levels of free cash

flow is consistent with these firms not needing to repatriate cash to the United States which

would incur a residual U.S. tax. Average state statutory tax rates are not a significant explanatory

factor, consistent with state tax incentives not driving a firm's decision to use a foreign tax

haven. Advertising expenses, another proxy for intangible assets, are not associated with the

choice to use a foreign tax haven.

Finally, we analyze the characteristics of U.S. firms with at least one corporate subsidiary

located in Delaware. We hypothesize that in addition to operational wherewithal and tax

incentives, firms with higher state tax rates and firms that operate in states that support the tax

savings strategy of shifting profits to Delaware are more likely to use domestic tax havens. We

use a logistic regression model to compare factors associated with firms that choose to operate

subsidiaries in Delaware compared with U.S. firms that do not. The results are largely in contrast

with our expectations. We find limited support for a positive association between greater

presence in states that permit the Delaware tax savings strategy and the use of a Delaware

corporate subsidiary. The results also indicate that firms with higher state tax rates are less likely

to have subsidiaries located in Delaware. Furthermore, the variables that represent the

operational wherewithal to transfer intangible assets are also negatively associated with domestic

tax haven subsidiaries. The only characteristic that supports our expectation with respect to

domestic tax havens is free cash flow, where the results indicate that firms with more free cash

flow are less likely to have a subsidiary operating in Delaware. This is consistent with U.S. firms

with more flexibility to leave foreign profits overseas opting not to shift profits to the domestic

tax haven of Delaware. Overall, the puzzling results from the domestic tax haven analysis potentially reflect the confounding issue that U.S. firms operate in Delaware for both tax and nontax reasons, which affects both our domestic tax haven setting and research design.

This study is of interest to academic researchers and tax policymakers as it provides the first attempt to investigate the choice U.S. firms have to locate intangible assets in both foreign and domestic tax havens. Other studies have examined foreign tax havens and domestic tax havens independently. We acknowledge the reality that U.S. firms choose whether to transfer intangible assets to subsidiaries operating in tax havens overseas or at home in Delaware, and we investigate the economic forces that drive this decision. Our study also sheds light on how U.S. tax policy drives investment out of the United States, and ironically, how Delaware corporate state tax law serves a countervailing force that encourages U.S. investment and slows the loss of intangible assets investment to foreign jurisdictions.

The paper proceeds as follows. Section two provides background information on state and U.S. income tax and develops the hypotheses. Section three details the research design. Section four describes the data, sample selection, and descriptive statistics. Section five discusses the empirical results, and section six concludes.

2. Background and Hypothesis Development

2.1 Differences Between U.S. State and U.S. Federal Taxation

The U.S. states and the U.S. federal government use two different approaches to solve a similar problem of potentially taxing the same corporate profits multiple times. Based on coordination among the state tax authorities, corporations are generally required to allocate a proportion of total profits to each state tax jurisdiction based on an apportionment formula that includes sales, property, and/or payroll factors in a state relative to the total sales, property, and

payroll in all states. Each state then applies a statutory corporate tax rate on its share of corporate profits.

Specific to our setting, the Delaware corporate statute exempts from taxation income derived from intangible assets. Given the Delaware statute, numerous U.S. firms have established passive investment companies (PICs) in Delaware for the transfer of income-generating intangible assets. Benefiting from tax laws in other accommodating states, the U.S. firm's non-Delaware operating subsidiaries make tax-deductible payments to the Delaware PIC for the right to use the intangible asset.[6] Thus, the Delaware statute provides the means to shift profits because the U.S. firm takes a tax deduction in the high-tax state and the corresponding income related to the deduction is exempt from taxation in Delaware. The resulting state income tax savings equals the product of the amount of profits shifted and the difference between the high-tax state rate and the Delaware state tax rate of zero percent. Although the state tax savings from using a domestic tax haven in Delaware are likely smaller than shifting profits into a foreign tax haven due to the relatively low state rates compared to the U.S. federal rate, a distinct advantage of the Delaware PIC strategy is that the tax savings are permanent.[7]

In contrast to the U.S. state tax structure that is based on profit allocation, the U.S. federal government imposes taxes on the worldwide profits of U.S. multinational firms. Given that the U.S. operates on a worldwide tax basis, multiple tax jurisdictions (i.e., foreign countries and the U.S.) impose taxes on the same corporate profits. To alleviate profits being taxed more than once, U.S. tax law provides U.S. firms a foreign tax credit to reduce the U.S. tax owed on worldwide profits by the taxes paid on those same profits in foreign jurisdictions, rendering a

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[6] The Delaware corporate statute Section 1902 specifically defines intercompany debt as an intangible asset. We incorporate the same broad definition of intangible assets when referring to intangible assets in this study. Consult Dyreng et al. (2013) for a more detailed description of the Delaware PIC state tax avoidance strategy.

[7] U.S. federal corporate income tax is imposed at graduated rates from 15% to 35%. Tax rates imposed at the state and level vary widely by jurisdiction, from under 1% to 12%. These rates are based on 2013 data, and vary each year over the duration of the sample period.

residual U.S. tax liability for the difference between foreign tax rates and the U.S. statutory rate.[8] Furthermore, under the U.S. worldwide tax system, foreign profits retained in foreign subsidiaries are not subject to any residual U.S. tax until the foreign subsidiary repatriates the foreign profits as a dividend to a U.S. entity. While many U.S. firms "park" large sums of foreign profits overseas to avoid the residual U.S. tax, these foreign profits are taxed in the U.S. when the foreign profits are repatriated to the U.S.[9]

Instead of transferring an intangible asset to a PIC subsidiary located in Delaware, a U.S. firm could choose to transfer the same intangible asset to a foreign subsidiary operating in a foreign tax haven such as the Cayman Islands. Foreign tax havens generally impose a low-tax rate, or no tax at all, on corporate profits. Similar to the Delaware strategy, other subsidiaries of the same U.S. firm that are operating in high-tax countries make tax-deductible payments to the foreign tax haven entity for the right to use the intangible asset. The immediate tax savings generated from profit shifting in the foreign context equals the product of the amount of the profits shifted and the difference between the rate in the high-tax country and the rate in the foreign tax haven country. Because the highest U.S. statutory tax rate is 35 percent, the potential tax savings from the transfer of an intangible asset to a subsidiary located in a foreign tax haven is greater than a domestic tax haven. However, any U.S. profits shifted from high-tax countries to foreign tax havens generate tax savings that is only temporary until the residual U.S. tax is levied when the foreign profits are repatriated as a dividend to the U.S. The tradeoff between relatively greater foreign tax savings that are temporary and relatively smaller state tax savings

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[8] The foreign tax credit equals the foreign taxes paid on the repatriated profits capped at the U.S. tax rate. Details regarding the U.S. foreign tax credit are outlined in Section 901 of the Internal Revenue Code.
[9] See http://www.bloomberg.com/news/articles/2014-03-12/cash-abroad-rises-206-billion-as-apple-to-ibm-avoid-tax.

that are permanent, which are generated from the same type of organizational structure involving the transfer of an intangible asset to a corporate subsidiary, is a major component of this study.

2.2 Hypothesis Development

More is required than a favorable tax rate environment for U.S. firms to generate tax savings from foreign and domestic tax havens. U.S. firms must also have the operational wherewithal to shift profits out of high-tax jurisdictions into tax haven jurisdictions to leverage the benefits derived from lower tax rates. As a basic requirement, U.S. firms must have taxable profits for the use of subsidiaries operating in lower tax rate tax haven jurisdictions to yield any tax savings. The more profitable the firm, the greater the benefit from shifting profits into tax havens. In addition to profitability, firms need a mechanism to shift profits out of high-tax environments into tax haven jurisdictions. Profit shifting is often accomplished through a subsidiary located in a tax haven jurisdiction that owns an intangible asset, where the firm's other operating subsidiaries within its corporate ownership structure make tax-deductible payments to the tax haven entity for the use of the intangible asset. The use of an intangible asset affords the U.S. firm substantial flexibility in the location of its tax haven subsidiary, either before or after the intangible asset is developed and placed in service. Consistent with this, Dischinger and Riedel (2011) analyze proprietary affiliate-level data and find that affiliates located in low-tax rate countries hold significantly more intangible assets relative to affiliates located in higher-tax rate countries. Similarly, Dyreng et al. (2013) find that Delaware subsidiaries own a disproportionately greater amount of intangible assets relative to subsidiaries operating in other states. Finally, U.S. firms operating in certain industries, such as pharmaceuticals and technological services, are more prone to have valuable intangible assets that command higher returns, thereby generating more profits eligible for shifting between tax jurisdictions (Desai et al., 2006, De Simone and Stromberg, 2013). Thus, our first hypothesis is:

H$_{1a}$: *U.S. firms with the operational wherewithal to shift profits use foreign and domestic tax havens.*

When firms have the operational wherewithal to shift profits, the value of profit shifting is a function of the difference in tax rates between high-tax jurisdictions and tax haven jurisdictions. The higher the tax rates in the non-haven jurisdictions, the greater the incentive to shift profits (Grubert 2003). Thus, we examine the accompanying hypothesis:

H$_{1b}$: *U.S. firms with tax rate incentives to shift profits use foreign and domestic tax havens.*

Firms with both the operational wherewithal and tax rate incentives to shift profits using an organizational structure that incorporates the transfer of an intangible asset to an operating subsidiary have a choice whether to incorporate the subsidiary in a domestic tax haven or a foreign tax haven. Focusing on tax rate incentives, shifting profits from high-tax jurisdictions to foreign tax havens potentially yields greater tax benefits because U.S. federal corporate tax rates are higher than state corporate tax rates. However, the federal tax savings is only temporary until the foreign profits are repatriated to the U.S. Repatriating foreign profits from a foreign tax haven immediately to the U.S. firm would yield a negligible tax benefit. As a result, firms face a trade off between a greater tax benefit due to the higher federal corporate tax rate, and the reality that the tax benefit is only temporary until the foreign profits are repatriated to the U.S. For a given U.S. firm, the greater the U.S. federal corporate tax rate, the greater the benefit from choosing to locate its corporate subsidiary in a foreign tax haven. Thus, our second hypothesis is:

H$_2$: *U.S. firms with higher U.S. marginal tax rates find foreign tax havens more attractive.*

As an alternative to foreign tax havens, U.S. firms may prefer domestic tax havens to generate state income tax savings. While state income tax rates are generally lower than the federal U.S. tax rate, any state income tax savings generated from shifting profits from high-tax

states into a domestic tax haven is permanent. Thus, for a given U.S. firm, the greater the state corporate tax rate, the greater the benefit from choosing to locate its corporate subsidiary in a domestic tax haven. Our third hypothesis is:

H_3: *U.S. firms with higher state marginal tax rates find domestic tax havens more attractive.*

In addition to tax rate incentives, cash needs are also likely to map into a U.S. firm's decision whether to locate its subsidiary in a foreign or domestic tax haven. If a U.S. firm has demands for cash beyond what is generated through its domestic operations, a foreign haven is less desirable since a residual U.S. tax liability is generated when foreign profits are repatriated to the U.S., dampening the tax savings from the tax haven strategy. Rather, a firm with strong cash needs in the U.S. will likely find a domestic tax haven more desirable because its cash flow remains in the U.S. and the state income tax savings from a domestic haven strategy are permanent. On the other hand, if a U.S. firm has sufficient cash holdings to fund domestic capital expenditures, domestic dividends, and U.S. growth prospects, then foreign tax havens may be more attractive because foreign profits can remain invested overseas without triggering a residual U.S. tax from repatriation of foreign profits. Our fourth hypothesis is:

H_4: *U.S. firms with greater free cash flow will find foreign tax havens more attractive.*

The use of a foreign or domestic tax haven may also be influenced by the geographic location of a U.S. firm's operations. A U.S. firm with extensive foreign operations has already made a significant investment to conduct business in foreign jurisdictions with different laws, cultures, languages, customers, vendors, and so forth. In the same manner, a U.S. firm with a sizable international presence may find it more convenient from an organizational standpoint to locate its operating subsidiaries in foreign tax haven jurisdictions. Consistent with this, Desai et al. (2006) find evidence that multinational firms that are more active abroad operate in more tax

haven countries. In contrast, a U.S. firm that only operates domestically and has no foreign operations, is less likely to invest in an organizational structure that involves establishing a new corporate subsidiary in a foreign tax haven. Accordingly, our fifth hypothesis is:

H$_5$: *U.S. firms with a greater proportion of foreign operations will find foreign tax havens more attractive.*

Unlike the foreign tax haven setting, generating tax savings from a domestic tax haven also requires a firm to have operations in accommodating states that allow a tax deduction for payments made to the Delaware subsidiary for the use of the intangible asset. Specifically, U.S. firms must have operations in states that permit the Delaware tax haven and the subsidiary operating in a high-tax state to file separate tax returns. Otherwise, the tax savings from organizing a subsidiary in the domestic tax haven vanishes. The greater the U.S. firm footprint in these accommodating separate filing states, the more valuable and appealing the domestic tax haven to the U.S. firm. Thus, our sixth hypothesis is:

H$_6$: *U.S. firms with greater operations in separate state tax states will find domestic tax havens more attractive.*

Despite the potential economic incentives for U.S. firms to transfer intangible assets to subsidiaries located in tax havens, we may fail to find empirical evidence that supports our hypotheses for at least two primary reasons. First, while there clearly are tax incentives to operate in the domestic tax haven of Delaware, there are also well-documented legal and governance benefits from incorporating in Delaware (Daines 2001). Distinguishing the tax benefits from the other legal and governance benefits could prove to be empirically difficult. Second, certain data limitations prevent us from testing some of our hypotheses as precisely as we would like. For example, we only have foreign data on sales (from segment data), pre-tax book income, tax expense, and net income. We are not able to identify the amount of intangible

assets, gross profit, and free cash flow that is specifically related to domestic and foreign operations. Thus, we may fail to reject the null hypotheses simply from insufficient power in our empirical tests due to data limitations.

3. Research Design

(i) Characteristics Associated with Subsidiaries Located in Tax Havens

We use the following logistic regression model to investigate the association between firm-level characteristics and subsidiary operations located in tax haven jurisdictions:

$$ANYHAVEN_{it} = \alpha_1 + \beta_1 ADVEXP_{it} + \beta_2 RDEXP_{it} + \beta_3 PCTGP_{it} + \beta_4 INDUSTRY_{it} + \beta_5 MTR_{it} +$$
$$\beta_6 AVGSTRATE_{it} + \beta_7 FCF_{it} + \beta_8 MTBRATIO_{it} + \beta_9 SIZE_{it} + \varepsilon_{it} \qquad (1)$$

The dependent variable, *ANYHAVEN*, is an indicator variable equal to one if Exhibit 21 reports at least one subsidiary located in a tax haven jurisdiction (i.e., either a foreign tax haven country or the state of Delaware), and is coded zero otherwise. The first four variables, *ADVEXP*, *RDEXP*, *PCTGP*, and *INDUSTRY*, identify firm characteristics that indicate the operational wherewithal to implement long-term sustainable tax avoidance strategies involving the transfer of an intangible asset (Desai et al., 2006; Dyreng et al., 2013; De Simone and Stomberg, 2013). *ADVEXP* is defined as advertising expense, scaled by total assets, *RDEXP* is research and development (R&D) expense, scaled by total assets, *PCTGP* is the ratio of gross profit to total sales, and *INDUSTRY* is an indicator variable equal to one if the firm operates in one of the following SIC codes: 283, 357, 367, 737, 738, and coded zero otherwise.[10] Firms with higher R&D (*RDEXP*), higher advertising expense (*ADVEXP*), or that operate in the industries indicated by *INDUSTRY* likely have significant amounts of intellectual property and intangible

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[10] Observations identified with *INDUSTRY* equal to one operate in the following industries (based on SIC code classifications): Pharmaceuticals, Healthcare, Medical Equipment and Pharmaceutical Products, (SIC 283), Computers and Business Equipment (SIC 357, 367, 737), and Personal and Business Services (SIC 783). These industries are identified by Dyreng et al. (2013) and De Simone and Stromberg (2013) as functional for tax strategies involving profit shifting across tax jurisdictions.

assets underlying their business activities, which are relatively portable assets that can be easily transferred to a subsidiary located in a tax haven jurisdiction. *PCTGP* is included as a measure of profitability, as more profitable firms are likely to engage in profit-shifting tax planning opportunities across different tax jurisdictions. If firms with operational characteristics consistent with the business wherewithal to utilize tax havens (hypothesis 1a), we expect positive coefficients on *RDEXP*, *ADVEXP*, *PCTGP*, and *INDUSTRY*.

The variables *MTR* and *AVGSTRATE* account for tax incentives associated with profit shifting (Grubert 2003). *MTR* is the firm's simulated marginal federal corporate income tax rate based on Graham (1996), and *AVGSTRATE* is defined as the weighted-average statutory corporate tax rate for states in which the firm reports subsidiary locations in Exhibit 21, calculated as in Dyreng et al. (2013). If firms with higher marginal tax rates are more inclined to locate subsidiaries in tax havens, we expect positive coefficients on *MTR* and *AVGSTRATE* (hypothesis 1b).[11]

We include three variables to control for general firm characteristics that may have an effect on subsidiary location decisions, as well as the independent variables of interest (e.g., the proxies for operational wherewithal and tax incentives). *FCF* is a measure of the firm's free cash flow, and is defined as the firm's cash flow from operations, scaled by total assets. *MTBRATIO* is included to control for growth, and is defined as the ratio of the firm's market value to book value. *SIZE* is a control for firm size, and is defined as the firm's total assets. To the extent that firms that have more free cash flow, are larger, or faster-growing have greater incentives or resources available to utilize more sophisticated tax planning techniques (Rego, 2003) such as

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[11] We use the marginal corporate federal tax rate (*MTR*) as a measure of the firm's tax incentives for operating subsidiaries in tax havens because this rate captures the firm's marginal cost of an additional dollar of U.S. taxable income, regardless of where the income is generated. Consistent with other papers that examine multinational profit shifting, such as Klassen and Laplante (2012) and Dryeng et al. (2008), we assert that financial statement foreign tax expense does not adequately measure a firm's incentives for multinational profit shifting.

transferring intangible assets to subsidiaries located in tax haven jurisdictions, we expect positive coefficients on *FCF*, *MTBRATIO*, and *SIZE*.[12] Detailed definitions of all of the regression variables are provided in the Appendix.

(ii) Tax Haven Subsidiary Location: Foreign and Domestic

We use the following logistic regression model to investigate the association between firm-level characteristics and subsidiary operations located in foreign tax haven jurisdictions:

$$FOR\_HAVEN_{it} = \alpha_1 + \beta_1\, ADVEXP_{it} + \beta_2\, RDEXP_{it} + \beta_3\, PCTGP_{it} + \beta_4 INDUSTRY_{it} +$$

$$\beta_5\, FORSALESRATIO_{it} + \beta_6\, STATE\_RATIO_{it} + \beta_7\, MTR_{it} + \beta_8\, AVGSTRATE_{it} +$$

$$\beta_9\, FCF_{it} + \beta_{10}\, MTBRATIO_{it} + \beta_{11}\, SIZE_{it} + \varepsilon_{it} \tag{2}$$

The dependent variable, *FOR_HAVEN*, is an indicator variable equal to one if Exhibit 21 reports at least one subsidiary located in a foreign tax haven, and is coded zero otherwise. We include the explanatory variables that account for the firm's wherewithal to locate subsidiary operations in a tax haven (*ADVEXP, RDEXP, PCTGP*, and *INDUSTRY*), or tax incentives to engage in profit shifting between tax jurisdictions (*MTR* and *AVGSTRATE*). We include the control variables *MTBRATIO* and *SIZE* to account for the effects of growth and size on subsidiary location decisions. Under hypothesis 2, we expect a significantly positive coefficient on *MTR*, which is consistent with firms that have higher marginal federal corporate tax rates finding foreign tax havens more attractive. Under hypothesis 4, we conjecture that firms with greater free cash flow are more likely to use foreign tax havens, which predicts a significantly positive coefficient on *FCF*.

We add two new variables to equation (2), *FORSALESRATIO* and *STATE_RATIO*, to

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[12] We include the variable *FCF* as a control variable in equation (1), where the dependent variable is general tax haven activity. Later, we conduct a different empirical test (under equation (2)) to test for a significant directional association between *FCF* and foreign haven activity (hypothesis 4).

capture jurisdiction-specific incentives that are likely to affect subsidiary locations. The foreign

jurisdiction factor is *FORSALESRATIO*, and is defined as the ratio of foreign sales to total sales,

where foreign sales are reported in the firm's geographic segment disclosures.

FORSALESRATIO measures the relative strength of a firm's foreign operations. As predicted

under hypothesis 5, if firms with a greater footprint in foreign markets have larger incentives or

more practical opportunities to transfer intangible assets to subsidiaries located in foreign tax

havens, we expect a positive coefficient on *FORSALESRATIO*. The state jurisdiction factor is

STATE_RATIO, and is defined as the ratio of the number of subsidiaries in separate filing states

to the total number of domestic subsidiaries, as disclosed in Exhibit 21. *STATE_RATIO* measures

a firm's advantage in utilizing the Delaware PIC strategy by conducting operations in states that

allow subsidiaries to file separate tax returns. Under hypothesis 6, if firms with state tax planning

opportunities choose to transfer ownership of intangible assets to Delaware subsidiaries rather

than to subsidiaries located in foreign tax havens, we expect a negative or insignificant

coefficient on *STATE_RATIO*.

We use a similar logistic regression model to investigate the association between firm-

level characteristics and subsidiary operations located in domestic tax havens:

$$STATE\_HAVEN_{it} = \alpha_1 + \beta_1 ADVEXP_{it} + \beta_2 RDEXP_{it} + \beta_3 PCTGP_{it} + \beta_4 INDUSTRY_{it} +$$

$$\beta_5 FORSALESRATIO_{it} + \beta_6 STATE\_RATIO_{it} + \beta_7 MTR_{it} + \beta_8 AVGSTRATE_{it} +$$

$$\beta_9 FCF_{it} + \beta_{10} MTBRATIO_{it} + \beta_{11} SIZE_{it} + \varepsilon_{it} \quad (3)$$

The dependent variable, *STATE_HAVEN*, is an indicator variable equal to one if Exhibit

21 reports at least one subsidiary located in Delaware, and is coded zero otherwise. All other

explanatory variables are as previously defined. Under hypothesis 3, we expect a positive

coefficient on *AVGSTRATE* if firms with higher state marginal tax rates find domestic tax havens

more attractive. We expect a negative or insignificant coefficient on *FORSALESRATIO* if firms with a greater percentage of foreign sales are less likely to incorporate a tax planning strategy that involves a Delaware subsidiary because their operational structures and/or incentives make the use of a foreign tax haven subsidiary more attractive (hypothesis 5). Under hypothesis 6, we expect a positive coefficient on *STATE_RATIO* if firms with a higher proportion of subsidiaries in separate filing states have the wherewithal to utilize a tax planning strategy that involves a Delaware subsidiary.[13]

(iii) Alternative Definitions of Foreign and Domestic Tax Haven Subsidiary Locations

In a second set of tests, we replace the dependent variables in equations (2) and (3) with alternative definitions of firms with subsidiaries located in foreign and state tax havens. We replace the indicator variables *FOR_HAVEN* and *STATE_HAVEN* in equation (2) and (3) with *FOR_Q4* and *STATE_Q4*, respectively, where *FOR_Q4* and *STATE_Q4* represent firms with subsidiaries operating in tax haven jurisdictions in the top quartile of the havens sample. Specifically, *FOR_Q4* (*STATE_Q4*) is defined as an indicator variable equal to one if the number of subsidiaries located in foreign (state) tax havens is greater than three (ten). The alternative tax haven measures should capture firms with relatively greater presence in tax havens, and thus identify more sophisticated operational structures designed to facilitate tax savings through profit shifting. The variable *STATE_Q4* is particularly important in the context of examining domestic subsidiary locations, as firms often incorporate subsidiaries in Delaware for legal reasons, independent of tax considerations. Redefining the dependent variable based on more significant subsidiary presence in Delaware (i.e., *STATE_Q4*) should mitigate potential measurement error in *STATE_HAVEN*.

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[13] The ex-ante expected benefits to a Delaware PIC strategy for firms with operations in a large proportion of separate filing states are distinct from incentives arising from have a high average state tax rate. Therefore, we include *STATE_RATIO* and *AVGSTRATE* as separate explanatory variables in equation (2).

4. Sample

(i) Data and Sample Selection

Our sample consists of U.S. incorporated firms that report the geographic locations of significant subsidiaries located across the U.S. and around the world in Exhibit 21 of Form 10-K. Table 1, Panel A reports information regarding data collection for the sample. We obtain 50,151 firm-year observations with Exhibit 21 data reported between 1995 and 2009 (Dyreng et al., 2013), and match this data with information from Compustat needed to calculate the regression variables.[14] After collecting information on corporate marginal tax rates from Graham's (1996) database, we have 15,483 observations in the Exhibit 21 sample.[15] We remove observations without a subsidiary located in a domestic (Delaware) or foreign tax haven to form the havens sample, which has 13,040 firm-year observations. Panel B of table 1 reports the distribution of firm-year observations across the sample period. The statistics reported in panel B indicate that the observations in the Exhibit 21 sample and the havens sample are similarly distributed across the sample period.

(ii) Descriptive Statistics

Table 2 reports descriptive statistics on the tax haven operations for the sample, as well as information about the regression variables. As reported in Panel A of Table 2, 84.2% of firms that report the geographic location of significant operating subsidiaries in Exhibit 21 have a subsidiary located in either a foreign or domestic tax haven (mean *ANYHAVEN* = 0.842), where 50.4% of observations have subsidiaries in foreign tax haven countries (mean *FOR_HAVEN* =

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[14] The sample begins in 1995 because it is the first year that firms were required to report geographic subsidiary locations in Exhibit 21. The sample period ends in 2009 because this is the last year that Exhibit 21 information is available in Dryeng et al.'s (2013) database. A growing trend in recent years has been for multinational corporations to reduce significantly the list of subsidiaries reported in Exhibit 21 (Donohoe et al. 2012), therefore Exhibit 21 data for years beyond 2009 is not likely to accurately represent subsidiary locations.
[15] Simulated marginal tax rates, based on the methodology of Graham (1996), are available at: https://faculty.fuqua.duke.edu/~jgraham/taxform.html

0.504) and 76.9% have subsidiaries in Delaware (mean *STATE_HAVEN* = 0.769). Most firms report more than one tax haven subsidiary, with an average (median) number of Delaware subsidiaries *(#DE_SUBS)* equal to of 8.4 (3.0), and an average (median) number of foreign tax haven subsidiaries *(#FOR_SUBS)* of 1.7 (1.0). The average marginal federal corporate tax rate is 29.6% (mean *MTR* = 0.296) and the average state tax rate is 6.3% (mean *AVGSTRATE* = 0.063). The sample firms seem to conduct the majority of their business operations in the U.S., as the average proportion of domestic sales is 79.4% (mean *DOMSALESRATIO* = 0.794), which is much larger than the average proportion of foreign sales of 9.2% (mean *FORSALESRATIO* = 0.092).

Panel B of Table 2 reports descriptive statistics for the havens sample, which is comprised of firms that operate at least one tax haven subsidiary. Within the firms that have at least one foreign haven subsidiary (i.e., *FOR_HAVEN* = 1), the average (median) number of foreign haven subsidiaries is 3.4 (2.0). For the firms that have at least one state haven subsidiary (i.e. *STATE_HAVEN* = 1), the average (median) number of state haven subsidiaries is 10.8 (5.0), though these firms also report activity in foreign haven subsidiaries (mean *#FORSUBS* = 2.03). Relative to the set of firms that have at least one domestic haven subsidiary, firms that have at least one foreign haven have a larger percentage of foreign sales (mean *FORSALESRATIO* = 0.138, relative to mean *FORSALESRATIO* = 0.101 for the firms with domestic haven subsidiaries), have greater research and development expenses (mean *RDEXP* = 0.038 relative to mean *RDEXP* = 0.032), and are larger (mean *SIZE* = $6.5 billion in assets, relative to mean *SIZE* = $4.9 billion in assets). The mean and median values of both the federal marginal tax rate (*MTR*) and the average state tax rate (*AVGSTRATE*) appear similar across firms that report at least one foreign and domestic haven subsidiary.

Table 3 reports correlation coefficients for the regression variables. The univariate

correlations between the operational wherewithal variables *RDEXP*, *PCTGP*, and *INDUSTRY*

and the haven variables *ANYHAVEN* and *FOR_HAVEN* are significantly positive. The tax

incentive variables *MTR* and *AVGSTRATE* are also significantly positively correlated with

ANYHAVEN, *FOR_HAVEN*, and *STATE_HAVEN*. These correlations are consistent with firms

that have the means and tax incentives to utilize profit-shifting strategies choosing to locate

subsidiaries in tax haven jurisdictions.

5. Empirical Results

Table 4 reports results from equation (1), which models the characteristics of firms that

have subsidiaries located in tax havens. As predicated under hypothesis 1a, the coefficients on

the variables *RDEXP*, *PCTGP*, and *INDUSTRY* are significantly positive, which suggests that

firms with the operational wherewithal to transfer intangible assets are more likely to have

subsidiaries located in tax haven countries. The coefficient on ADVEXP is not significant, which

suggests that firms with larger advertising expenses are not more likely to have a tax haven

subsidiary. The coefficients on *MTR* and *AVGSTRATE* are also significantly positive, which

suggests that U.S. firms with tax rate incentives to shift profits use foreign and domestic tax

havens, and provides support for hypothesis 1b. The coefficient on *SIZE* is also positive, which is

consistent with large firms being more likely to incorporate subsidiaries in tax haven countries.

Table 5 reports results from equation (2), which models the association between firm

characteristics and subsidiary locations in foreign tax haven countries. The first column reports

results when the dependent variable is *FOR_HAVEN*. The coefficient on *MTR* is significantly

positive, which provides support for hypothesis 2 and suggests that U.S. firms with higher

federal marginal tax rates find foreign havens attractive. Table 5 also reports a positive

coefficient on *FCF*, which suggests that firms with greater free cash flow are more likely to have

a subsidiary located in a foreign tax haven.[16] This result provides support for hypothesis 4, and is

consistent with U.S. firms that use foreign subsidiaries holding cash earned from corporate

profits overseas. In addition, the coefficient on *FORSALESRATIO* is significantly positive and is

the largest amongst all of the regression variables, which is consistent with U.S. firms with a

greater proportion of foreign operations incorporating subsidiaries in foreign tax havens

(hypothesis 5). The coefficients on most of the variables that account for the operational

wherewithal to transfer intangible assets to subsidiaries (*RDEXP, PCTGP*, and *INDUSTRY*) and

SIZE are also positive. It is notable that the coefficient on *AVGSTRATE* is not significant, which

suggests that firms with higher average state tax rates are not more likely to have subsidiaries

located in foreign tax haven countries. The results reported in the second column, where the

dependent variable is *FOR_Q4*, provide similar inferences across all of the explanatory variables.

Table 6 reports results from equation (3), which models the association between firm

characteristics and subsidiary locations in the domestic tax haven of Delaware. The first column

reports results when the dependent variable is *STATE_HAVEN*. The results do not provide

support for either of the domestic tax haven hypotheses. In particular, the coefficient on

AVGSTRATE is not significant, which suggests that firms with greater state tax incentives for

profit shifting are not more likely to locate subsidiaries in Delaware (hypothesis 3). The

coefficient on *STATE_RATIO* is significantly negative, which is opposite to our prediction under

hypothesis 6. The negative coefficient on *STATE_RATIO* indicates that firms with greater

operations in separate filing states are less likely to have a corporate subsidiary in Delaware. The

results for the variables that account for the operational wherewithal to transfer intangible assets

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[16] Ideally, we would like to separately identify the amount of domestic versus foreign free cash flow. Unfortunately, the amount of foreign cash flow is not reported in SEC filings. Campbell et al. (2014) develop a methodology to estimate the amount of foreign cash holdings from publicly available data that is based on the percentage of foreign sales relative to total sales. We utilized Campbell et al.'s (2014) methodology and replaced *FCF* with an estimate of foreign cash flow that is based on foreign sales, and the (untabulated) results do not indicate a significant association with foreign haven activity. We attribute this result to the measurement error inherent in the estimation procedure, as well as the low foreign sales percentage (*FORSALESRATIO*) for our sample.

to subsidiaries are also contrary to expectations, as the significantly negative coefficients on *RDEXP, PCTGP*, and *INDUSTRY* indicate that firms with the capability to utilize a profit shifting strategy involving the transfer of intangible assets are less likely to use a Delaware subsidiary. However, the significantly negative coefficients on *FORSALESRATIO* and *FCF* are consistent with the intuition underlying the domestic haven strategy. Specifically, firms with greater foreign sales and greater free cash flow are less likely to use a domestic haven subsidiary.

It is notable that the results reported in the second column, where the dependent variable is *STATE_Q4*, are remarkably different than the results reported in the first column. Under *STATE_Q4*, when domestic haven activity is based on firms with the number of Delaware subsidiaries in the top quartile of the sample, the coefficient on *STATE_RATIO* is significantly positive. This result provides support for hypothesis 3 and suggests that firms with greater operations in states that permit separate filing are more likely to locate corporate subsidiaries in Delaware. Similar to the results reported in the first column, the coefficient on *AVGSTATERATE* is significantly negative and does not provide support hypothesis 6. In addition, the results on the operational wherewithal variables (*RDEXP, PCTGP*, and *INDUSTRY*) are still inconsistent with our expectations, and the significantly positive coefficients on *MTR* and *SIZE* suggests that firms with higher federal marginal tax rates and that are larger are more likely to utilize Delaware subsidiaries. The fact that we only find results consistent with expectations on one of our state-specific hypotheses, and only when domestic haven activity is defined under *STATE_Q4*, suggests that perhaps the complexities involved in distinguishing between legal incentives to organize subsidiaries in Delaware and operational or tax incentives under the PIC strategy, make it impossible to detect significant effects from an empirical analysis using publicly available information.

6. Conclusion

U.S. firms face increased scrutiny by government regulators and the popular press for taking advantage of tax savings strategies afforded by operating in foreign and domestic tax havens. Officials express dismay at the magnitude of lost tax revenue in both the federal and domestic contexts due to profit-shifting between tax jurisdictions. In an effort to better understand the economic forces that influence a firm's decision to engage in tax haven savings strategies, this paper investigates the characteristics associated with firms that have corporate subsidiaries located in foreign and domestic tax haven jurisdictions. This study acknowledges the trade-off encountered by U.S. firms in selecting the geographic location for its intangible assets. Specifically, U.S. firms select whether to transfer intangible assets to subsidiaries located in Delaware and enjoy permanent state income tax savings, or to transfer intangible assets to subsidiaries located in foreign tax havens where the federal income tax savings are potentially much larger, but only temporary.

We find that U.S. firms with the greatest operational wherewithal and higher tax incentives to engage in profit shifting are more likely to locate corporate subsidiaries in domestic or foreign tax haven jurisdictions. The results indicate that characteristics associated with the likelihood of owning intangible assets, such as higher research and development expenses and operations in intangible asset-intensive industries, and larger tax incentives, are significant determinants of tax haven operations. In addition, we find that U.S. firms with higher U.S. federal marginal tax rates, greater free cash flow, and more foreign operations are more likely to have a subsidiary located in a foreign haven country. Our analysis of state tax haven determinants yields results that are largely not consistent with expectations, which perhaps reflects the confounding issue that U.S. firms operate in Delaware for both tax and nontax reasons.

This study is of interest to academic researchers and tax policymakers as it provides the first attempt to investigate the choice U.S. firms have to locate intangible assets in both foreign and domestic tax havens. The results of this study provide initial insight into the complexities involved in understanding the firm characteristics that influence the operational structures involved in multijurisdictional profit-shifting tax strategies.

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APPENDIX: VARIABLE DEFINITIONS

Variable	Description
ADVEXP	Advertising expense, scaled by total assets
ANYHAVEN	Indicator variable equal to 1 if Exhibit 21 reports at least one subsidiary located in a tax haven country, or at least one subsidiary located in Delaware, and coded 0 otherwise
AVGSTRATE	Weighted average statutory tax rate of states in which Exhibit 21 discloses subsidiaries, calculated as in Dyreng et. al (2013)
#DE_SUBS	Number of subsidiaries located in Delaware
DOMSALESRATIO	Ratio of domestic sales to total sales
FCF	Cash flow from operations, scaled by total assets
FOR_HAVEN	Indicator variable equal to 1 if Exhibit 21 reports at least one subsidiary located in a foreign tax haven, and coded 0 otherwise
FOR_Q4	Indicator variable equal to 1 if the number of subsidiaries located in foreign tax havens is greater than three, and coded 0 otherwise
#FOR_SUBS	Number of subsidiaries located in foreign tax havens
FORSALESRATIO	Ratio of foreign sales to total sales
INDUSTRY	Indicator variable equal to 1 if the firm operates in one of the following three-digit SIC codes: 283, 357, 367, 737, 738, and coded 0 otherwise
MTBRATIO	Ratio of the firm's market value to book value
MTR	Federal corporate marginal tax rate, calculated based on the methodology of Graham (1996)
PCTGP	The ratio of gross profit to total sales
RDEXP	Research and development expense, scaled by total assets
SIZE	Total assets
STATE_HAVEN	Indicator variable equal to 1 if Exhibit 21 reports at least one subsidiary located in Delaware, and coded 0 otherwise
STATE_Q4	Indicator variable equal to 1 if the number of subsidiaries located in Delaware is greater then ten, and coded 0 otherwise
STATE_RATIO	Ratio of the number of subsidiaries located in separate filing states, to the total number of domestic subsidiaries, as disclosed in Exhibit 21

Table 1
Sample Attrition and Sample Composition

Panel A: Sample Attrition

	Number of observations
Observations with Exhibit 21 data	50,151
Observations missing Compustat information to calculate regression	(24,088)
Subtotal	26,063
Observations missing marginal tax rate	(10,580)
Exhibit 21 sample	15,483
Observations without a subsidiary in Delaware or a foreign tax haven	(2,443)
Havens sample	13,040

Panel B: Sample Composition by Year

	Exhibit 21 sample		Havens sample	
Year	Number of Observations	Percentage of Total	Number of Observations	Percentage of Total
1995	699	4.51%	568	4.36%
1996	1,267	8.18%	995	7.63%
1997	1,465	9.46%	1,147	8.80%
1998	1,309	8.45%	1,051	8.06%
1999	1,071	6.92%	899	6.89%
2000	981	6.34%	848	6.50%
2001	956	6.17%	833	6.39%
2002	922	5.95%	795	6.10%
2003	896	5.79%	769	5.90%
2004	904	5.84%	778	5.97%
2005	932	6.02%	807	6.19%
2006	898	5.80%	801	6.14%
2007	1,064	6.87%	922	7.07%
2008	1,049	6.78%	903	6.92%
2009	1,070	6.91%	924	7.09%
Total	15,483	100%	13,040	100.00%

Table 2
Descriptive Statistics

Panel A: Exhibit 21 sample (N=15,483)

	Mean	Median	Standard Deviation	25%	75%
Tax haven variables					
#DE_SUBS	8.338	3.000	20.535	1.000	8.000
#FOR_SUBS	1.728	1.000	2.706	0.000	3.000
ANYHAVEN	0.842	0.000	0.365	1.000	1.000
FOR_HAVEN	0.504	1.000	0.499	0.000	1.000
STATE_HAVEN	0.769	1.000	0.421	1.000	1.000
Other regression variables					
ADVEXP	0.011	0.000	0.030	0.000	0.005
AVGSTATERATE	0.063	0.065	0.023	0.053	0.078
DOMSALESRATIO	0.794	0.889	0.241	0.631	1.000
FCF	0.083	0.090	0.121	0.042	0.138
FORSALESRATIO	0.092	0.030	0.138	0.000	0.134
INDUSTRY	0.172	0.000	0.377	0.000	0.000
MTBRATIO	4.035	2.039	56.433	1.267	3.336
MTR	0.296	0.350	0.108	0.314	0.350
PCTGP	0.338	0.334	0.499	0.221	0.482
RDEXP	0.032	0.000	0.070	0.000	0.035
SIZE	4,043.14	593.83	22,284.11	164.004	2,042.90
STATE_RATIO	0.463	0.500	0.310	0.250	0.667

Table 2
Descriptive Statistics

Panel B: Havens sample: Foreign and Domestic Tax Havens

	FOR_HAVEN=1 N=7,810		STATE_HAVEN=1 N=11,908	
	Mean	Median	Mean	Median
Tax haven variables				
#DE_SUBS	12.378	5.000	10.842	5.000
#FOR_SUBS	3.427	2.000	2.026	1.000
FOR_HAVEN	1.000	1.000	0.561	1.000
FOR_Q4	0.496	0.000	0.297	1.000
STATE_HAVEN	0.855	1.000	1.000	1.000
STATE_Q4	0.326	0.000	0.283	1.000
Other regression variables				
ADVEXP	0.011	0.000	0.011	0.000
AVGSTATERATE	0.063	0.065	0.063	0.065
DOMSALESRATIO	0.675	0.685	0.774	0.844
FCF	0.092	0.096	0.084	0.090
FORSALESRATIO	0.138	0.094	0.101	0.047
INDUSTRY	0.225	0.000	0.175	0.000
MTBRATIO	4.802	2.215	4.274	2.079
MTR	0.307	0.350	0.298	0.350
PCTGP	0.376	0.363	0.340	0.335
RDEXP	0.038	0.013	0.032	0.000
SIZE	6,555.61	1,150.52	4,922.89	769.92.90
STATE_RATIO	0.447	0.500	0.425	0.667

Table 3
Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) ANYHAVEN	1.000	0.437***	0.790***	0.058***	0.046***	0.172***	-0.223***	0.029**	0.005	0.041***	0.030**	0.060***	0.007	0.066***
(2) FOR_HAVEN		1.000	0.206***	0.104***	0.048***	0.334***	-0.050***	0.081***	-0.003	0.087***	0.078***	0.142***	0.014*	0.114***
(3) STATE_HAVEN			1.000	0.043***	0.024**	0.120***	-0.223***	0.013*	0.012	-0.006	0.009*	-0.055***	0.008	0.072***
(4) MTR				1.000	-0.002	0.048***	0.114***	0.350***	0.023**	-0.264***	0.155***	-0.161***	-0.006	0.060***
(5) AVGSTATERATE					1.000	0.029**	-0.064***	-0.025**	0.028***	0.073***	0.016**	-0.161***	-0.006	0.060***
(6) FORSALESRATIO						1.000	-0.075***	0.028**	0.002	0.095***	0.072***	0.126***	0.012	0.043***
(7) STATE_RATIO							1.000	0.052***	-0.048***	-0.224***	-0.039***	-0.170***	-0.021**	0.035***
(8) FCF								1.000	0.044***	-0.316***	0.298***	-0.075***	0.003	0.034***
(9) ADVEXP									1.000	-0.046***	0.077***	-0.055***	0.013	-0.000
(10) RDEXP										1.000	-0.097***	0.457***	0.021***	-0.029***
(11) PCTGP											1.000	0.017**	-0.003	0.022***
(12) INDUSTRY												1.000	0.011	-0.003
(13) MTBRATIO													1.000	-0.000
(14) SIZE														1.000

Pearson correlation statistics for the restatement variables are reported above the diagonal. The correlation between the two variables is shown, with the significance of the two-tailed p-value indicated at the <0.0001, 0.05, and 0.10 level by ***, **, *, respectively. All variables are defined in the Appendix.

Table 4
Characteristics Associated with Subsidiaries Located in Tax Havens

Dependent Variable =	*ANYHAVEN*	
	Coefficient	
Variable	Estimate	P-Value
Intercept	0.602	<0.0001
ADVEXP	0.150	0.8417
RDEXP	2.288	<0.0001
PCTGP	0.097	0.0160
INDUSTRY	0.413	<0.0001
MTR	0.737	0.0005
AVGSTRATE	3.770	<0.0001
FCF	0.153	0.4660
MTBRATIO	0.001	0.5751
SIZE	0.000	<0.0001

Number of observations = 15,483

The logit regression equation is $ANYHAVEN_{it} = \alpha_1 + \beta_1 ADVEXP_{it} + \beta_2 RDEXP_{it} + \beta_3 PCTGP_{it} + \beta_4 INDUSTRY_{it} + \beta_5 MTR_{it} + \beta_6 AVGSTRATE_{it} + \beta_7 FCF_{it} + \beta_8 MTBRATIO_{it} + \beta_9 SIZE_{it} + \varepsilon_{it}$. The sample consists of 15,483 firm-year observations. The coefficient estimates are reported with two-sided p-values. All variables are defined in the Appendix.

Table 5
Characteristics Associated with Foreign Tax Haven Locations

Dependent Variable =	FOR_HAVEN		FOR_Q4	
Variable	Coefficient Estimate	P-Value	Coefficient Estimate	P-value
Intercept	-1.414	<0.0001	-3.192	<0.0001
ADVEXP	0.057	0.9294	0.022	0.9759
RDEXP	2.836	<0.0001	1.597	<0.0001
PCTGP	0.187	0.0010	0.669	<0.0001
INDUSTRY	0.685	<0.0001	0.518	<0.0001
FORSALESRATIO	6.153	<0.0001	4.338	<0.0001
STATE_RATIO	0.803	<0.0001	0.867	<0.0001
MTR	1.351	<0.0001	2.565	<0.0001
AVGSTRATE	0.932	0.2970	-0.277	0.7715
FCF	1.133	<0.0001	1.721	<0.0001
MTBRATIO	0.001	0.3102	-0.000	0.6315
SIZE	0.000	<0.0001	0.000	<0.0001

Number of observations = 13,040

The logit regression equation is $FOR\_HAVEN_{it} = \alpha_1 + \beta_1 ADVEXP_{it} + \beta_2 RDEXP_{it} + \beta_3 PCTGP_{it} + \beta_4 INDUSTRY_{it} + \beta_5 FORSALESRATIO_{it} + \beta_6 STATE\_RATIO_i + \beta_7 MTR_{it} + \beta_8 AVGSTRATE_{it} + \beta_9 FCF_{it} + \beta_{10} MTBRATIO_{it} + \beta_{11} SIZE_{it} + \varepsilon_{it}$ in the first column, and $FOR\_Q4_{it} = \alpha_1 + \beta_1 ADVEXP_{it} + \beta_2 RDEXP_{it} + \beta_3 PCTGP_{it} + \beta_4 INDUSTRY_{it} + \beta_5 FORSALESRATIO_{it} + \beta_6 STATE\_RATIO_i + \beta_7 MTR_{it} + \beta_8 AVGSTRATE_{it} + \beta_9 FCF_{it} + \beta_{10} MTBRATIO_{it} + \beta_{11} SIZE_{it} + \varepsilon_{it}$ in the second column. The sample consists of 13,040 firm-year observations. The coefficient estimates are reported with two-sided p-values. All variables are defined in the Appendix.

Table 6
Characteristics Associated with State Tax Haven Locations

Dependent Variable =	STATE_HAVEN		STATE_Q4	
Variable	Coefficient Estimate	P-Value	Coefficient Estimate	P-value
Intercept	3.554	<0.0001	-1.775	<0.0001
ADVEXP	0.897	0.4474	-1.921	0.0152
RDEXP	-3.473	<0.0001	-5.465	<0.0001
PCTGP	-0.363	0.0063	0.105	0.3031
INDUSTRY	-0.359	<0.0001	-0.262	0.0003
FORSALESRATIO	-0.623	0.0033	1.139	<0.0001
STATE_RATIO	-1.670	<0.0001	1.466	<0.0001
MTR	-0.307	0.3640	0.616	0.0105
AVGSTRATE	0.649	0.6477	-5.940	<0.0001
FCF	-0.995	0.0020	0.293	0.2612
MTBRATIO	0.001	0.5889	0.000	0.9426
SIZE	0.000	<0.0001	0.000	<0.0001

Number of observations = 13,040

The logit regression equation is $STATE\_HAVEN_{it} = \alpha_1 + \beta_1 ADVEXP_{it} + \beta_2 RDEXP_{it} + \beta_3 PCTGP_{it} + \beta_4 INDUSTRY_{it} + \beta_5 FORSALESRATIO_{it} + \beta_6 STATE\_RATIO_i + \beta_7 MTR_{it} + \beta_8 AVGSTRATE_{it} + \beta_9 FCF_{it} + \beta_{10} MTBRATIO_{it} + \beta_{11} SIZE_{it} + \varepsilon_{it}$ in the first column, and $STATE\_Q4_{it} = \alpha_1 + \beta_1 ADVEXP_{it} + \beta_2 RDEXP_{it} + \beta_3 PCTGP_{it} + \beta_4 INDUSTRY_{it} + \beta_5 FORSALESRATIO_{it} + \beta_6 STATE\_RATIO_i + \beta_7 MTR_{it} + \beta_8 AVGSTRATE_{it} + \beta_9 FCF_{it} + \beta_{10} MTBRATIO_{it} + \beta_{11} SIZE_{it} + \varepsilon_{it}$ in the second column. The sample consists of 13,040 firm-year observations. The coefficient estimates are reported with two-sided p-values. All variables are defined in the Appendix.