

Institutional Investors and Tax Havens

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Abstract

We are the first to study institutional investor ownership of tax haven firms. Institutional ownership is higher for tax haven firms, all else equal. Ownership is higher for investment advisors, hedge funds, banks, investment companies, and pensions. Investors value the difference between the domicile country tax rate and the incorporation country tax rate. Ownership of tax haven firms is impacted by the governance quality in the tax haven countries. We also conduct analysis from the institutional investor portfolio perspective. We report evidence that tax haven located investors hold a higher portion of their portfolios in tax haven firms.

1. Introduction

Tax havens may provide firms lower tax rates and often have lighter governance requirements. Thus, it is not clear whether incorporating in a tax haven adds value to the firm (Wang et al., 2020). Some uncertainty occurs because the impact of a change in tax rates on firm value is not straightforward. The first insight is that paying lower taxes increases cash flows and thus increases the value of the firm. However, the Modigliani and Miller (1963) model of capital structure illustrates the tax benefits of debt financing. Therefore, the second insight is that the cash flow increase resulting from changing to a lower corporate tax rate is somewhat offset by a decline in the present value of debt tax shields. Faccio and Xu (2015, 2018) examine tax policy changes across OECD countries and conclude that the mitigating effect of leverage on firm value changes due to tax rate changes is economically large. Debt tax shields are more valuable in countries with low levels of tax evasion, higher effective tax rates, and more profitable firms.

A third insight is that relocating to a tax haven also comes with a new legal system and likely lower corporate governance standards, thus agency costs may increase and lower the value of a firm (Col, 2017). Indeed, Bennedsen and Zeume (2018) find that managers can use the opacity

created by the tax havens to expropriate value from shareholders. However, Lewellen (2022) reports that some tax havens have stronger governance requirements than some domicile countries and thus would increase transparency for firms.

A fourth insight is that firms using tax havens are taking the risk of being publicly shamed for not being good corporate citizens. Public shaming could lead to consumers boycotting their products and governments enacting new and costly regulation of the firm. For example, Choy et al. (2017) report that when an organization called ActionAid condemned British firms that held an unusually large number of subsidiaries in tax havens, the stock prices of those firms fell nearly one percent. They find that government scrutiny, reputation impacts, and investor sentiment were all plausible reasons for the decline in firm value. Indeed, Graham et al. (2014) survey nearly 600 corporate tax executives and report that 69% of the executives cite reputational concerns as a reason why firms do not adopt a potential tax planning strategy. Akamah et al. (2018) show that tax haven firms try to avoid this criticism by reducing the transparency of their tax-avoidance strategies.

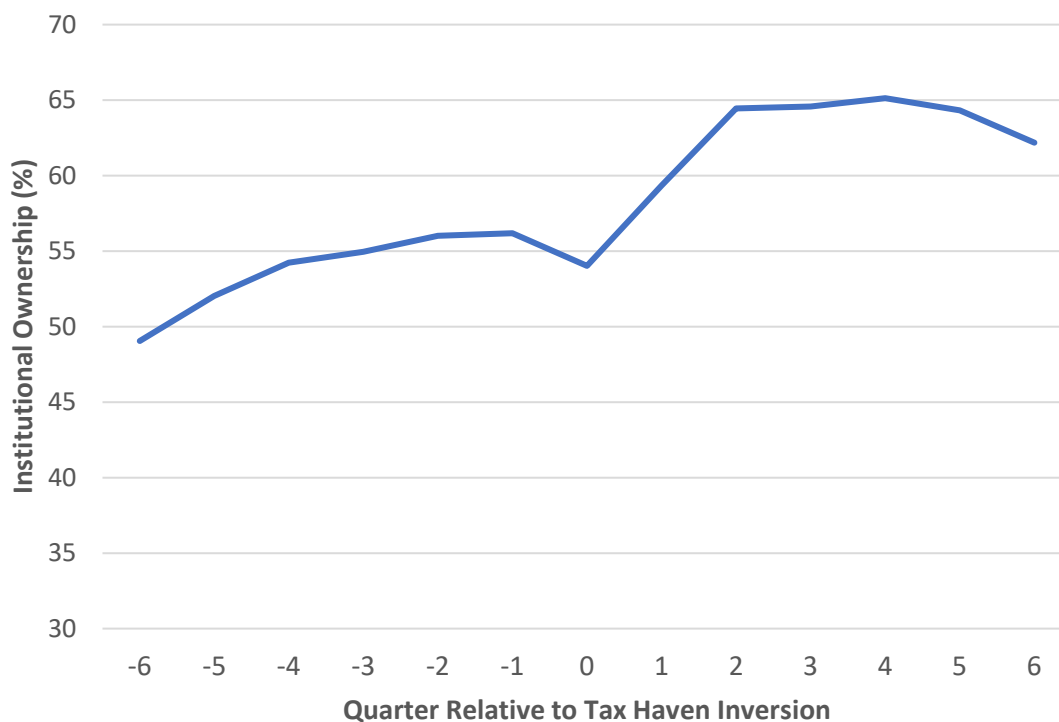
In summary, while relocating to a tax haven can provide cash flow benefits in the form of lower taxes, the benefits may be offset by a reduction in the benefit of tax shields, increased agency costs, and shaming risks.

One way to explore whether incorporating in a tax haven is beneficial is to examine the revealed preferences of smart investors through their ownership tendencies. Nofsinger and Sias (1999) find that institutional investors are better informed than individuals. Thus, we examine institutional ownership to assess whether smart investors tilt their portfolios toward tax haven firms, all else equal. Khan et al. (2017) show increases in institutional ownership are associated with increases in tax avoidance. Does institutional ownership lead to greater tax avoidance

strategies, or is the causation the other direction? To assess the direction of the correlation, they use the event in which firms become included in the Russell 2000 Index. The index inclusion leads to more institutional ownership. They find that the increase in institutional ownership associated with index inclusion then leads to increased tax avoidance strategies. Cheng et al. (2012) find that when hedge fund activists target U.S. firms with lower tax avoidance levels, they experience increases in tax avoidance after the intervention. Alternatively, Doellman et al. (2020) report the opposite findings. Specifically, U.S. mutual funds treat tax-avoiding firms as risky investments and tend toward lower ownership due adherence to the prudent-man rule. However, those tax avoidance strategies appear not to include tax sheltering or tax havens. Note that these studies do not examine incorporation in tax havens and only include U.S. firms. In addition, they use U.S. based institutional investors of a general type (like all institutional investors), or a very specific type (like hedge funds). Our study includes institutional investors of different types and firms worldwide and specifically focuses on firms incorporating in tax havens.

Do institutional investors even care about location of incorporation? Our initial investigation suggests that they do. Bloomberg (2017) identified 58 U.S. firms that completed an inversion to a tax haven between 1982 and 2016. We have international institutional ownership for 45 of these inversions. Figure 1 shows the quarterly average institutional ownership around the U.S. corporate inversions to a tax haven. Note that institutional ownership increases from 56.2% one quarter before the inversion to 59.3% in the first quarter afterwards to 64.4% in the second quarter. This event study data can be messy because institutional ownership data is reported quarterly and the exact inversion announcement and completion dates can be uncertain. This initial analysis suggests that institutions do value tax haven incorporation and that corporate inversions to tax havens lead to increased institutional ownership.

Figure 1 Average Institutional Ownership of 45 Tax Haven Inversions



To thoroughly examine institutional preferences regarding tax haven firms, we do not limit our analysis to U.S. tax inversions but rather include all tax haven firms domiciled from all countries worldwide.

We use quarterly institutional holdings data from the FactSet ownership database, which includes detailed information for 15,781 institutional investors from 92 countries holding ownership in 68,169 firms in 142 countries. Data is added on country tax rates, tax haven designation, and country level governance indicators. This is the first paper to study the institutional investor view of tax haven firms. We also categorize institutions by their incentive to monitor firms. Ferreira and Matos (2008) argue that *pressure-sensitive* institutions (bank trusts, insurance companies, and pension funds) often have (or want) business relationships with the firms

and are thus more likely to support management compared to *independent* institutions (investment companies, investment advisors, and hedge funds).

We employ instrumental variable and two-stage least square methods to address possible endogeneity issues. We find that institutional ownership is higher for tax haven firms, all else equal. This is true for independent institutions but not pressure-sensitive institutions. We then examine the tax rate implications of tax havens and find that institutional ownership is positively related to the difference between the domicile country tax rate and the incorporation country tax rate. This result occurred for the investor categories of pressure-sensitive, investment advisors, investment companies, independent, and pension funds. Institutional ownership of tax haven firms is mitigated by poor corporate governance in the tax haven countries, as measured by investor protection, disclosure, and transparency measures. Lastly, we examine the portion of institutional investor portfolios invested in tax haven firms. Note that some institutional investors are incorporated in tax havens themselves, and thus would have the best insight into the benefits and costs of tax havens. We find evidence that tax haven investors hold a higher portion of their portfolios in tax haven firms, all else equal. Geographically, investors located in the East Asia & Pacific, Europe & Central Asia, and North America regions hold a higher portfolio portion of tax haven firms. Also, hedge funds, investment companies, and investment advisors have a significantly higher portion of portfolio holdings in tax haven companies.

We begin with a review of the literature and the development of hypotheses in the next section. The data sample is explored in Section 3, followed by the methods and results in Section 4. Section 5 summarizes our findings.

2. Literature review and hypotheses development

2.1 Corporate Tax Avoidance

Over the past 25 years, U.S. statutory tax rates have remained relatively constant. However, many firms have been able to reduce their effective tax rates through tax planning activities (Dyreng et al., 2017). They can do this through tax avoidance strategies using tax shelters, or they can outright re-incorporate in a tax haven country.

Lisowsky (2010) examines tax shelter and tax return data from the Internal Revenue Service to compute the likelihood of a U.S. company engaging in a tax shelter. Results show that tax shelter likelihood increases when there is a subsidiary located in a tax havens, has foreign-source income, higher profitability, is larger, and has lower leverage. Most studies of the use of tax shelters do not know whether the firm is really using tax shelters, instead they estimate the likelihood of firms using tax shelters vis-à-vis the method in Wilson (2009). In contrast, Hanlon and Slemrod (2009) investigate the market reaction to the news that a firm was involved in a corporate tax shelter. While the attempt to reduce taxes may be viewed as value-enhancing, if a firm is identified as a tax shelter purchaser, the firm may bear reputational and political costs of being labeled a poor corporate citizen. This could impact shareholders that may not want to be associated with a poor corporate citizen and consumers of the firm's products. They report that a company's stock price declines, on average, when there is news about its involvement in tax shelters.

The term "tax haven" is used to describe a country or territory that offers individuals and firms lower tax rates on investment returns and corporate profits. However, a discussion around tax havens is complicated when the term is used for both illegal tax evasion and legal tax avoidance. For example, Hanlon et al. (2015) estimate the degree of illegal tax evasion through offshore investments by assessing the degree to which U.S. citizens use tax havens to invest in U.S. equity and debt markets. The investments are treated as foreign portfolio investment by the

U.S. government and taxed at much lower rates than domestic portfolio investment rates. See Kemme et al. (2017) for a similar analysis of residents from OECD countries. Alternatively, Lisowsky (2010) examines firms that incorporate in tax havens to access the lower income tax rates. These firms are transparent about their objectives and the activity is legal. An additional complication is that a particular tax haven country or territory may facilitate both illegal tax evasion activities and legal corporate tax avoidance. Our paper investigates the institutional investor interest in companies that locate in tax havens for legal tax avoidance strategies.

The most common way for a company to reincorporate overseas for tax purposes is to conduct a corporate inversion. A company executes an inversion by being purchased by a foreign firm from the country with a lower tax structure. The foreign firm owns the assets and dissolves the old corporation. The business operations remain domiciled in the domestic country but is incorporated in the tax haven. The inversion has large corporate tax benefits for the firm's cash flows, but the process requires shareholders to recognize a capital gain at the time of the sale to the foreign firm. Therefore, many shareholders will be subject to paying capital gains taxes. So, while the firm will reduce its corporate income tax, many of its shareholders will pay a personal capital gains tax. Babkin et al. (2017) develop a model that includes both the value increase from the corporate tax rate decline and the value decrease in paying personal capital gains taxes to evaluate the net shareholder benefit from an inversion. For the shareholder personal tax, important factors are their cost basis and capital gains tax rate, which may be zero for tax-exempt investors. Babkin et al. define the non-taxable shareholders as pensions, endowments, and government holdings. For those tax-exempt investors, the inversion is a wealth-increasing event. However, for those shareholders with a low-cost basis and high capital gains tax rate, their personal tax costs can exceed the corporate tax benefits, creating a wealth-reducing event. Babkin et al. estimate that

on average, the upfront tax costs outweigh the future benefits of an inversion for 19.5% of the shareholders. Therefore, there is a conflict between the shareholders. There is also a conflict between equity and debt holders in tax aggressiveness in which equity holders value it more (Francis et al., 2022).

While low tax rates are the primary reason for a firm to locate in a tax haven, there are other factors that are important to firms. Dharmapala and Hines (2009) shows that U.S. firms value better governed countries. They report that the likelihood of a country becoming a tax haven rises from 26% to 61% as the quality of the country's governance quality improves. In other words, U.S. firms value low tax rates much more in well-governed haven countries than they do in havens with poor governance. However, Col and Liao (2020) illustrate that it is important to go beyond U.S. firms. They report that among the 691 inversions in their sample, more than 68% are domiciled in countries other than the United States. In addition, many of these inversions occur to countries with similar or higher governance standards. In addition, Li et al. (2022) show that multinational corporation's choice of subsidiary location in offshore financial centers impact their accounting quality. Thus, an international sample of firms is needed to obtain a full picture of investor views of tax haven firms.

Much of the literature concludes that tax avoidance is a wealth maximizing strategy. For example, Wilson (2009) finds that firms with good corporate governance using tax shelters earn positive abnormal returns. McGuire et al. (2014) study tax avoidance and the difference between voting rights and cash flow rights between ownership in dual class structures. They find that the larger the difference in rights between the two classes, the less tax avoidance occurs. They conclude that dual class ownership entrenches managers and allows them to perform at suboptimal levels. Alternatively, Brooks et al. (2016) examine corporate tax payment and financial

performance in the United Kingdom. They find no discernible link between tax rates and stock returns.

2.2 Investor Views of Tax Avoiding Firms

Fama and Jensen (1983) assert that concentrated equity ownership and corporate decision-making will result in owner-managers being more risk averse, and thus less willing to invest in risky projects like income tax avoidance. Badertscher et al. (2013) examine the tax avoidance of private firms with very different ownership structures. Specifically, some firms are majority-owned by the firm's managers, and some are owned by private equity (PE) firms. Note that because the private firms experience little public scrutiny compared to publicly traded firms, they place less weight on financial reporting decisions and more weight on tax reporting decisions. They find that management-owned firms use less tax aggressiveness than private equity backed firms, which suggest that firms with more concentrated ownership and control tolerate less tax risk. Thus, ownership structure is likely to influence tax avoidance aggressiveness.

There is evidence that investors react and adapt to tax rates changes. For example, Li et al. (2017) show that when China adopted its 2012 Dividend Tax Reform, the tax rates on dividend income changed from 10% to a scale that depends on how long the shareholder has owned the shares. A rate of 20% was enacted for ownership of one month or less, a 10% rate applies to holdings greater than one month to one year, and a 5% tax rate applies to dividends received on shares owned longer than one year. Since dividends are announced approximately 70 days in advance, investors can time their purchases to qualify for the lower tax rates. Li et al. report that this seems to be the case for firms that pay higher dividends. In addition, firms whose investors faced reductions in dividend tax rates because of the long-term ownership were more likely to

increase their dividend payouts compared to firms whose investors faced increased tax rates due to short term ownership. This illustrates how both investors and firms react to tax rate changes.

Desai and Dharmapala (2011) examine the portfolio choices of American investors when the foreign dividend tax rate was changed by the 2003 Jobs and Growth Tax Relief Reconciliation Act. The Act decreased the dividend tax rate on domestic equities to 15%. But that rate was also extended to dividends received from companies domiciled in a small subset of foreign countries. They find that because of the Act, U.S. investors' holdings of lightly taxed foreign equities increased and the allocation to comparatively more heavily taxed firms declined.

Chen et al. (2010) investigate whether tax aggressiveness is preferred by shareholders through the behavior of family firms. Do owners prefer the potential of higher cash flows because of tax aggressive policies, or the fewer agency problems associated with not being tax aggressive. In other words, minority shareholders may have a greater concern about family rent-seeking activities when tax manipulation is prevalent. As such, they may discount the price of the firm. Thus, family owners must weigh the cash flow benefits of tax aggressiveness against the price discounting of agency costs. Chen et al. find that family owners appear to be more concerned about the reputational damage of the consequences of IRS audits and therefore are less tax aggressive than non-family firms.

Corporate tax avoidance has traditionally been viewed as beneficial to shareholders as it represents a value transfer from the state to shareholders. However, the increased cash flow and decreased transparency associated with tax avoidance strategies also may allow management to extract rents. Thus, tax avoidance strategies may be accompanied by agency costs. Allen et al. (2016) show that higher analyst coverage constrains tax aggressiveness, especially in firms with lower investor recognition and firms with more opaque information environments. Thus,

monitoring and transparency have a mitigating impact on tax aggressiveness. Khurana and Moser (2013) argue that investor horizon may be associated with monitoring and thus impact tax avoidance. Long-term institutional shareholders could constrain a firm's tax avoidance activities. They use four different measures for tax avoidance and find less tax avoidance for firms held by long-term institutional shareholders.

This discussion leads us to our hypotheses. The first regards institutional investors and whether they value the potential cash flow increase due to lower taxes in tax haven firms over the agency cost cash flow decrease due to potentially weaker corporate governance.

H1: Institutional investors value the benefits over the costs of tax havens by overweighting tax haven firms in their portfolios.

Alternative: Institutional investors underweight tax haven firms.

We investigate this hypothesis through total institutional ownership and ownership by institution type. In addition, we group institutions into two categories by how active they may be in monitoring the firms in their portfolios following Ferreira and Matos (2008). Pressure-sensitive institutions (bank trusts, insurance companies, and pension funds) often have (or want) business relationships with the firms and are thus more likely to support management compared to independent institutions (investment companies, investment advisors, and hedge funds). Thus, independent institutions are likely to be more effective monitors, if desired. This monitoring tendency is likely important because tax havens usually have a poor governance environment.

H2: Pressure-sensitive institutional investors may have or want a business relationship with a firm are indifferent to their tax haven status as the business relationship may supersede their investment portfolio concerns.

Alternative: All institutional investors equally value tax haven status.

Although some types of institutional investors may prefer owning tax haven firms, they may still value good corporate governance.

H3: Institutional ownership of tax haven firms is mitigated by weak corporate governance standards.

Alternative: Corporate governance quality does not impact institutional ownership of tax haven firms.

Some institutional investors are, themselves, located in tax haven countries. We refer to them as tax haven institutional investors. The intimate knowledge of tax haven governance dynamics makes them especially suited to understanding the cost and benefits of companies incorporating in tax havens. Some examples of tax haven institutional investors' holdings in tax haven securities are as follows: 1) Templeton Global Advisors in the Bahamas owned 20.23% of Asia Satellite Telecommunications Holdings, a Hongkong company incorporated in Bermuda in 2000Q1, 2) Ahead Wealth Solutions AG, a Liechtenstein-based institution, held 2.6% of Thunderbird Resorts, Inc., incorporated in British Virgin Island, in 2013Q1, and 3) Luxembourg investor Natixis Wealth Management owned 0.23% of Sands China LTD, a Hongkong resort developer incorporated in Cayman Islands, in 2006Q1.

Thus, our fourth hypothesis is:

H4: Tax haven institutional investors value the benefits over the costs of tax havens by overweighting tax haven firms in their portfolios.

Alternative: Tax haven institutional investors underweight tax haven firms.

3. Data

A. Institutional Investor and Company Data

We use quarterly institutional holdings data from the FactSet ownership database, which is described in Choi et al. (2017). The dataset includes detailed information for 15,781 institutional investors from 92 countries holding ownership in 68,169 firms in 142 countries. FactSet collects holdings data on institutional investors that have invested more than 10% of total net assets in listed equities. The database covers companies with a market capitalization of more than \$50

million and accounts for all institutional holdings equal to or larger than 0.1% of the company's issued shares. To compile a complete holdings' profile for each institutional investor, FactSet contacts mutual fund associations and regulatory authorities in each country. For example, for equities traded in the United States, it uses various mandatory reports (e.g., 13-F, N-Q, N-CSR, and 485BPOS) to collect ownership data. When regulatory filings fall short, it obtains portfolio reports either from the fund's website or by direct contact with the fund company or its distributors. For equities traded outside of the United States, FactSet gathers data from similar regulatory filings, company reports and announcements, and industry directories. The database provides information on the institutions as well as the securities held by the institutions. For each institution, in any given quarter, we obtain the number of shares and the market value of each security in the investor's portfolio. In addition, FactSet contains data on the investor's domicile country and the style and the type of investor. For each security, we have the country of exchange, standard industry classification (SIC), closing price, return data, and accounting data, such as book value of equity and earnings. To identify tax haven countries, we primarily use the list of countries identified as tax haven by Dharmapala and Hines (2006).

B. Country Corporate Governance Measurement

Corporate governance can potentially be an important factor influencing an investor's decision to invest in tax haven securities. Investor preference for corporate governance and information transparency has been a focus of investor decision making (see, for example, Choi and Sias (2012), Baik et al. (2010), and Kang and Stulz (1997)). We follow Choi and Skiba (2015) to identify five factors that affect the level of governance and information environment: stock market development, access to information, corporate transparency, investor rights, and macroeconomic factors. Within each information environment factor, there are several important

variables as described below. We combine the variables within each factor using their main principal component as explained in Section 3 of Choi and Skiba (2015).

The principal component for each country's stock market development is computed using the following variables: 1) total market capitalization as a percent of GDP from the World Bank, 2) stock market volume (computed as the aggregate volume of publicly traded securities, scaled by the market capitalization), 3) float (investable shares as a percent of total shares outstanding), and 4) volatility (standard deviation of the value-weighted stock market return). The principal component for the access to information uses the variables: 1) the number of internet users per 100 people in the population (from the World Bank), 2) the number of newspapers in circulation per 1000 people in the population (from the World Bank), and 3) the overall access to media in the country (from Bushman et al., 2004). The variables used to estimate the corporate transparency principal component include disclosure intensity, accounting principle, analyst coverage, insider trading, and security disclosure and anti-self-dealing index (from Bushman et al., 2004 and Djankov et al., 2008). The principal component for investor rights uses the Investor Protection index (from La Porta et al., 2006), and the indices of Investment Freedom, Financial Freedom, and Economic Freedom (constructed by the Heritage Foundation). Lastly, we use the GDP per capita and average annual inflation to estimate the principal component for each country's macroeconomic condition.

C. Domicile and Tax Haven Sample

Table 1 reports the number of firms domiciled and incorporated in each country. Tax haven countries are identified by Dharmapala and Hines (2006). The table also shows the average corporate tax rate of each country (obtained from the Tax Foundation). The data covers 68,169 firms across 142 countries from the years 2000 to 2021. Note that in order to conserve space, Table

1 only shows the countries that have 50 or more firms domiciled or incorporated. However, all countries and firms are used in the analysis. There are 28 countries defined as a tax haven country in our sample. The last column reports the time-series average corporate tax rate of each country over the sample period. A firm is classified as a tax haven firm if it is incorporated, but not domiciled, in a country defined as a tax haven country. The table shows that for most of the countries, the numbers of firms incorporated and domiciled are similar. However, there is an imbalance between the numbers of firms incorporated and domiciled for most tax haven countries. For example, there are 1,986 firms incorporated in Cayman Island, yet only 85 firms in our sample are domiciled there. Similar imbalances occur for Bermuda, British Virgin Island, and Isle of Man. In some rare cases, such as Hong Kong and China, there are more companies domiciled than incorporated.

[Insert Table 1 about here]

Table 1 also reports the average tax rates for firms incorporated in each country. Note that there is much variation. For example, some countries, such as Bahamas, Bahrain, Bermuda, and Cayman Islands have a zero-tax rate. Countries with high tax rates include Germany (44.89%), India (40.62%), Japan (40.58%), and the United States (39.80%).

D. Firm Sample

Table 2 displays the summary statistics of control variables for all firms in our sample (Panel A), and tax haven firms (Panel B). From the Factset Fundamentals database, we compute Log (BM) as log of book value of equity divided by market value of equity; Sales Growth Rate as an annual growth rate in sales; Turnover as annual share volume dividend by adjusted shares outstanding; ROE as return on equity; Total Debt Ratio as total debt divided by total assets; and Liquidity as cash and short-term investments divided by total assets. Idiosyncratic Volatility is the

residual from a regression of monthly value-weighted market returns, calculated using the entire universe of the stocks in each sample country. Annual Return is the annual geometric rate of returns calculated using monthly returns. Comparing all firms and tax haven firms (Panel A versus Panel B), we find that tax haven firms tend to have larger book-to-market ratios, which can be interpreted as having a lower relative valuation. Tax haven firms also have higher sales growth, higher liquidity, and have higher market capitalization. Not surprisingly, the mean difference between the tax rates of domiciled and incorporated countries for the tax haven firms is 14.47%, whereas the difference is only 0.76% for the whole sample.

[Insert Table 2 about here]

E. Institutional Investor Sample

Table 3 shows the sample statistics for the 15,781 institutional investors from 92 countries over 22 years. Panel A reports the sample statistics of institutions by country and shows the number institutions, average holdings of tax haven firms, geographical region category, country income code (from the World Bank), and an identifier indicating whether that country is a tax haven. The average tax haven holding is calculated by summing up the dollar value of investments in tax haven firms for a given institutional investor and dividing by the total market value of that institution's investment each quarter, and then reported as the time series average. The average percentage holding in tax haven firms is 0.66%. There are 1,243 institutions whose home country is classified as a tax haven. These tax haven institutions own more than double the average proportion of tax haven firms (1.51% compared to 0.66%). The countries with the largest institutional ownership of tax haven firms is Hong Kong (8.44%) and Singapore (5.45%).

[Insert Table 3 about here]

Panels B and C of Table 3 show the average percentage holdings of institutional investors in tax haven firms by the institution's region and income categories. Investors from the East Asia & Pacific and Sub-Saharan Africa regions invest the highest percentage of their holdings in tax haven firms.¹ Panel D shows the ownership of tax haven firms in different institutional investor categories. The institutional types with the highest tax haven firm ownership are hedge funds, investment companies, and investment advisors, which are all independent institutions. The other three investor types (pensions & endowments, banks, and insurance companies) have low tax haven firm ownership and are pressure-sensitive institutions. This result is consistent with our second hypothesis.

Table 4 shows the summary statistics of institutional investor ownership for all firms (Panel A) and tax haven firms (Panel B). There are total of 48,471 firms² in the sample, of which 1,087 firms are classified as tax haven firms. Each row reports a given statistic of the fraction of institutional holdings. Institutional type is categorized into independent and pressure-sensitive institutions as described in Ferreira and Matos (2008). Independent institutions are investment advisors, hedge funds, and investment companies, while pressure-sensitive institutions are banks, insurance companies, and pension funds. From Panel A, institutions own 15.54% of the shares of the sample firms. Most of this ownership is by independent institutions (14.71% independent investors versus 0.79% pressure-sensitive investors). The largest investors are shown to be investment advisors (9.38%), investment companies (3.10%), and hedge funds (2.22%). Comparing the ownership of tax haven firms to the overall average shows that institutions own a lower fraction of tax haven firms (15.54% vs. 6.74%). This is true for every institution type. Note

¹ Results for the income categories are skewed because there is only one country, Zimbabwe, classified as a Low-income category with 1 institution holding average of 2.64% of its total holdings in tax haven countries.

² This number is different from the ones from Table 1 because this sample deletes firms with missing data for the necessary variables, whereas Table 1 includes every company owned by the institutions included in our sample.

that the differences between ownership in all firms and tax haven firms is not as large when measured by the median. The median difference for independent institutional portfolios is around 3%, while the difference in pressure-sensitive institutions is zero. Pressure-sensitive investors are not likely to have much difference because their portfolios tend to be based on business linkages and not valuation assessments. Also note that this is a comparison between ownership in all firms and tax haven firms. The difference between tax haven firms and non-tax haven firms would be larger.

[Insert Table 4 about here]

4. Methods and Results

A. Institutional Ownership in Tax Haven Firms

To examine the relationship between institutional ownership and tax haven status, our intent is to conduct a multivariate analysis using panel regressions where the dependent variable is the annual aggregate fraction of institutional investor holdings in the sample firms and the main independent variable is the indicator variable denoting tax haven firms, as shown in equation (1). The firm Firm-level control variables are shown in Table 2. The specification with year and country fixed effect is:

$$IO_{i,k,t} = \alpha + \beta \text{Tax Haven Dummy}_{i,k} + \lambda \sum \text{Control Variables}_{i,k,t} + \varepsilon_{i,k,t}, \quad (1)$$

for a firm i , country k , and year t .

However, preliminary analysis indicated possible endogeneity issues in some of the investor type subsets. Therefore, we employ an instrumental variable and two-stage least square method to address the issue. A valid instrument needs to be correlated with the endogenous explanatory variable (relevance requirement) and should not be directly correlated with the error term (exogeneity requirement). We choose an industry-average tax haven dummy variable for each

firm as an instrument. We argue that 1) it is reasonable to assume the average tax haven dummy value is related to a tax haven dummy for a certain firm, and 2) with the industry fixed effect, the industry-average tax haven dummy variable is not likely to directly affect the institutional ownership at a firm level. The industry average tax haven dummy is calculated based on 2-digit SIC code. The specification for the first stage regression employing the industry-average tax haven dummy is as follows:

$$\text{TH Dummy}_{i,k} = \alpha + \beta \text{Ind.Ave TH Dummy}_{i,k} + \lambda \sum \text{Control Variables}_{i,k,t} + \varepsilon_{i,k,t}. \quad (2)$$

For the second stage least square regression, we estimate a modified version of equation (1) in which the firm's tax have dummy is replaced by its predicted value for the main explanatory variable, following the specification:

$$\text{IO}_{i,k,t} = \alpha + \beta \text{Pred. TH Dummy}_{i,k} + \lambda \sum \text{Control Variables}_{i,k,t} + \varepsilon_{i,k,t}, \quad (3)$$

We do not report the first stage regressions to conserve space. However, consistent with our conjecture, the instrumental variable is positively and significantly related to our main explanatory variable at the 1% level. The second stage, equation (3), is reported in Table 5 for the full sample of institutional investors and for subcategories. The control variables account for known institutional preferences like firm size, profitability, liquidity, etc. For the total sample of institutional investors, the coefficients for the Pred. TH Dummy is positive and significant at the 1 percent level. This indicates that institutions overweight tax haven firms (Hypothesis 1). The coefficient is also significantly positive for the group of independent institutions and individually for the three independent institutional types (investment advisors, investment companies, and hedge funds). However, the Pred. TH Dummy coefficient is not significant for the group of pressure-sensitive institutions nor for two of the institution types (insurance companies and

pensions). This indicates that pressure-sensitive institutions are indifferent about tax haven status (Hypothesis 2).

[Insert Table 5 about here]

A.1. Alternative Measure

Note that there are non-tax reasons a firm may incorporate in a tax haven, such as different governance laws. Indeed, investors might value the tax reason to incorporate in a tax haven, but not for lax governance rules. Thus, we focus our next analysis more directly on the tax issue. Specifically, we run regressions similar as those in Table 5, except that we replace the tax haven dummy variable with the difference in corporate tax rates between the country the firm is domiciled and where the firm is incorporated. The new variable, Tax Rate Diff, is the corporate tax rate for the country of domicile minus the country of incorporation rate. Again, we use an instrumental variable and two stage least squares approach to account for endogeneity issues. The instrumental variable is the industry average tax rate difference. The second stage specification is:

$$IO_{i,k,t} = \alpha + \beta \text{Pred. Tax Rate Dif}_{i,k,t} + \lambda \sum \text{Control Variables}_{i,k,t} + \varepsilon_{i,k,t}, \quad (4)$$

for a firm i , country k , and year t .

Table 6 reports the estimated regressions from equation (4). The results show that institutional investment is higher for the firms that have a higher domicile tax rate than the incorporation tax rate for all institutional investor categories. Therefore, seeking lower taxes appears to be a key reason that institutions overweight tax haven firms (Hypothesis 1). The subgroup results are similar to those in Table 5. The coefficient for the group of independent institutions is significantly positive, as it is for investment advisors and investment companies. One difference is that the coefficient for the hedge fund ownership is positive but not significant. The coefficient for the pressure-sensitive institutions is significantly positive. This appears to be

driven by pension funds as bank and insurance firm ownership does not appear to be related to tax rate differences (Hypothesis 2).

[Insert Table 6 about here]

B. Institutional Ownership, Tax Haven Firms, and Governance

Corporate governance considerations are also important for an investor. A body of literature (Chen and Lin (2017), Choi and Skiba (2015), Baik et al. (2010), and Kang and Stultz (1997) to name a few) document the importance of the quality of information and investor protection rights in investors' decision making. The information quality and investor protection rights in tax haven countries is often poor. However, they are also low in many non-tax haven countries. Thus, if information quality and governance characteristics are important, then institutions need to weigh the relative importance of lower tax rates versus lower governance standards.

We examine the impact of country governance characteristics and its interaction with the tax strategy. Specifically, we regress the fraction of institutional holdings in each firm on various country-level governance variables from the company's domicile country. The governance factors are the first principal component of several variables in the governance category (access to information, corporate transparency, investor rights, macroeconomic factors, and stock market development) as described in Section 3.B. The general specification is:

$$IO_{i,k,t} = \alpha + \beta \text{Tax Rate Dif}_{i,k,t} + \delta \text{Governance Factor}_k + \sigma \text{Governance Factor}_k \times \text{Tax Rate Dif}_{i,k,t} + \lambda \sum \text{Control Variables}_{i,k,t} + \varepsilon_{i,k,t}, \quad (5)$$

for a firm i , country k , and year t .

We first examine the relationship between investor ownership and the governance factors without the tax variable to establish the institutional investor preference for governance. Panel A

of Table 7 shows the results. Without the firm control variables, all governance factors are strongly related to institutional ownership. Also, the sign of the governance factor coefficients indicate that institutions prefer high quality information environments and strong corporate governance (Hypothesis 3). The last factor “All” is the first principal component including all variables used in the analyses.

Panel B shows the full model of equation (5), which add the firm-specific controls and the tax related variables. The results show that institutional investors value both good governance and low tax rates. Specifically, only the corporate transparency factor loses its significance when adding the additional variables. Also, in four of the six regressions, the coefficients for Tax Rate Difference are significantly positive, including for the principal component for the All Factor. These results show that institutional investors value both high corporate governance environments and tax rate benefits as described in our first and third hypotheses. However, how do institutions value tax havens with low governance but have high tax rate benefits? Or how do they value tax havens with high governance but low tax rate benefits? The interaction term between the governance variables and the tax rate difference tells us about the marginal effects when one variable is high and the other is low. Note that in these cases, the interaction variable is negative. The results show significantly negative coefficients in all six regressions. Thus, a negative coefficient with a negative interaction variable indicates an increase in institutional ownership. We conclude that institutional investors, as a group, value both good governance and tax benefits but do not require both to occur together. Therefore, corporate governance does not impact the desirability of tax haven firms as much as might be expected, as explored in Hypothesis 3.

[Insert Table 7 about here]

C. Institutional Investors in Tax Havens

Now we switch to a more direct focus on the institutional investors. Does their location or type matter for their propensity to invest in (or avoid) tax haven firms? Investors that are from tax haven countries likely have a more thorough understanding of the costs and benefits of companies incorporating there, as discussed in our fourth hypothesis. Also, some institutional types, like pension funds, may be more sensitive to public shaming of their investment choices. The prior analysis is conducted on the annual-firm level data. Thus, company and country control variables are implemented. Because this analysis focuses on the institutional investors, we switch to an investor-quarter sample. Thus, we can include investor descriptive independent variables, but no firm level control variables.

Regression equation (6) shows the Investor Tax Haven Dummy variable that is 1 if an institutional investor's home country is a tax haven country. Model 1 includes the Investor Tax Haven Dummy (*Inv_TH Dummy*) as the only explanatory variable. Model 2 explores the investor region and includes indicator variables for investor regions, East Asia & Pacific (EAP), Europe & Central Asia (ECA), Latin America & Caribbean (LAC), Middle East & North Africa (MEN), North America (NAM), and South Asia (SAS), with Sub-Saharan Africa as the omitted category. Model 3 explores the investor type and includes indicator variables for banks (BAN), hedge funds (HED), investment companies (INC), insurance companies (INS), and investment advisors (INV), with pensions & endowments as the omitted category.

$$\text{Holdings_Haven}_{i,q} = \alpha + \beta \text{Inv_TH Dummy}_i + \delta \text{Inv. Region}_i + \lambda \text{Inst. Type}_i + \varepsilon \quad (6)$$

Table 8 shows the results of three versions of institution-level panel regressions of equation (6). In all three Models, the Investor Tax Haven Dummy is significantly positive at the one percent level. Thus, investors that are located in tax havens invest a higher proportion of their portfolios in tax haven firms (Hypothesis 4). In Model 2, relative to the Sub-Saharan Africa region (the

omitted variable), investors located in the East Asia & Pacific, Europe & Central Asia, and North America regions hold a higher portfolio portion of tax haven firms.

[Insert Table 8 about here]

For Model 3, of the 892 investors located in tax haven countries, 12 are banks, 5 are insurance companies, 9 are pension funds, 77 are investment companies, 98 are hedge funds, and 691 are investment advisors. The regression results show that relative to pensions & endowments (the omitted variable), hedge funds, investment companies, and investment advisors have a significantly higher portion of portfolio holdings in tax haven companies.

In summary, this table provides evidence that tax haven institutional investors own a relatively higher proportion of tax haven companies. Thus, they must believe that the potential governance costs of a company incorporating in a tax haven does not outweigh the tax benefits as discussed in our fourth hypothesis.

5. Summary

We use quarterly institutional holdings data from over fifteen thousand investors worldwide that have equity positions in nearly sixty thousand companies from 142 countries. Some of these firms are incorporated in tax haven countries while operating in another domicile country. Tax haven countries provide firms the benefit of a reduced tax rate compared to the domiciled country but may also produce a higher agency cost due to lower corporate governance laws. How do institutional investors view these benefits versus costs? We first examine institutional ownership in firms and control for company characteristics. We find that institutional ownership is higher in tax haven firms, all else equal. Institutional ownership is higher in tax haven firms for all types of institutions except for certain pressure-sensitive institutions. To confirm that it is the lower tax rate that investors value, we examine whether institutional ownership is driven by the

tax rate difference between a firm's domicile country and incorporation country. Note the difference is zero for firms incorporated and domiciled in the same country. We also illustrate that investors consider the potential agency costs of incorporating in a country with potentially lower corporate governance standards. The institutional ownership of tax haven firms is mediated by governance and information environment standards.

We also examine the ownership of tax haven firms from the perspective of the investors' portfolios. Investors located in the geographic regions of East Asia & Pacific, Europe & Central Asia, and North America hold a relatively higher portfolio portion in tax haven firms. In addition, hedge funds, investment companies, and investment advisors have a significantly higher portion of portfolio holdings in tax haven companies. Lastly, some investors are incorporated in tax haven countries. Thus, they would have intimate knowledge of the benefits and costs of incorporating in tax haven countries. We find strong evidence that tax haven investors hold a higher portion of their portfolios in tax haven firms.

We conclude that institutional investors tend to value the tax benefits of firms incorporating in tax havens over the agency costs of weaker corporate governance as revealed by their higher ownership in tax haven firms. Future research might explore the change in company ownership structure when firms change their country of incorporation and when tax haven countries change their corporate governance policies.

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Table 1. Firms Domiciled and Incorporated in each Country

This table reports the number of firms domiciled and incorporated in each country, whether the country is considered a tax haven as defined by Dharmapala and Hines (D&H, 2006), and average corporate tax rate of each country, obtained from the Tax Foundation.

Country	# Firms incorporated	# Firms domiciled	Tax Haven	Average Tax rates
Argentina	83	91		32.52
Australia	2338	2351		35.21
Austria	154	154		34.38
Bangladesh	106	106		31.94
Belgium	284	285		37.97
Bermuda	807	160	1	0
Brazil	564	585		32.6
British Virgin Isla	207	32	1	8.68
Bulgaria	79	80		19.1
Canada	5300	5244		37.6
Cayman Islands	1986	85	1	0
Chile	173	177		25.72
China	4878	6014		33.28
Colombia	53	61		33.17
Croatia	123	123		21.76
Cyprus	84	86	1	23.81
Czech Republic	59	61		27.45
Denmark	291	294		32.4
Egypt	157	157		32.39
Finland	268	266		33.26
France	1325	1326		38.62
Germany	1334	1358		44.89
Greece	325	355		34.85
Guernsey	74	0	1	10.73
Hong Kong, Special	379	1556	1	16.8
Hungary	57	57		21.07
Iceland	50	51		22.9
India	2079	2085		40.62
Indonesia	473	478		31.19
Ireland	178	184	1	27.39
Isle of Man	61	0	1	10.53
Israel	945	972		29.63
Italy	685	697		39.46
Japan	5475	5476		40.58
Jersey	123	0	1	10.73
Jordan	49	50	1	26.61
Kenya	48	50		35.07
Korea, Republic of	2320	2326		27.24

Kuwait	108	108		41.41
Lithuania	54	54		19.66
Luxembourg	139	128	1	31.36
Malaysia	1082	1115		30.48
Marshall Islands	66	2	1	N/A
Mauritius	50	48		25.36
Mexico	213	219		34.09
Morocco	74	74		36.71
Netherlands	372	342		33.35
New Zealand	199	201		33.79
Nigeria	82	83		34.17
Norway	584	591		33.34
Oman	55	55		29.86
Pakistan	467	467		42.77
Peru	56	65		34.11
Philippines	227	228		32.95
Poland	671	671		25.9
Portugal	86	87		36.68
Qatar	52	53		32
Romania	268	270		23.79
Russian Federation	395	405		26.16
Saudi Arabia	206	206		33.69
Serbia	87	87		13.7
Singapore	761	785	1	25.74
Slovenia	98	98		21.81
South Africa	553	574		37.98
Spain	352	360		32.32
Sri Lanka	132	132		34.2
Sweden	973	971		33.67
Switzerland	431	456	1	25.63
Taiwan, Republic of	1637	1736		24.31
Thailand	664	668		27.93
Turkey	383	384		28.24
Ukraine	78	90		23.93
United Arab Emirate	92	111		0
United Kingdom	3463	3706		31.14
USA	18006	18071		39.8
Viet Nam	443	446		25.55
Total	68,169	68,169	28	

Table 2. Summary Statistics of Control Variables

This table displays the summary statistics of control variables for all firms in our sample (Panel A), and tax haven firms (Panel B). Log (BM) is log of book value of equity divided by market value of equity, Sales Growth Rate is an annual growth rate in sales, Turnover is annual share volume dividend by adjusted shares outstanding, ROE is return on equity, Total Debt Ratio is total debt divided by total assets, and Liquidity is cash and short-term investments divided by total assets, all from Factset Fundamentals database. Idiosyncratic Volatility is the residual from a regression of value-weighted market return, calculated using the entire universe of the stocks in each sample country, on a monthly return. Ann. Ret is the annual geometric rate of returns calculated using monthly returns. Corporate taxes are obtained from the Tax Foundation.

Variable	N	MEAN	STD	MEDIAN	MIN	MAX
Panel A: All Firms						
Log (BM)	42,569	-0.51	0.97	-0.43	-9.42	12.91
Sales growth rate	42,214	0.16	0.45	0.08	-0.92	4.60
Dividend yield	43,703	0.02	0.02	0.01	0	0.23
Share Turnover	44,318	1.50	6.79	0.58	0	713.85
ROE	43,189	-0.12	0.54	0.04	-4.32	0.77
Total debt ratio	44,457	0.24	0.23	0.19	0	1.40
Liquidity	41,536	0.19	0.25	0.13	-0.08	31.61
Market cap. (\$ millions)	44,483	1,528	8,813	145.84	0	498,969
Idiosyncratic volatility	44,539	0.16	0.12	0.13	0.03	0.87
Annual returns	44,421	0.14	0.44	0.12	-0.96	6.27
Taxes Domiciled (%)	44,539	30.30	7.25	30	0	55
Taxes Incorporated (%)	44,498	29.54	9.13	30	0	55
Panel B: Tax Haven Firms						
Log (BM)	1,088	-0.21	0.97	-0.12	-5.85	5.73
Sales Growth Rate	1,085	0.21	0.46	0.12	-0.92	4.60
Dividend Yield	1,103	0.02	0.02	0.01	0	0.13
Share Turnover	1,106	0.83	2.04	0.44	0	58.79
ROE	1,089	-0.10	0.39	0.02	-3.44	0.77
Total Debt Ratio	1,106	0.23	0.19	0.19	0	1.27
Liquidity	1,101	0.23	0.16	0.19	0	0.99
Market Cap (\$ Mil USD)	1,104	3,944	11,112	1,150	0.07	188,794
Idiosyncratic Volatility	1,106	0.19	0.10	0.17	0.03	0.87
Annual Returns	1,105	0.12	0.42	0.11	-0.87	5.11
Taxes Domiciled (%)	1,106	16.59	2.35	16.53	0	35
Taxes Incorporated (%)	1,098	2.12	7.79	0	0	39.32

Table 3. Distribution of Institutions by Country

Panel A reports the sample distribution of institutions by country. The list includes countries with at least 5 institutional investors. The second column shows the number of institutions from each country, and the next two columns show average percentage holdings of institutional investors in the firms classified as a tax haven defined by D&H (2006), respectively. The average percentage holding by institutions is calculated by summing up the dollar value of investments in tax haven firms for a given investor and divided by the total market value of his/her investment each quarter and calculate the time series average. The Region column denotes the geographical region of the institution. The region codes are EAP (East Asia and Pacific), ECA (Europe & Central Asia), LAC (Latin America & Caribbean), MEN (Middle East & North Africa), NAM (North America), SAS (South Asia), and SSA (Sub-Sahara Africa). The Income column denotes the country's income category. The income codes are HH (High), LM (lower middle), and UM (upper middle). Panel B shows the average percentage holdings of institutional investors in tax haven firms by institutions' region. Regions are from the World Bank. Panel C shows the average percentage holdings of institutional investors in tax haven firms by institutions' income categories. Income categories are from the World Bank. Panel D shows the average percentage holdings of institutional investors in tax haven firms by institution classification.

Panel A: Institution Country	Number of Institutions	Ave. Holdings % in Tax Haven	Region	Income	Tax Haven Country
Andorra	6	0.49%	ECA	HH	1
Argentina	5	0.00%	LAC	UM	0
Australia	169	0.54%	EAP	HH	0
Austria	97	0.84%	ECA	HH	0
Bahamas	12	0.70%	LAC	HH	1
Belgium	45	0.91%	ECA	HH	0
Bermuda	21	0.40%	NAM	HH	1
Bosnia and Herzegov	5	0.00%	ECA	UM	0
Brazil	452	0.02%	LAC	UM	0
Canada	431	0.30%	NAM	HH	0
Cayman Islands	16	0.66%	LAC	HH	1
Chile	22	0.03%	LAC	HH	0
China	193	0.39%	EAP	UM	0
Croatia	15	0.56%	ECA	HH	0
Cyprus	5	1.49%	ECA	HH	1
Czech Republic	11	0.74%	ECA	HH	0
Denmark	53	0.65%	ECA	HH	0
Estonia	9	0.45%	ECA	HH	0
Finland	54	1.03%	ECA	HH	0
France	366	0.51%	ECA	HH	0
Germany	544	0.58%	ECA	HH	0
Gibraltar	7	1.37%	ECA	HH	1
Greece	26	0.35%	ECA	HH	0
Hong Kong, Special	240	8.44%	EAP	HH	1
Hungary	10	0.18%	ECA	HH	0
Iceland	5	0.06%	ECA	HH	0

India	67	0.41%	SAS	LM	0
Indonesia	7	0.04%	EAP	LM	0
Ireland	42	0.49%	ECA	HH	1
Israel	65	0.39%	MEN	HH	0
Italy	106	0.69%	ECA	HH	0
Japan	130	0.19%	EAP	HH	0
Korea, Republic of	30	0.32%	EAP	HH	0
Liechtenstein	72	1.45%	ECA	HH	1
Lithuania	5	0.05%	ECA	HH	0
Luxembourg	167	1.11%	ECA	HH	1
Malaysia	35	1.36%	EAP	UM	0
Malta	15	0.19%	MEN	HH	1
Mexico	36	0.11%	LAC	UM	0
Monaco	7	0.35%	ECA	HH	1
Netherlands	85	0.72%	ECA	HH	0
New Zealand	16	0.31%	EAP	HH	0
Norway	44	0.88%	ECA	HH	0
Oman	10	0.00%	MEN	HH	0
Pakistan	19	0.00%	SAS	LM	0
Philippines	5	0.23%	EAP	LM	0
Poland	49	0.08%	ECA	HH	0
Portugal	52	0.25%	ECA	HH	0
Puerto Rico	10	0.79%	LAC	HH	0
Romania	21	0.00%	ECA	UM	0
Russian Federation	9	1.13%	ECA	UM	0
Saudi Arabia	10	0.18%	MEN	HH	0
Singapore	120	5.45%	EAP	HH	1
Slovakia	8	0.35%	ECA	HH	0
Slovenia	9	0.52%	ECA	HH	0
South Africa	224	0.59%	SSA	UM	0
Spain	185	0.33%	ECA	HH	0
Sweden	152	0.38%	ECA	HH	0
Switzerland	503	1.26%	ECA	HH	1
Taiwan, Republic of	43	1.55%	EAP	HH	0
Thailand	21	0.77%	EAP	UM	0
Turkey	14	0.00%	ECA	UM	0
United Arab Emirate	23	0.17%	MEN	HH	0
United Kingdom	908	1.23%	ECA	HH	0
United States of Am	9,577	0.43%	NAM	HH	0
Viet Nam	9	0.11%	EAP	LM	0
Average (Total)	15,781	0.66%			

Panel B		
Region Code	Region	Ave. Holdings % In Tax Haven
EAP	East Asia & Pacific	1.51%
ECA	Europe & Central Asia	0.57%
LAC	Latin America & Caribbean	0.50%
MEN	Middle East & North Africa	0.20%
NAM	North America	0.38%
SAS	South Asia	0.14%
SSA	Sub-Saharan Africa	1.03%

Panel C:		
Income Code	Income Level	Ave. Holdings % in Tax Haven
HH	High	0.80%
LL	Low	2.64%
LM	Lower middle	0.23%
UM	Upper Middle	0.38%

Panel D:		
Type Code	Type	Ave. Holdings % in Tax Haven
BAN	Banks	0.17%
HED	Hedge Funds	1.10%
INC	Investment Companies	0.76%
INS	Insurance Companies	0.16%
INV	Investment Advisors	0.64%
PEN	Pensions & Endowment	0.26%

Table 4. Summary Statistics of Institutional Holdings

This table shows the summary statistics of percentage holdings of institutional investors for all firms (Panel A), and tax haven firms (Panel B). There are total of 48,471 firms, and 1,087 firms classified as tax haven firms. Each column denotes a given statistic of percentage holdings of all institutions, by institution type, independent investors (Investment advisors, hedge funds, investment companies) and pressure-sensitive investors (banks, insurance companies, and pension funds).

STAT	Total Ownership	Bank	Insurance Companies	Investment Companies	Investment Advisors	Pension Funds	Hedge Funds	Independent	Pressure Sensitive
Panel A: All firms, N=48,471									
MEAN	0.1554	0.0002	0.0006	0.0310	0.0938	0.0072	0.0222	0.1471	0.0079
STD	0.2417	0.0022	0.0066	0.0597	0.1469	0.0199	0.0597	0.2306	0.0218
MED	0.0471	0	0	0.0048	0.0279	0	0.0002	0.0442	0.0001
MIN	0	0	0	0	0	0	0	0	0
MAX	1	0.2985	0.5460	1	1	1	1	1	1
Panel B: Tax Haven Firms, N=1,087									
MEAN	0.0674	0.0000	0.0001	0.0134	0.0436	0.0030	0.0074	0.0643	0.0030
STD	0.1567	0.0002	0.0011	0.0357	0.1015	0.0121	0.0343	0.1528	0.0123
MED	0.0157	0	0	0.0010	0.0091	0	0	0.0139	0
MIN	0	0	0	0	0	0	0	0	0
MAX	1	0.0074	0.0369	0.4476	0.8101	0.3137	0.5236	0.9988	0.3137

Table 5. The Impact of Tax Haven Firms on Institutional Holdings

This table shows the results of two stage least square regressions where the dependent variable is the annual aggregate percentage holdings of institutional investors in the sample firms and the main independent variable is the indicator variable denoting a tax haven firm (Pred. Tax Haven Dummy). Dependent Variables include all institutional ownership (Total), Independent institutional ownership (Investment advisors, Hedge funds, Investment Companies, and Investment Advisors), and pressure sensitive institutional ownership (Banks, Pension Funds, Insurance Companies). All regressions are run with year, country, and industry fixed effects, and robust clustered errors at the firm level. P-values are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 5% level, respectively.

	Total	Independent	Inv. Advisors	Inv. Companies	Hedge Funds
Intercept	-0.4252 (0.00)***	-0.3961 (0.00)***	-0.2488 (0.00)***	-0.1042 (0.00)***	-0.0432 (0.00)***
Pred. Tax Haven Dummy	1.2192 (0.00)***	1.1878 (0.00)***	0.7733 (0.00)***	0.1991 (0.07)***	0.2153 (0.04)**
Size	0.0577 (0.00)***	0.0533 (0.00)***	0.0371 (0.00)***	0.0138 (0.00)***	0.0024 (0.00)***
Dividend Yield	-0.4994 (0.00)***	-0.4872 (0.00)***	-0.2596 (0.00)***	-0.1304 (0.00)***	-0.0973 (0.00)***
Sales Growth Rate	-0.0078 (0.00)***	-0.0066 (0.00)***	-0.0054 (0.00)***	-0.0019 (0.00)***	0.0006 (0.02)**
Total Debt Ratio	0.0069 (0.34)	0.0044 (0.52)	-0.0008 (0.87)	0.0034 (0.10)	0.0018 (0.41)
ROE	0.0255 (0.00)***	0.0252 (0.00)***	0.0222 (0.00)***	0.0074 (0.00)***	-0.0043 (0.00)***
Liquidity	0.0045 (0.26)	0.0046 (0.26)	0.0009 (0.36)	0.0003 (0.39)	0.0034 (0.24)
Annual Returns	-0.0016 (0.08)*	-0.0008 (0.34)	-0.0006 (0.29)	-0.0015 (0.00)***	0.0013 (0.00)***
ADR Dummy	0.1759 (0.00)***	0.1683 (0.00)***	0.1185 (0.00)***	0.0347 (0.00)***	0.0151 (0.00)***
Idiosyncratic Volatility	-0.2839 (0.00)***	-0.2758 (0.00)***	-0.1829 (0.00)***	-0.0710 (0.00)***	-0.0218 (0.00)***
Log(BM)	0.0216 (0.00)***	0.0196 (0.00)***	0.0133 (0.00)***	0.0030 (0.00)***	0.0032 (0.00)***
Share Turnover	0.0048 (0.00)***	0.0046 (0.00)***	0.0030 (0.00)***	0.0012 (0.00)***	0.0005 (0.00)***
Adj. R ²	0.5072	0.4953	0.4444	0.4168	0.2490
# Obs.	307,198	307,198	307,198	307,198	307,198

Table 5. Continued.

	Pressure Sensitive	Banks	Insurance	Pension
Intercept	-0.0290 (0.00)***	-0.0008 (0.00)***	-0.0016 (0.00)***	-0.0266 (0.00)***
Pred. Tax Haven Dummy	0.0315 (0.56)	0.0090 (0.02)**	0.0084 (0.78)	0.0141 (0.74)
Size	0.0044 (0.00)***	0.0001 (0.00)***	0.0003 (0.00)***	0.0040 (0.00)***
Dividend Yield	-0.0122 (0.00)***	-0.0001 (0.57)	0.0052 (0.03)**	-0.0172 (0.00)***
Sales Growth Rate	-0.0011 (0.00)***	0.0000 (0.00)***	0.0000 (0.99)	-0.0011 (0.00)***
Total Debt Ratio	0.0025 (0.01)**	0.0000 (0.92)	0.0002 (0.67)	0.0023 (0.00)***
ROE	0.0003 (0.39)	0.0000 (0.09)*	-0.0002 (0.09)*	0.0005 (0.05)*
Liquidity	-0.0001 (0.30)	0.0000 (0.47)	0.0000 (0.50)	-0.0001 (0.32)
Annual Returns	-0.0008 (0.00)***	0.0000 (0.57)	0.0000 (0.44)	-0.0008 (0.00)***
ADR Dummy	0.0076 (0.00)***	0.0000 (0.13)	0.0005 (0.00)***	0.0070 (0.00)***
Idiosyncratic Volatility	-0.0081 (0.00)***	-0.0003 (0.15)	-0.0016 (0.35)	-0.0062 (0.00)***
Log(BM)	0.0020 (0.00)***	0.0001 (0.00)***	0.0001 (0.13)	0.0018 (0.00)***
Share Turnover	0.0002 (0.00)***	0.0000 (0.00)***	0.0000 (0.23)	0.0002 (0.00)***
Adj. R ²	0.2647	-0.0911	0.0351	0.2885
# Obs.	307,198	307,198	307,198	307,198

Table 6. The Impact of Tax Haven Firms on Institutional Holdings – Tax Rate Difference

This table shows the results of two stage least square regressions where the dependent variable is the annual aggregate percentage holdings of institutional investors in the sample firms and the main independent variable, Pred. Tax Rate Difference is predicted difference in corporate tax rates between a country the firm is domiciled and where the firm is incorporated from the first stage regression. Dependent Variables include all institutional ownership (Total), Independent institutional ownership (Investment advisors, Hedge funds, Investment Companies, and Investment Advisors), and pressure sensitive institutional ownership (Banks, Pension Funds, Insurance Companies). All regressions are run with year, country, and industry fixed effects, and robust clustered errors at the firm level. P-values are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 5% level, respectively.

	Total	Independent	Inv. Advisors	Inv. Companies	Hedge Funds
Intercept	-0.4205 (0.00)***	-0.3919 (0.00)***	-0.2488 (0.00)***	-0.1027 (0.00)***	-0.0428 (0.00)***
Pred. Tax Rate Difference	0.0062 (0.02)**	0.0055 (0.03)**	0.7733 (0.00)***	0.0020 (0.01)**	0.0004 (0.62)
Size	0.0561 (0.00)***	0.0518 (0.00)***	0.0371 (0.00)***	0.0135 (0.00)***	0.0021 (0.00)***
Dividend Yield	-0.5400 (0.00)***	-0.5252 (0.00)***	-0.2596 (0.00)***	-0.1401 (0.00)***	-0.1023 (0.00)***
Sales Growth Rate	-0.0079 (0.00)***	-0.0067 (0.00)***	-0.0054 (0.00)***	-0.0019 (0.00)***	0.0006 (0.02)**
Total Debt Ratio	0.0249 (0.00)***	0.0220 (0.00)***	-0.0008 (0.87)	0.0063 (0.00)***	0.0050 (0.00)***
ROE	0.0313 (0.00)***	0.0309 (0.00)***	0.0222 (0.00)***	0.0084 (0.00)***	-0.0034 (0.00)***
Liquidity	0.0045 (0.27)	0.0046 (0.26)	0.0009 (0.36)	0.0002 (0.58)	0.0035 (0.23)
Annual Returns	-0.0038 (0.00)***	-0.0029 (0.00)***	-0.0006 (0.29)	-0.0019 (0.00)***	0.0010 (0.00)***
ADR Dummy	0.1587 (0.00)***	0.1531 (0.00)***	0.1185 (0.00)***	0.0288 (0.00)***	0.0142 (0.00)***
Idiosyncratic Volatility	-0.2369 (0.00)***	-0.2293 (0.00)***	-0.1829 (0.00)***	-0.0648 (0.00)***	-0.0125 (0.00)***
Log(BM)	0.0166 (0.00)***	0.0149 (0.00)***	0.0133 (0.00)***	0.0020 (0.00)***	0.0025 (0.00)***
Share Turnover	0.0049 (0.00)***	0.0047 (0.00)***	0.0030 (0.00)***	0.0012 (0.00)***	0.0005 (0.00)***
Adj. R ²	0.6507	0.6454	0.4444	0.4695	0.3509
# Obs.	307,198	307,198	307,198	307,198	307,198

Table 6. Continued.

	Pressure Sensitive	Banks	Insurance	Pension
Intercept	-0.0286 (0.00)***	-0.0008 (0.00)***	-0.0016 (0.00)***	-0.0261 (0.00)***
Pred. Tax Rate Difference	0.0007 (0.03)**	0.0000 (0.85)	0.0000 (0.83)	0.0007 (0.01)**
Size	0.0043 (0.00)***	0.0001 (0.00)***	0.0002 (0.00)***	0.0040 (0.00)***
Dividend Yield	-0.0148 (0.00)***	-0.0003 (0.18)	0.0052 (0.03)**	-0.0197 (0.00)***
Sales Growth Rate	-0.0012 (0.00)***	0.0000 (0.01)**	0.0000 (0.96)	-0.0011 (0.00)***
Total Debt Ratio	0.0029 (0.00)***	0.0001 (0.00)***	0.0003 (0.19)	0.0025 (0.00)***
ROE	0.0005 (0.01)**	0.0000 (0.94)	-0.0002 (0.00)***	0.0006 (0.00)***
Liquidity	-0.0001 (0.14)	0.0000 (0.31)	0.0000 (0.69)	-0.0001 (0.11)
Annual Returns	-0.0009 (0.00)***	0.0000 (0.28)	-0.0001 (0.01)**	-0.0008 (0.00)***
ADR Dummy	0.0056 (0.00)***	0.0000 (0.71)	0.0007 (0.23)	0.0049 (0.00)***
Idiosyncratic Volatility	-0.0077 (0.00)***	0.0001 (0.46)	-0.0011 (0.01)**	-0.0066 (0.00)***
Log(BM)	0.0018 (0.00)***	0.0000 (0.00)***	0.0001 (0.04)**	0.0016 (0.00)***
Share Turnover	0.0002 (0.00)***	0.0000 (0.00)***	0.0000 (0.54)	0.0002 (0.00)***
Adj. R ²	0.2687	0.0283	0.0400	0.28205
# Obs.	307,198	307,198	307,198	307,198

Table 7. The Impact of Country-Level Governance Factors on Institutional Holdings

This table shows the results of panel regressions where the dependent variable is the annual aggregate percentage holdings of institutional investors in the sample firms and the main independent variables are country-level governance factors developed by Choi and Skiba (2015). Each variable is the first principal component of various factors related to five areas: access to information, corporate transparency, investor rights, macroeconomy, and stock market development. The variable “All” is the first principal component of all variables used in the analyses. Panel B includes the difference in corporate tax rates between domiciled and incorporated countries and the interaction term between the tax difference and the information asymmetry variable, as well as firm-level control variables. All regressions are run with year, and industry fixed effects, and robust clustered errors at the firm level. P-values are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 5% level, respectively.

Panel A: Dependent Variable - Total Firm-Level Institutional Ownership						
Intercept	0.0314 (0.11)	0.0915 (0.00)***	0.0064 (0.75)	0.0620 (0.00)***	0.0337 (0.00)***	0.0697 (0.00)***
Access to Information	0.1040 (0.00)***					
Corporate Transparency		-0.0053 (0.00)***				
Investor Rights			0.1046 (0.00)***			
Macro				0.1071 (0.00)***		
Market					0.0949 (0.00)***	
All						0.0740 (0.00)***
Adj. R2	0.0957	0.0393	0.1098	0.0902	0.0540	0.0722
# Obs.	312,438	324,976	329,769	380,776	346,336	285,258

Table 7. Continued

Panel B: Dependent Variable - Total Firm-Level Institutional Ownership						
Intercept	0.1362 (0.00)***	0.2376 (0.00)***	0.0315 (0.18)	0.1222 (0.00)***	0.2213 (0.00)***	0.1720 (0.00)***
Access to Information	0.1164 (0.00)***					
Corp Transparency		-0.0011 (0.58)				
Investor Rights			0.1589 (0.00)***			
Macro				0.1349 (0.00)***		
Market					0.0421 (0.00)***	
All						0.0907 (0.00)***
Tax Rate Dif.	0.0005 (0.64)	0.0008 (0.46)	0.0138 (0.00)***	0.0017 (0.00)***	0.0054 (0.00)****	0.0020 (0.09)***
Gov. Factor × Tax Rate Dif.	-0.0069 (0.00)***	-0.0032 (0.00)***	-0.0169 (0.00)***	-0.0057 (0.00)***	-0.0050 (0.00)***	-0.0100 (0.00)***
Size	-0.0021 (0.01)**	-0.0066 (0.00)***	0.0084 (0.00)***	-0.0013 (0.01)**	-0.0065 (0.00)***	-0.0013 (0.15)
Dividend Yield	-1.1921 (0.00)***	-1.3157 (0.00)***	-1.2723 (0.00)***	-0.8208 (0.00)***	-0.8952 (0.00)***	-1.4446 (0.00)***
Sales Growth Rate	-0.0087 (0.00)***	-0.0098 (0.00)***	-0.0118 (0.00)***	-0.0054 (0.00)***	-0.0110 (0.00)***	-0.0121 (0.00)***
Total Debt Ratio	0.1149 (0.00)***	0.0937 (0.00)***	0.1048 (0.00)***	0.0809 (0.00)***	0.0770 (0.00)***	0.1148 (0.00)***
ROE	0.1075 (0.00)***	0.0929 (0.00)***	0.0945 (0.00)***	0.0928 (0.00)***	0.0735 (0.00)***	0.1061 (0.00)***
Liquidity	-0.0072 (0.18)	-0.0033 (0.18)	-0.0035 (0.12)	-0.0060 (0.18)	-0.0016 (0.25)	-0.0050 (0.16)
Annual Returns	-0.0125 (0.00)***	-0.0167 (0.00)***	-0.0108 (0.00)***	-0.0100 (0.00)***	-0.0104 (0.00)***	-0.0139 (0.00)***
ADR Dummy	0.2518 (0.00)***	0.0936 (0.00)***	0.1545 (0.00)***	0.1802 (0.00)***	0.1418 (0.00)***	0.2134 (0.00)***
Idiosyncratic Volatility	-0.4526 (0.00)***	-0.5077 (0.00)***	-0.4234 (0.00)***	-0.3448 (0.00)***	-0.4788 (0.00)***	-0.4743 (0.00)***
Log(BM)	-0.0732 (0.00)***	-0.0780 (0.00)***	-0.0586 (0.00)***	-0.0600 (0.00)***	-0.0553 (0.00)***	-0.0765 (0.00)***
Share Turnover	0.0098 (0.00)***	0.0117 (0.00)***	0.0093 (0.00)***	0.0071 (0.00)***	0.0075 (0.00)***	0.0114 (0.00)***
Adj. R2	0.2247	0.1546	0.2722	0.1878	0.1401	0.2090
# Obs.	246,488	256,429	260,100	306,052	278,734	225,412

Table 8. Institutional Level Holdings in Tax Haven Countries

This table reports quarterly panel regression results where the dependent variable is each institution's percentage holding in tax haven securities and the main dependent variable is an indicator variable for the institution's home country being a tax haven country. Model 2 includes categorical variables for the geographical region of the institution. The region codes are EAP (East Asia and Pacific), ECA (Europe & Central Asia), LAC (Latin America & Caribbean), MEN (Middle East & North Africa), NAM (North America), SAS (South Asia), and SSA (Sub-Sahara Africa, base category). Model 3 includes categorical variables for the types of institutions. The Type codes are BAN (Banks), HED (Hedge funds), INC (Investment Companies), INS (Insurance Companies), INV (Investment Advisors), and PEN (Pension Funds, base category). All regressions are run with the institution level clustered errors, and quarter fixed effects. P-values are in parentheses. ***, **, and * denote significance at the 1%, 5%, and 5% level, respectively.

	Model 1	Model 2	Model 3
Intercept	0.0057 (0.00)***	0.0052 (0.00)***	0.0026 (0.00)***
Investor Tax Haven Dummy	0.0260 (0.00)***	0.0217 (0.00)***	0.0265 (0.00)***
EAP		0.0171 (0.00)***	
ECA		-0.0005 (0.46)	
LAC		-0.0061 (0.00)***	
MEN		-0.0049 (0.00)***	
NAM		-0.0002 (0.71)	
SAS		-0.0016 (0.63)	
BAN			-0.0026 (0.06)*
HED			0.0076 (0.00)***
INC			0.0040 (0.00)***
INS			-0.0005 (0.53)
INV			0.0019 (0.00)***
Adj. R ²	0.0489	0.0668	0.0533
# Obs.	447,444	447,444	447,444