

Income and non-income tax avoidance: Complements or substitutes?

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Abstract: Corporations' contribution to tax revenues is increasingly under public scrutiny, and a large academic literature is devoted to understanding corporate *income tax* avoidance. I examine whether tax avoidance extends to *non-income taxes* – i.e., taxes for which the tax base is not income. Taxing authorities around the world rely on non-income taxes for revenue. Despite the importance of these taxes from a public finance perspective, we know little about the extent to which corporations remit these taxes. Using a sample of U.S.-based multinational corporations, I present descriptive data indicating significant variation – across industries, countries, and firms – in the magnitude of non-income-tax remittances. In multivariate tests, I find that the accounting effective tax rate, a proxy for the extent of income tax planning, is positively associated with non-income-tax remittances, suggesting tax avoidance is aimed at all taxes. I also find that industrial diversification, a proxy for tax compliance complexity, is positively associated with non-income-tax remittances, despite existing evidence that the coinsurance benefits of diversification reduces a firm's income tax liabilities.

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Keywords: corporate tax avoidance, tax mix, tax composition, non-income tax

Data availability: Bureau of Economic Analysis (BEA) data are available to the author under a legal confidentiality arrangement; all non-BEA data are available from public sources.

For helpful comments and discussions, I thank Jennifer Blouin, Lisa De Simone, Sanjay Gupta, Justin Hopkins, Pete Lisowsky, Dan Lynch, Kevin Markle, Janet Kerr (discussant), Tom Neubig, Ed Outslay, John Phillips, George Plesko, Bob Resutek, Richard Sansing, Jeri Seidman, Joel Slemrod, Bill Zeile, and participants at the Michigan State University Plante & Moran Lecture Series and 2011 University of North Carolina Tax Symposium. Statistical analysis of firm-level data on U.S. multinational firms was conducted at the International Investment Division, Bureau of Economic Analysis, U.S. Department of Commerce under arrangements that maintain legal confidentiality requirements. The views expressed are those of the author and do not reflect official positions of the U.S. Department of Commerce.

1. Introduction

Numerous studies examine the magnitude, determinants, and consequences of corporate *income tax* avoidance (Hanlon and Heitzman 2010; Shackelford and Shevlin 2001).¹ Yet, Christensen et al. (2001) report aggregate data showing that the corporate income tax represents 27 percent of all taxes remitted by U.S. corporations in 1999, and Desai et al. (2004) report that the aggregate ratio of non-income taxes (i.e., taxes for which the tax base is not income) to income taxes remitted by foreign affiliates of U.S.-based multinational corporations (MNCs) in 1994 is 3.5.^{2,3} A natural question arises: Do firms that avoid income taxes also avoid non-income taxes? Or, does the focus on income tax avoidance, well documented in the academic literature, preclude efforts aimed at non-income-tax avoidance? My study has two objectives: First, I present stylized facts about the composition of taxes remitted by 3,100 MNCs from 1982 to 2008. Second, I examine determinants of non-income taxes remitted by these MNCs.

All taxing authorities around the world rely, in part, on non-income taxes as a source of revenue. According to the OECD (2010) categorization, the six sources of tax revenue for a country are (1) taxes on income, profits, and capital gains, (2) social security contributions, (3) taxes on payroll and workforce, (4) taxes on property, (5) taxes on goods and services, and (6) other taxes. To illustrate, the share of total tax revenue from non-income taxes (i.e., other than category 1) in the U.S. across all levels of government is 53 percent (OECD 2010).⁴ Many of

¹ The term ‘tax avoidance’ refers to the legal utilization of the tax regime to one’s own advantage through tax planning, with the objective of minimizing the amount of tax payable to a government (see Hanlon and Heitzman 2010). I do not imply any wrongdoing on the part of the firm.

² In Christensen et al. (2001), indirect business taxes (e.g., sales, excise, VAT, property, customs duties) represent another 46 percent, while social insurance contributions (e.g., unemployment, old-age, disability, hosp. insurances, and workers’ comp.) represent the remaining 27 percent.

³ I use the term ‘remit’ to refer to some person or entity in the private sector writing a check or otherwise transmitting funds to the tax authority (Slemrod 2008, 252). Slemrod (2008) describes how an alternative phrase – ‘pay tax’ – comingles the concepts of tax remittance and tax incidence. I discuss this further in Section 2.1.

⁴ To illustrate the importance of non-income taxes from a public finance perspective, I report the average ratio of tax revenue from taxes in categories 2 through 6 to total tax revenue from 1965 through 2008. I include all levels of

these taxes are imposed at the state level (see Figure 2); the average share of total tax revenue raised from non-income taxes by the 50 U.S. States is 75 percent (FTA 2010). In countries outside the U.S., reliance on non-income taxes is greater. Data for 29 non-U.S. OECD countries reveal, on average, 65 percent of total revenue from non-income taxes (see Figure 1).

Despite the importance of these taxes from a public finance perspective, we know very little about firms' contribution to total tax revenues. Christensen et al. (2001) highlights that non-income taxes are "hidden" because they are not separately reported on the income statement, and are instead buried in various expense line items in pre-tax income (e.g., excise taxes in cost of goods sold, property taxes in administrative expenses, payroll taxes in compensation expense).⁵ The lack of public disclosure makes it hard for corporate stakeholders to understand the magnitude and nature of all of the taxes corporations remit, placing a "disproportionate focus" (Ibid, 495) on income taxes in policy debates and benchmarking studies. Beginning in 2005, PricewaterhouseCoopers (PWC) and the World Bank Group (WBG) attempted to remedy this situation by publishing a series of studies that offer a more complete picture of companies' contributions to government revenues (PWC 2005; WBG & PWC 2010). The descriptive aspects of this paper complement the efforts of both organizations.

government. Other organizations, such as the World Bank Group (WBG), report data on the tax revenue mix for non-OECD countries, but the reported figures include only national government revenue making it difficult to get an overall sense for the tax revenue mix of non-OECD countries. While my study focuses on non-income taxes remitted by corporations, these figures include non-income taxes remitted by individuals. Revenue statistics that separate individual from corporate tax revenue are not consistent across countries, thus, I do not make use of them.

⁵ In fact, during the time period 1982 through 2008 covered in this study, only 98 firms out of 20,017 publicly report non-income taxes separately either on the face of the income statement or in a footnote. I determined this figure by looking for non-zero values in Compustat variables TXW and TXVA. An overwhelming majority of these cases were amounts reported for excise taxes remitted by oil and tobacco companies. For instance, in 2008, Philip Morris reported \$37,935 million in excise taxes and \$2,787 million of income taxes.

This study makes use of data collected by the Bureau of Economic Analysis (BEA) from MNCs that features the separate reporting of taxes by type at the legal entity-level.⁶ Referring to the six OECD categories described earlier, BEA data contain three separate tax amounts which I refer to as follows: (1) income taxes, (2) other taxes (i.e., taxes in categories 4, 5, and 6) and (3) employer contributions (i.e., taxes in categories 2 and 3). Hereafter, ‘all taxes’ refers to the sum of these three amounts, while ‘non-income taxes’ refers to the latter two amounts, unless otherwise noted.⁷

An examination of 60,258 entity-year observations reveals that the ratio of income taxes to all taxes (excluding employer contributions) is 65 percent, on average, with significant variation suggested by a median of 85 percent and a standard deviation of 40 percent. When employer contributions are included in all taxes, the mean (median) ratio of income taxes to all taxes is 39 (35) percent. When I compute the ratio of income taxes to all taxes (excluding employer contributions) separately for U.S. and non-U.S. entities, the mean is 69 and 64 percent, respectively. This raises the interesting question as to whether multinationals more generally avoid taxes by locating factors of production in low income tax jurisdictions, or whether they ultimately shift the mix of taxes they remit from income taxes to non-income taxes.

Non-income taxes appear to vary significantly both within and across countries and industries. The mean (median) ratio of income taxes to all taxes (excluding employer contributions) varies by industry with entities in the Services industry reporting 68 (94) percent, at the high end, and entities in the Petroleum industry reporting 53 (66) percent, at the low end. The picture changes when employer contributions are included in all taxes. The labor-intensive

⁶ Both Christensen et al. (2001) and Desai et al. (2004) use BEA data. The U.S. domestic operation is reported as a single legal entity. Amounts reported to the BEA are not restricted to cash tax payments. Income taxes reflect the total provision for income taxes in accordance with GAAP. Non-income taxes reflect amounts paid in cash or accrued during the year. BEA data are described in more detail in Section 3.1.

⁷ Employer contributions in BEA data include voluntary contributions, described in more detail in Section 3.1.

Services industry shows a mean ratio of income taxes to all taxes of just 34 percent (among the lowest), while the capital-intensive Petroleum industry show a mean ratio of 42 percent (among the highest). At the country-level, it is interesting to note that tax haven countries appear both on the list of countries with the highest mean ratio of income taxes to all taxes, as well as the lowest, again raising the possibility that income taxes alone do not portray a full picture of the corporate tax function or the impact of location decisions on total taxes remitted.

Uncovering sources of variation in non-income tax remittances at the firm-level is the second objective of this study. I expect variation in non-income taxes to arise from three sources: (1) the business strategy and activities of the firm, (2) the extent of the firm's focus on income tax planning, and (3) the extent of difficulty the firm faces with respect to tax compliance. My empirical approach is to examine whether, after controlling for the business activities of the firm, I find a significant relation between the extent of income tax planning (using a proxy for a firm's level of income tax avoidance) and non-income taxes, and between tax compliance (using a proxy for the complexity of a firm's tax compliance requirements) and non-income taxes.

Aside from the policy importance of tax avoidance eroding the tax base, understanding corporate *non-income-tax* avoidance is important for at least three reasons. First, tax policy proposals that reduce a government's reliance on income taxes must anticipate tax avoidance transactions that would be available or created by taxpayers in order to avoid their tax obligations. This is particularly important when the motivation for moving away from income taxes is to reduce taxpayers' opportunities to tax plan.⁸ Second, non-income taxes differ from income taxes in ways that imply significant benefits to firms that avoid them. For instance, many non-income taxes are due without regard to the firm's level of profitability, so non-income tax

⁸ Some studies have considered, for instance, the importance of thinking about tax avoidance opportunities available under a flat tax in the United States (e.g., Bankman and Schler 2005; Calegari 1998).

avoidance is particularly important for firms that are prone to fluctuations in profitability. Also, avoidance of non-income taxes, all else equal, improves gross margins and operating profitability, which for some firms are metrics of relatively greater importance than net income (Robinson 2010; Phillips 2003). Third, all tax avoidance impacts shareholders because these activities create tax risk, which arises from exposing a firm to unexpected monetary, operational and reputational outcomes from its tax positions (Neubig and Sangha 2004). Consequently, recent disclosure regulations imposed on U.S. firms require more transparency about their uncertain tax positions. However, these disclosure regulations *explicitly exclude non-income taxes*, which still fall under accounting rules for contingent liabilities.⁹ Given the magnitude of non-income taxes for some firms and benefits to avoiding them, it seems likely that that non-income tax avoidance exists and that these taxes could create significant (undisclosed) tax risk.¹⁰

When I examine the role of business activities in explaining variation in non-income taxes (excluding employer contributions), I find a significantly positive coefficient on inventory, imports, value-added, and firm size, and a significantly negative coefficient on the percent of foreign sales. Other variables included in the model such as fixed assets, cross-border sales, and profit margin, are sensitive to alternate measures of the dependent variable. When I include employer contributions in the dependent variable, I find a significant positive coefficient on the

⁹ FASB ASC 740-10, *Accounting for Uncertainty in Income Taxes—an interpretation of FASB Statement No. 109* (formerly FIN 48) and IRS *Schedule UTP, Uncertain Tax Positions Statement (Federal Register (REG-119046-10))*, respectively, were introduced. In fact, FASB ASC 740-10 reports that “The Board considered whether to apply the provisions of this Interpretation to all taxes (income taxes and other taxes)...”, and ultimately decided that ASC 740-10 would “apply to all tax positions accounted for in accordance with FASB Statement No. 109, (*Accounting for Income Taxes*).” To my knowledge, there is no indication in public documents as to reason that non-income taxes were ultimately excluded from FASB ASC 740, Income Taxes. IRS Announcement 2010-30 generally states that an uncertain tax position (UTP) includes a position for which a tax reserve must be established under ASC 740-10. Thus, Schedule UTP implicitly excludes non-income tax positions. Non-income tax reserves are still governed by FASB ASC 450, Contingencies (formerly SFAS 5).

¹⁰ Shareholders also face other risks related to non-income taxes. Consider the fine imposed by the Securities and Exchange Commission on Hudson Highland Group in 2011 for lacking adequate sales tax controls. Thus, even in a simple world where non-income taxes simply ‘flow through’ the organization (i.e., they are collected and remitted to the government), non-income taxes create risk that shareholders need to understand.

size of the labor force. I estimate significant industry effects in all models. This analysis is similar to studies that examine determinants of corporate effective income tax rates (e.g., Gupta and Newberry 1997; Stickney and McGee 1982).

I next examine the role of the corporate tax function – tax planning and tax compliance – in explaining cross-sectional variation in non-income taxes. Controlling for the nature of the firm’s business activities, I find a consistently positive and significant coefficient on the ratio of income taxes to income before income taxes (median industry-adjusted), a proxy for the extent of income tax planning that a firm undertakes. I interpret this as evidence that, on average, firms that avoid income taxes also avoid non-income taxes. This finding calls into question whether accounting standards used to evaluate tax contingencies should differ based on the type of tax involved (Lloyd et al. 2009). I also find a positive and significant coefficient on a measure of industrial diversification, a proxy for tax compliance complexity. The coinsurance benefits of industrial diversification for income taxes do not hold for non-income taxes (Lewellen 1971).

There are a number of interesting unanswered questions. First, will recent disclosure regulation with respect to income tax reserves prompt firms to change the focus of their tax avoidance activities? Second, will the continued shift in the revenue mix in various countries towards non-income taxes, and the substantial loss carryforwards generated during the economic recession, prompt firms to increase their focus on non-income tax avoidance (Lee 2007; Taub 2008; Faith 2009)? Finally, given evidence that tax directors are currently compensated for reducing the firm’s income tax burden (Armstrong et al. 2012; Robinson et al. 2010; TEI 2005), how might these shifts in focus, if they occur, impact the tax function and/or compensation?

Section 2 provides background and develops my hypotheses, Section 3 describes the data and research design, Section 4 features the empirical results, and Section 5 concludes.

2. Background and Hypothesis Development

2.1 Background and relevant literature

Academic studies that examine the mix of tax *revenues* in various taxing jurisdictions are abundant in public economics. These studies examine the determinants of government reliance on income versus non-income taxes, such as collection costs (Tanzi 1992), and the implications of the tax revenue mix for economic growth, tax competition, and budget deficits, among other things (e.g., Lee and Gordon 2004; Slemrod 1995; Goodspeed 1999; Salant 1964). Studies that examine the mix of tax *remittances* made by various taxpayers are almost non-existent, primarily because data on tax revenue mix by government is more readily available and measurable than tax remittance mix by taxpayer.

Drawing from several data sources, including BEA data, Christensen et al. (2001) is the first study to examine the *aggregate* tax remittance composition of U.S. firms. The authors estimate that U.S. businesses are responsible for remitting 84 percent of all state, local, and federal tax revenues (Christensen et al. 2001, 498). With respect to 53 percent of this amount (i.e., the 84 percent), the corporation acts as a withholding agent (e.g., personal income and some payroll tax), which means the employee is responsible for submitting any deficiency to the government if insufficient taxes are withheld. With respect to 10 percent, the corporation acts as a tax collector (e.g., sales and excise tax collected on consumer sales), which means the firm is responsible if insufficient taxes are collected at the time of sale. The remaining 37 percent represents taxes imposed by statute on the corporation (e.g., corporate income and property tax, some payroll tax, and sales and excise taxes paid on business purchases).

At this point, it is useful to connect the non-income tax data that I use in this study (described in more detail later and in the Data Appendix) to the Christensen et al. (2001) framework. Non-

income tax in my study consists of two amounts: (1) other taxes and (2) employer contributions. As BEA data excludes income and payroll taxes, neither amount includes taxes for which the firm acts as a withholding agent (i.e., the 53 percent referenced above). Other taxes include sales, VAT, excise, customs duties, and property taxes, and will include taxes collected (i.e., the 10 percent above), and taxes imposed by statute (i.e., some of the 37 percent above). Employer contributions include taxes imposed by statute that relate specifically to the workforce (i.e., some of the 37 percent above). In summary, the non-income taxes I examine in this study include taxes remitted by the firm and for which the corporation is responsible for any deficiency.¹¹

Some studies examine non-income taxes in specific settings and find that firms behave in a fashion consistent with the objective of reducing non-income taxes. Petroni and Shackelford (1999) find that property-casualty insurers avoid state insurance premium taxes by managing accruals. Swenson (2001) and Bernard et al. (2006) examine reported customs values and find that transfer prices on intra-firm traded goods respond to incentives created by customs duties (i.e., import values are under-declared). Blouin et al. (2011) find evidence consistent with U.S. firms trading off higher income taxes with lower customs duties and illustrates that non-income tax planning is important in a setting where income tax minimization is generally viewed as the primary objective. Desai et al. (2004) find foreign direct investment is more sensitive to non-income taxes than income taxes, conjecturing that these taxes may have a greater impact on

¹¹ There is a further distinction in public economics between the legal obligations of remitting a tax from bearing the actual burden of a tax (Slemrod 2008) Tax burdens depend on market conditions specific to the tax. Christensen et al. (2001) and Clausing (2011) conclude that the literature on the incidence of corporate taxes (including both income and non-income taxes) is not sufficiently developed to estimate ‘tax burdens’ with reliability. I do not believe the inability to distinguish tax remittance from tax burden is problematic in the context of my study. Firms have incentives to reduce taxes remitted regardless of whether or not they bear the actual burden of the tax. Consider that a firm operating in a market or industry that is able to shift some of the sales tax burden to the consumer by charging higher pre-tax market prices would garner a substantial competitive advantage by reducing the tax that it remits to the government relative to its competitors (e.g., Amazon.com).

decision-making because they are deductible, not creditable, under U.S. tax law. Finally, Allee et al. (2011) investigate whether petroleum refineries manage inventory to reduce property taxes.

Some anecdotes will illustrate the implications of tax planning and tax compliance for non-income taxes. First, an unresolved dispute in the amount of \$5.3 million between Ford Motor Company and the United States involves import duties at Ford's Foreign Trade Subzone (FTS) in Louisville, Kentucky during a 3-month period where Ford received engines and transmissions from abroad. The duty rates for foreign made engines and transmissions, finished imported cars, and finished imported trucks were 3.3, 2.6 and 25 percent, respectively. Ford took advantage of the rate differential on finished trucks and truck engines by importing the engines and assembling the trucks in the U.S. However, Ford also 'mistakenly' designated all of the engines as *car* parts on Customs Form 214, thereby remitting duty on all engine and transmission imports (for both cars and trucks) at a rate of 2.6 percent.¹² This example suggests that tax planning (i.e., recognizing the benefit of using a FTS) and tax compliance (i.e., filing out the customs form properly) both have implications for non-income taxes paid by Ford.

A second example is Proctor and Gamble (P&G) that lost on appeal in 2009 a long-standing battle with a VAT and Duties Tribunal in the U.K. over whether Pringles® constitute a potato snack and are, therefore, liable for VAT. Foods are usually exempt from VAT in the U.K., but one of the few exceptions is a 'potato crisp'. P&G opposed the government's categorization arguing that Pringles were "more dough than potatoes" and should be allowed a VAT-exemption. P&G was advised that VAT due on past sales of Pringles was 100 million GBP (160

¹² The importer has the choice of remitting the duty rate applicable to the foreign merchandise in its condition as admitted into a foreign trade zone (e.g., the engine) or to the finished product (e.g., the car), whichever is lower. By completing assembly inside a foreign trade zone, the finished product could be considered the import because these zones are treated as foreign territory under customs law. Thus, Ford paid duty at a rate of 2.6 percent applicable to the completed cars, and should have paid duty at a rate of 3.3 percent applicable to the truck parts. The U.S. government is trying to impose duties at a rate of 25 percent applicable to assembled trucks because the engines were not declared properly on importation and has filed a civil fraud suit against Ford Motor Company. The 'proper' rate of tax was 3.3 percent and it is entirely unclear as to whether the error was intentional or unintentional.

million USD).¹³ This example illustrates how tax planning (e.g., taking an uncertain tax position on the categorization of a Pringle) can impact non-income taxes.

Third, GM is expected to settle in 2010 a property tax dispute with a local Michigan government on the value of its Saginaw Malleable Iron Plant. The city originally assessed the building at \$6.7 million in 2009. The agreement drops that figure to \$3.9 million in 2009, then \$1.1 million in 2010; GM's reduced property tax on a single plant for a single year by \$0.5 million.¹⁴ Wal-Mart is also notorious for appealing property tax assessments and has sought to reduce the property taxes it remits on 35 percent of stores and 40 percent of distribution centers (Johnston 2007). I view these activities as tax planning; an example of how tax compliance might impact property taxes is where a firm fails to recognize that it qualifies for an exemption.

Finally, a the U.S. Government Accountability Office released a report showing that many of the top 29 U.S. publicly-traded defense contractors have created offshore subsidiaries located in tax havens (Isenberg 2010). The primary purpose was to hire U.S. workers providing services overseas in order to avoid Social Security, Medicare, and other payroll taxes. This practice allowed contractors to offer lower bids when competing for certain services. While the use of offshore subsidiaries is most often viewed as an income tax planning strategy, this example illustrates that tax planning is certainly operative in non-income taxes as well. The IRS recently signaled its intent to increase its enforcement efforts on cross-border withholding and employment taxes (Elliot 2009).

Against this background, there exist opportunities to reduce non-income taxes and some firms do seek to avoid these taxes. Additionally, non-income tax avoidance can create tax

¹³ <http://news.bbc.co.uk/2/hi/8060204.stm>. In this case, the burden of the VAT remitted will fall on P&G for past sales of Pringles because the company did not charge VAT on those past sales (i.e., the price of Pringles likely did not reflect the VAT). Additionally, going forward, P&G may either lose sales due to the higher price on Pringles (with the addition of a 17.5 percent VAT), or be forced to cut their price.

¹⁴ http://www.mlive.com/news/saginaw/index.ssf/2010/04/saginaw_gm_could_settle_tax_di.html

uncertainty for the firm because, when challenged, the outcome can hinge on qualitative characterizations with no clear answer. Is a Pringle made primarily of dough or potatoes? Is the Saginaw Mill worth \$6.7 million or \$1.1 million? Numerous favorable (unfavorable) non-income tax positions with numerous taxing jurisdictions can, in aggregate, create significant tax savings (obligations) for the firm.

2.2 *Hypothesis development*

There is a significant amount of empirical evidence that firms engage in income tax avoidance (see Hanlon and Heitzman 2010 for a review), however, there is a dearth of evidence surrounding firm-level non-income taxes, and whether tax planning activities extend to non-income taxes. While the academic literature is replete with examples of tax planning strategies to avoid income taxes (e.g. Lisowsky 2010), a priori, it is not clear whether firms that avoid income taxes would engage in more or less non-income tax avoidance.

Income tax avoidance may be *negatively* associated with non-income-tax avoidance for three reasons. First, Mills et al. (1998) provides evidence that for 365 large U.S. firms an additional \$1 investment in income tax planning reduces income tax due by \$4. If the return on investment (either in-house or via outsourcing) for non-income-tax planning is substantially lower, then firms may focus on income tax planning and ignore non-income-tax planning. As discussed below, there are hundreds, even thousands, of non-income-taxes with various rates, bases, and compliance requirements. This may make it difficult for firms to garner the same economies of scale that they might achieve in income tax planning. Second, tax departments are typically staffed with and advised by CPAs educated and trained only to devise, understand, and implement income tax avoidance strategies. For instance, prior to hiring its first VAT director in 2005, Sony viewed VAT as purely a compliance issue that its income tax leaders tended to

ignore (Faith 2009). To the extent that non-income-taxes are handled by the tax department, the firm may not maintain sufficient expertise to reduce non-income taxes. Third, tax directors are evaluated on their ability to reduce accounting effective tax rates (ETRs) (TEI 2005; Robinson et al. 2010; Armstrong et al. 2012). Because non-income taxes are reported above-the-line and do not directly impact firms' ETRs, these compensation arrangements provide little incentive to reduce non-income taxes, either within the tax department or via outsourcing.

Income tax avoidance may be *positively* associated with non-income-tax avoidance for two reasons. First, if tax avoidance is determined, at least in part, by an 'executive effect' (Dyreng et al. 2010) or 'tone at the top', then it may be the case that tax avoidance efforts extend to all taxes. In fact, it may be that the executive effect results in some firms generally being more cost-conscious than other firms, not strictly with taxes.¹⁵ Second, if firms outsource their tax planning, particularly to a firm with a specialty practice in non-income taxes, it is common for these advisors to conduct a comprehensive 'tax impact study' whereby they identify opportunities to reduce all taxes in various parts of the business operation.

While we know that income tax planning is an important tax function within an organization, I am interested in understanding whether these activities explain variation in non-income taxes. Thus, I test the following hypothesis (stated in the null form):

H₁: There is no relation between the extent of income tax planning and the extent of non-income tax remittances.

¹⁵ While cost-conscious firms may minimize all operating (i.e., above-the-line) costs, in addition to non-income taxes, the minimization of non-income taxes carries one fundamental difference relative to the minimization of other costs. The difference is that the minimization of non-income taxes carries with it the implication that the business units and/or the tax department are creating tax risk. That is, the government is interested in extracting tax revenue from the firm, regardless of the 'form' of the tax payment. Additionally, if the business units are creating tax risk for the firm, that then becomes the responsibility of the tax department to handle, the relation between income tax and non-income tax avoidance has implications for how firms should integrate the tax department with the rest of the organization (Elgood 2008).

There is also the possibility that tax compliance, another important function of any tax department, impacts the level of non-income taxes. Tax compliance is particularly important for non-income taxes for three reasons. First, there are many distinct non-income taxes, potentially making them idiosyncratic and difficult to comply with. For instance, PWC (2009) reports survey results, based on 40 large U.S. corporate taxpayers, that in the U.S. alone there are 30 taxes imposed by the federal government, 1,100 taxes imposed by state governments, and an uncountable number of taxes imposed by 89,00 local governments. Second, the sheer number of non-income taxes firms face may make it difficult to keep up with rule changes and adapt technology needed to comply. Third, non-income taxes are often transaction-based (e.g., VAT, sales, excise) and need to be dealt with frequently (i.e., daily), leaving the taxpayer less time, or making it more costly, to research the issues before making a decision.

Complexity surrounding non-income tax compliance could be associated with higher or lower non-income tax remittances. If firms do not invest in technology, processes, and advice to ensure that they remit the right tax at the right time and in the right place, then complexity of the compliance environment may be associated with higher non-income taxes. Given the number of taxes that firms need to deal with, it seems plausible that the cost-benefit analysis of investments in tax compliance would be difficult. Alternatively, if firms make thoughtful investments in tax compliance precisely when they face complex tax administrations, then tax compliance complexity may lead to lower non-income taxes. This is an empirical question and I test the following hypothesis (stated in null form):

H₂: There is no relation between tax compliance complexity and non-income tax remittances.

3. Data and Analysis

3.1 Data

A key limitation to studying non-income taxes remitted by corporations is the obvious lack of public disclosure.¹⁶ Data collected by the Bureau of Economic Analysis (BEA) provides a unique opportunity to observe these otherwise unobservable taxes. In particular, I use the BEA's financial and operating data for U.S. multinational firms – i.e., the combination of a single U.S. entity, called the U.S. parent, and at least one foreign business enterprise, called a foreign affiliate – from the 'benchmark' years 1982, 1989, 1994, 1999, and 2004. I use the benchmark years because coverage is more complete (to reduce the reporting burden, the extent of information captured varies by year, affiliate size, and the percentage ownership in the affiliate).

The BEA requests that respondents report detailed financial and operating data for each foreign affiliate and the U.S. parent; thus, data is reported at the legal entity-level.¹⁷ I present several tax statistics at both the legal entity-level and the firm-level, though my multivariate analysis is conducted at the firm-level. I impose three conditions for a legal entity to remain in the sample. First, the entity reports all tax amounts – income tax, other tax, and employer contributions – to the BEA.¹⁸ Second, the entity must be a corporate entity that is part of a

¹⁶ PWC (2005) highlights that while the amount of tax remitted by large corporations is coming under increasing public scrutiny the only information in the public domain is often the information on corporate income tax in the financial statements. PWC outlines a framework for reporting a firm's "Total Tax Contribution" which they argue is a better measure of a firm's economic contribution in taxes than the accounting effective tax rate.

¹⁷ See <http://www.bea.gov/surveys/diaturv.htm>. The International Investment and Trade in Services Survey Act govern the collection of the data and the Act ensures that "use of an individual company's data for tax, investigative, or regulatory purposes is prohibited." Willful noncompliance with the Act can result in penalties of up to \$10,000 or a prison term of one year. As a result of these assurances and penalties, BEA believes that coverage is close to complete and levels of accuracy are high. The benchmark survey is form BE-10, *Benchmark Survey of U.S. Direct Investment Abroad*. The BEA defines U.S. direct investment abroad as direct or indirect ownership or control by a single U.S. legal entity of at least 10 percent of the voting securities of an incorporated foreign business enterprise or the equivalent interest in an unincorporated foreign business enterprise. Mataloni (2003) provides a detailed description of the BEA data.

¹⁸ I require that detailed tax information is requested by the entity on the BEA survey form. Based on discussions with BEA staff, an entry of zero for non-income taxes on the form could be interpreted as zero *or de minimis*. To report a dollar amount for non-income taxes on the survey form requires that the entity separately track and tag

consolidated group where the ultimate parent is a U.S.-based corporation (as opposed to a U.S. subsidiary of a foreign company or a partnership, estate, trust, or individual). Finally, with respect to foreign entities, I do not consider holding companies.

The BEA data feature firm-level amounts across three major groups of taxes – income tax, other tax, and employer contributions. The variable *Income Tax* reflects the total provision for income taxes determined in accordance with Generally Accepted Accounting Principles. The variable *Other Tax* captures amounts paid or accrued for taxes (other than income and payroll taxes). *Employer Contributions* are contributions of the employer to employee benefits plans. See the Data Appendix for more detailed descriptions of amounts included in *Other Tax* and *Employer Contributions*.^{19,20} The variable *All Tax* then refers to the sum of *Income Tax*, *Other Tax*, and *Employer Contributions*, unless otherwise stated (e.g., Excl. *Employer Contributions*). In Section 2.1, I described these tax amounts using the Christensen et al. (2001) framework.

While data availability dictates a focus on U.S. firms with at least one foreign affiliate that report to the BEA, examining non-income taxes of multinational firms is ideal for two reasons. First, multinational firms are important to the global economy and have greater opportunities and abilities to invest in complex tax avoidance strategies. Therefore, tax policymakers hold an intense interest in understanding and combating harmful tax practices of multinational firms. In particular, there is concern that these firms are avoiding taxes by locating factors of production in, or shifting income to, low-income-tax jurisdictions. Second, national and subnational

various expenses and payments as ‘tax related’. In practice, entities that do not keep track of non-income taxes as a separate category of expenses because those payments are de minimis would enter zero on the BEA survey form.

¹⁹ A ‘tax’ is a payment to a government that (1) is mandatory, (2) does not result in a return of value directly to the payer, and (3) can be categorized as receipts within the government’s budget. While I recognize that *Other Tax* may technically include amounts that are not called a ‘tax’ due to the wording of the survey, I believe that when compared to all other amounts reported in this category, any ‘nontax’ payments are immaterial. I also recognize that *Employer Contributions* may contain ‘nontax’ payments, in particular, those contributions that are voluntary. Due to the possibility that these voluntary payments may be material, I control for this in my multivariate analysis. The extent to which univariate statistics may overstate the level of payroll taxes is unclear.

²⁰ Note that I cannot distinguish one type of non-income tax from another (e.g., property, sales, excise) in the data.

governments around the world vary widely in the extent of their reliance non-income taxes as source of revenue (see Figure 1 and Figure 2 for the share of total tax revenue raised from non-income taxes for the 30 OECD countries and 50 U.S. states, respectively). While purely domestic firms in the U.S. have opportunities to avoid non-income taxes, mainly through state tax planning, the more taxing jurisdictions that a firm has to choose from, the greater are the opportunities to avoid non-income taxes.

3.2 Research design

The empirical approach for testing my hypotheses is to determine whether, after controlling for the nature of the firm's business activities, proxies for tax planning and tax compliance complexity are significantly associated with non-income taxes. Specifically, I estimate firm-level OLS regressions of Equations (1a) and (1b) as follows:

$$\begin{aligned}
 \text{Other Tax} = & \beta_0 + \beta_1 \text{Income Tax/Income before Income Tax} \\
 & + \beta_2 \text{Country Diversification} + \beta_3 \text{Industry Diversification} \\
 & + \beta_4 \text{Tax Payments per Year} + \beta_5 \text{Tax Compliance per Year} \\
 & + \beta_6 \text{Inventory} + \beta_7 \text{PPE} + \beta_8 \text{Imports} + \beta_9 \text{FirmSize} + \beta_{10} \text{PctForSales} \\
 & + \beta_{11} \text{Profit Margin} + \beta_{12} \text{Intercompany Sales} + \beta_{13} \text{Cross Border Sales} \\
 & + \beta_{14} \text{Value-Added} + \text{Industry and Year Indicators}
 \end{aligned} \tag{1a}$$

$$\begin{aligned}
 \text{Other Tax and Employer Contributions} = & \beta_0 \\
 & + \beta_1 \text{Income Tax/Income before Income Tax} \\
 & + \beta_2 \text{Country Diversification} + \beta_3 \text{Industry Diversification} \\
 & + \beta_4 \text{Tax Payments per Year} + \beta_5 \text{Tax Compliance per Year} \\
 & + \beta_6 \text{Inventory} + \beta_7 \text{PPE} + \beta_8 \text{Imports} + \beta_9 \text{FirmSize} + \beta_{10} \text{PctForSales} \\
 & + \beta_{11} \text{Profit Margin} + \beta_{12} \text{Intercompany Sales} + \beta_{13} \text{Cross Border Sales} \\
 & + \beta_{14} \text{Value-Added} + \beta_{15} \text{Employees} + \beta_{16} \text{Wages/GDPPC} \\
 & + \text{Industry and Year Indicators}
 \end{aligned} \tag{1b}$$

Equation (1a) examines the determinants of *Other Tax*, while Equation (1b) includes *Employer Contributions* in the dependent variable and adapts the list of control variables to include *Employees* and *Wages/GDPPC*. I scale both dependent variables by income and assets in my analysis. *Employees* is the natural log of total employees. *Wages/GDPPC* is a weighted

average (by country assets) ratio of salary per employee to GDP per capita for each country. Inclusion of this variable in Equation (1b) controls for voluntary payments included in *Employer Contributions* by measuring more generally how well paid are the firm's employees. The purpose for estimating separate regressions is to allow for the possibility that *Employer Contributions* contains material amounts of non-tax (i.e., voluntary) payments and my attempt to control for this with *Wages/GDPPC* is ineffective.

The first five variables are of interest in testing my hypotheses: *Income Tax/Income before Income Tax*, *Country Diversification*, *Industry Diversification*, *Tax Payments per Year*, and *Tax Hours per Year*. The first variable, *Income Tax/Income before Income Tax*, is a measure of tax planning activities within the firm by broadly measuring income tax avoidance. Mills et al. (1998) show that tax planning expenditures result in lower accounting effective tax rates. Because income taxes vary by industry, I industry adjust each firm's *Income Tax/Income before Income Tax* by the industry median each year before entering it into the regression. *Income before Income Tax* is net income plus *Income Tax* plus any income from affiliated companies.

The remaining four variables are proxies for the complexity of the firm's tax compliance environment. *Country Diversification* is one minus the revenue-based Herfindahl Index of the proportion of firm sales in each country. *Industry Diversification* is one minus the revenue-based Herfindahl Index of the proportion of firm sales in each 4-digit ISIC code. Industry and geographic diversification expose the firm to more types of taxes and more taxing jurisdictions, and these taxes may interact with each other in complex ways. *Tax Payments per Year* is a weighted (by country assets) number of tax payments a typical business must make in each country (WBG & PWC 2010). *Tax Hours per Year* is a weighted (by country assets) average number of hours a typical business must spend complying with tax obligations in each country

(WBG & PWC 2010). The latter two measures proxy for the complexity of the tax compliance environment of a business operating in the firm's geographic footprint.

The remaining variables in the model control for the nature of the firm's business activities that may be associated with non-income taxes. To control for non-income taxes imposed on tangible assets or capital (e.g., property taxes), I include *PPE* which is the ratio of net property, plant and equipment to *Assets*, and *Inventory* which is the ratio of inventory to *Assets*. *Assets* are total assets minus any net investment in affiliates companies. To control for non-income taxes imposed on import activities (e.g., customs duties), I include *Imports* which is the ratio of imports to *Assets*. To control for non-income taxes imposed on selling activities (e.g., sales, excise, VAT), I include *Intercompany Sales* which is the ratio of intercompany sales to *Assets*, *Cross Border Sales* which is the ratio of non-local sales to *Assets*, and *Value-Added* which is the ratio of gross product to *Assets*. I distinguish between *Intercompany Sales* and *Cross Border Sales* because I expect both the frequency and complexity of the firm's selling activities to impact non-income taxes. *Intercompany Sales* captures companies that have relatively more dispersed supply chains and thus engage in more frequent transfers of goods and services, while *Cross Border Sales* captures possible complexity associated with having the buyer and seller in different taxing jurisdictions. I expect all of the variables described above to be positively associated with non-income taxes.

I include industry indicator variables because univariate statistics suggest significant variation across industries. I include year indicator variables to allow for changes in tax rates and tax bases over time. Finally, I include *FirmSize* which is the natural log of total assets, *PctForSales* which is the ratio of foreign sales to firm sales, and *Profit Margin* which is the ratio of income before all taxes over sales. These variables control for differences in non-income taxes

that may be correlated with opportunities for income tax planning. I do not make a sign prediction for these variables.

3.3 *Descriptive statistics*

While my multivariate analysis evaluates tax avoidance activities at the firm-level, to offer a complete portrait of the magnitude of non-income taxes, I compute tax statistics at both the legal entity and firm-level.²¹ Note that the location choice of each entity is of itself a tax avoidance strategy available to a firm that would not be captured at the entity level. Reporting tax statistics at the legal entity-level also allows for a better understanding of the extent to which non-income taxes vary across industries and countries. At the firm level, any underlying industry or country variation is obscured both by industrial and geographic diversification of the firm.

I report a total of 10 tax statistics. First, I report the accounting effective tax rate – *Income Tax/Income before Income Tax* –to provide some measurement with which the reader will be familiar. I then compute three sets of statistics. The first two sets of statistics differ only in the scalar used for *Income Tax*, *Other Tax*, and *Employer Contributions*. The first set uses *Income before All Tax*, while the second set uses *Assets*. The final set of statistics computes a ratio of *Income Tax* to *All Tax* (with and without consideration of *Employer Contributions*). I estimate Equations (1a) and (1b) separately, scaling the dependent variables by both *Income before All Tax* and *Assets*, and report both results.

3.3.1 *Entity-level*

Table 1 begins with my sample selection of 87,065 entity-year observations based on the three data criteria described in Section 3.1. I am only able to compute meaningful tax statistics if an entity reports both positive *Income before Income Tax* and non-negative taxes. Thus, I do not

²¹ In theory, using BEA data, one could parse out U.S. tax avoidance from foreign tax avoidance for a U.S.-based firm, though it is not clear whether different motivations are operative. Thus, I study worldwide tax avoidance and conduct my multivariate analysis at the firm-level.

compute tax statistics for 23,279 entity-years reporting negative or zero *Income before Income Tax* and 3,528 entity-years reporting positive *Income before Income Tax* but either negative *Income Tax* or negative *Other Tax*. Consistent with non-income taxes being less sensitive to profitability, Table 1 shows that 60 (80) percent of entities with positive *Income before Income Tax* report positive *Other (Income) Tax*, whereas, 54 (29) percent with negative *Income before Income Tax* report positive *Other (Income) Tax*. Table 1 also reports that the mean (median) *Income Tax/All Tax (Excl. Employer Contributions)* for all entity-years is 65 (85) percent, and the mean (median) *Income Tax/All Tax* is 39 (35) percent. There is more variation in *Other Tax* than either *Income Tax* or *Employer Contributions* evidenced by a standard deviation approximately twice as large as the mean, whether scaled by *Income before All Tax* or *Assets*.

3.3.2 Entity-level by industry

Table 2 reports five tax statistics from Table 1 at the entity-level by industry: *Income Tax/Income before Income Tax*; *Income Tax*, *Other Tax*, and *Employer Contributions* all scaled by *Income before All Tax*; and *Income Tax/All Tax* (with and without *Employer Contributions*). I capture the primary industry of each foreign and U.S. entity in the data, rather than the primary industry of the worldwide operation, using ISIC (International Standard Industrial Classification) codes and the classifications presented are consistent with those used by the BEA. The 12 industries in Table 2 are presented in the order of their mean accounting effective tax rate – *Income Tax/Income before Income Tax* – from lowest to highest.

What is immediately striking about the tax statistics reported in Table 2 is that even after grouping the data by industry, the data continue to show high *intra*-industry variation, particularly with respect to *Other Tax/Income before All Tax*. There also appears to be some variation across industries. The Financial, Insurance and Real Estate (FIRE) industry reports the

lowest *Other Tax/Income before All Tax* – just 4 percent – while the Petroleum industry reports the highest – 20 percent. It is interesting to compare *Income Tax/Income before Income Tax* to *Income Tax/All Tax*. At the risk of oversimplifying, if income taxes alone could summarize cross-sectional variation in total corporate taxes, we would expect little variation in *Income Tax/All Tax*, even with variation in *Income Tax/Income before Income Tax*. No clear pattern emerges in Table 2 with respect to these two measures but it is worth noting that the FIRE industry reports the lowest ratio of *Income Tax/Income before All Tax* – 21 percent – and the highest ratio of *Income Tax/All Tax* – 49 percent, suggesting that firms in this industry are quite capable of avoiding all tax obligations.

Why is there so much more variation in *Other Tax* than *Income Tax*, even within an industry? Are other taxes highly idiosyncratic and difficult to comply with? Or does this intra-industry variation suggest that firms vary in the extent to which they avoid these taxes? These are questions I seek to shed light on in this study.

3.3.3 Entity-level by country

Entity-level data also allow me to provide descriptive statistics by country. Christensen et al. (2001) and Desai et al. (2004) provide aggregate descriptive statistics on non-income taxes by country; I highlight the variability in non-income taxes at the firm-level within a country. Table 3 Panel A reports the top 10 countries with respect to the mean value of *Income Tax/All Tax* (Excl. *Employer Contributions*) and *Income Tax/All Tax*. The two lists look relatively similar; however, there are two things notable in Panel A. First, some oil-rich nations appear on both the highest (e.g. Algeria, Libya, Qatar) and lowest list (i.e., Bahrain, Liberia, UAE). I conjecture that U.S. firms enjoy some latitude with foreign governments in whether a tax is deemed to be an income tax or a non-income tax. The foreign government should be relatively indifferent so long as it

collects the revenue, yet the U.S. firm may not be indifferent because the income tax payment is creditable under U.S. tax law, whereas the non-income tax payment is only deductible. Second, some tax havens appear on both the highest (e.g., Netherlands Antilles) and lowest (e.g., Belize, Bahamas) list. The fact that half or more of the countries featuring entities with the lowest mean ratio of *Income Tax/All Tax* are tax havens suggests that total tax obligations in tax havens are perhaps not well understood. This trend would seem to suggest that there are some significant non-income tax obligations in tax havens. Unfortunately, the World Bank Group has limited coverage of tax havens and when they do estimate the total taxes paid in tax havens, their estimates vary widely from mine (perhaps because manufacturing companies, on which their estimates are based, are not prevalent in tax havens) (WBG & PWC 2010).

Table 3 Panel B reports tax statistics for countries grouped by tax haven status, national wealth, and the median accounting effective tax rate of entities operating within the jurisdiction. There is no significant difference between haven and non-haven countries with respect to *Income Tax/All Tax*. Firms operating in countries with the lowest median value of *Income Tax/Income before Income Tax* exhibit the lowest ratio of *Income Tax/All Tax*, suggesting that operating in a country featuring a very low income tax rate (but not necessarily a tax haven) shifts the mix of taxes from income to non-income, rather than allowing the firm to reduce its total tax obligations.

3.3.4 Firm-level

In Table 4 Panel A, I present descriptive statistics by firm, rather than by legal entity, for all variables used to estimate Equations (1a) and (1b). Table 4 begins with my sample selection of 7,379 firm-year observations. I do not compute tax statistics for 1,367 firm-years reporting negative or zero *Income before Income Tax* and 257 firm-years reporting positive *Income before*

Income Tax but either negative *Income Tax* or negative *Other Tax*. Consistent with non-income taxes being less sensitive to profitability, Table 1 shows that 99 (94) percent of entities with positive *Income before Income Tax* report positive *Other (Income) Tax*, whereas, 99 (45) percent with negative *Income before Income Tax* report positive *Other (Income) Tax*. The mean *Income before Income Tax* is 37 percent. *Other Tax* continues to show significant variation across firms. I winsorize all continuous variables at the 1 and 99 percent levels. I discuss Table 4 Panel B in Section 4.3 of the paper.

4. Empirical Results

4.1 Multivariate analysis

I estimate Equations (1a) and (1b) with the dependent variables scaled by income and report summary statistics in Table 5. In Table 5 Panel A, the dependent variable is *Other Tax/Income before All Tax* (Excl. *Employer Contributions*). Column (1a) reports the test results including only business characteristics, and industry and year indicator variables in the model. *Inventory*, *Imports*, and *Value-Added* all show a significantly positive association as expected. Coefficients on *PPE* and *Intercompany Sales* are not significant, and unexpectedly, *Cross Border Sales* show a significantly negative association. This was not expected because *Cross Border Sales* was included in the model to capture the complexity of sales activities that span national borders; one of the most difficult aspects of tax planning and compliance is making sense of the interactions between tax regulations in different taxing jurisdictions. Complex selling activities of this nature should create for instance, higher levels of irrecoverable VAT. *FirmSize* shows a significantly positive association, while *PctForSales* and *Profit Margin* show a significantly negative association. The negative coefficient on *PctForSales* is consistent with firms making location decisions that avoid non-income taxes (Desai et al. 2004).

Table 5 Panel A, Column (1b) reports results of testing H₁ by including a measure of income tax avoidance – the industry median-adjusted ratio of *Income Tax/Income before Income Tax*. This measure is significantly positively associated with *Other Tax* suggesting that tax avoidance activities extend to non-income taxes. Column (1c) presents results of testing H₂ by including in the model four proxies for the complexity of the tax compliance environment. *Country Diversification* reveals a negative association, whereas *Industry Diversification* reveals a positive association. This result suggests that various forms of diversification can impact the tax obligations of the firm in different ways. Firms that operate in more countries are better able to avoid non-income taxes, while firms that operate in more industries are less able to avoid non-income taxes. Firms that operate in more countries may recognize the need to seek tax advice.

In Table 5 Panel B, the dependent variable is *Other Tax and Employer Contributions/Income before All Tax* and two new control variables are added to the model – *Employees* and *Wages/GDPPC* to control for the nature of the firm’s activities that should be associated with *Employer Contributions*. With respect to my hypotheses, Columns (1e) and (1f) continue to indicate that income tax planning and tax compliance complexity are positively associated with non-income taxes. The sign on *FirmSize*, however, is negative and significant while the coefficient on *Imports* is insignificant, which differs from Panel A. *FirmSize* and *Employees* are highly correlated at .83.

I estimate Equations (1a) and (1b) with the dependent variables scaled by assets and report summary statistics in Table 6. In Table 6 Panel A, the dependent variable is *Other Tax/Assets*. With respect to my variables of interest in columns (2b) and (2c) the results are consistent with those reported in Table 5 Panel A. Some of the results on my control variables, however, vary with the scalar chosen for the dependent variable. For instance, when the dependent variable,

Other Tax, was scaled by a measure of income, *Profit Margin* showed a negative association, likely due to the relatively fixed cost nature of these non-income taxes. In contrast, when *Other Tax* is scaled by *Assets* as in Table 6, *Profit Margin* shows a positive association. Additionally, quite unexpectedly, the coefficient on *PPE* is negative and significant in Table 6. In Table 6 Panel B, the dependent variable is *Other Tax and Employer Contributions/Assets*. Again, the results on my variables of interest in columns (2e) and (2f) are consistent with those reported in Table 5 Panel B, but the sign and significance on some my control variables are not very stable or consistent. Determining the business activities of the firm associated with non-income taxes and the scalar used for the tax variables may need some additional consideration.

4.2 *A look at some preliminary data*

The most recent year of data available to BEA researchers is 2008. The next benchmark year – 2009 – is not available to incorporate into this study. Table 4 Panel B presents firm-level univariate tax statistics by year; all statistics exclude *Employer Contributions* (i.e., include only *Income Tax* and *Other Tax*) to allow comparability across time (I do not have data on *Employer Contributions* for 2008).

My motivation for reporting the information in Table 4 Panel B is twofold. First, I would like to get a sense for whether reductions in income taxes and other taxes have moved in lock step over time, on average. Table 4 Panel B reports that the mean *Income Tax/Income before Income Tax* dropped from 41 to 33 percent from 1982 to 2004, consistent with income tax rates dropping in both the U.S. and abroad. However, while income tax rates decreased during this period, Panel B shows no clear trend in *Other Tax/Income before All Tax* which hovers around 17 percent each year, with a slight dip in 1999 when corporate profits were very high.²²

²² In the years subsequent to 1994, any trend in the data is potentially obscured by BEA reporting requirements with larger firms represented in the data. To be reported on BEA Surveys of U.S. Direct Investment Abroad, a foreign

Second, I anticipate a change in tax avoidance behavior subsequent to the enactment of disclosure guidelines for uncertain *income tax* positions (e.g., ASC 740-10). Specifically, I conjecture that income tax avoidance will decline (i.e., *Income Tax/Income before Income Tax* will increase) and non-income tax avoidance will rise (i.e., *Other Tax/Income before All Tax* will decrease) and I want to see if this trend is there on a univariate level. The mean of *Income Tax/Income before Income Tax* increases by 3 percent from 2004 to 2008. Over this same period, *Other Tax/Income before All Tax* drops 2 percent to 15 percent, the lowest mean *Other Tax/Income before All* of all years presented. This trend is intriguing given that income tax rates generally continue to decline and non-income tax rates generally continue to rise around the world (Lee 2007).

These are only univariate statistics but there is a potentially interesting and important story in these statistics about the possibility of a shift in tax planning activities within U.S. firms. I look forward to examining this possibility more rigorously in the future with more data.

5. Conclusion

This study makes two contributions to the literature on corporate tax avoidance. First, it presents descriptive statistics on the magnitude and variability – across industries, countries, and firms – of non-income taxes (i.e., taxes for which the tax base is not income). These statistics complement efforts by the World Bank Group and PricewaterhouseCoopers to measure and reports all of the taxes corporations remit in order to provide a more complete picture of companies' contributions to government revenues. Second, this study examines whether two

affiliate must meet a specific size threshold in terms of assets, sales, or net income (+/-). The thresholds for the years in my sample: 1982, 1989, 1994 (benchmark years): \$3 million, 1999 (benchmark year): \$7 million, 2004 (benchmark year): \$10 million, 2008 (NOT a benchmark year): \$40 million. Increasing reporting thresholds is the reason why the number of firms appearing in the data is dropping over time in Table 4 Panel B.

corporate tax functions – tax planning and tax compliance – explain cross-sectional variation in non-income taxes. Overall, I find that income tax planning is positively associated with non-income taxes and that tax compliance complexity created by operating in multiple industries is positively associated with non-income taxes. This study illustrates that both the business activities of the firm and the corporate tax function play a role in the non-income tax remittances of corporate taxpayers.

The finding that firms that avoid income taxes also appear to avoid non-income taxes raises an interesting question in light of public disclosure requirements. That is, public disclosure of non-income taxes themselves and the risks associated with avoiding them by taking various tax filing positions in the firm's favor are virtually non-existent. In fact, the requirement to include non-income taxes in the scope of recent disclosure regulation for uncertain tax positions was considered (ASC 740-10), but then rejected for reasons that are not widely apparent from an examination of public documents. This study is a first step to uncovering the magnitude of these remittances for some firms, and raises the possibility that our understanding of the tax avoidance activities of some firms is somewhat narrow without considering non-income taxes.

I anticipate that an understanding of the determinants of non-income taxes and the avoidance of those taxes will continue to increase in importance. Anecdotally, governments around the world are looking to increase their reliance on non-income taxes – these taxes are argued to be cheaper to collect and enforce, and revenue from these taxes may be less susceptible to precipitous declines in periods of economic recession, relative to income taxes. Given the lack of disclosure on non-income taxes, the next step might be to develop a model using publicly available data that explains well the level of non-income tax remittances that firms make, so that researchers can consider this unobservable information in studies on corporate tax avoidance.

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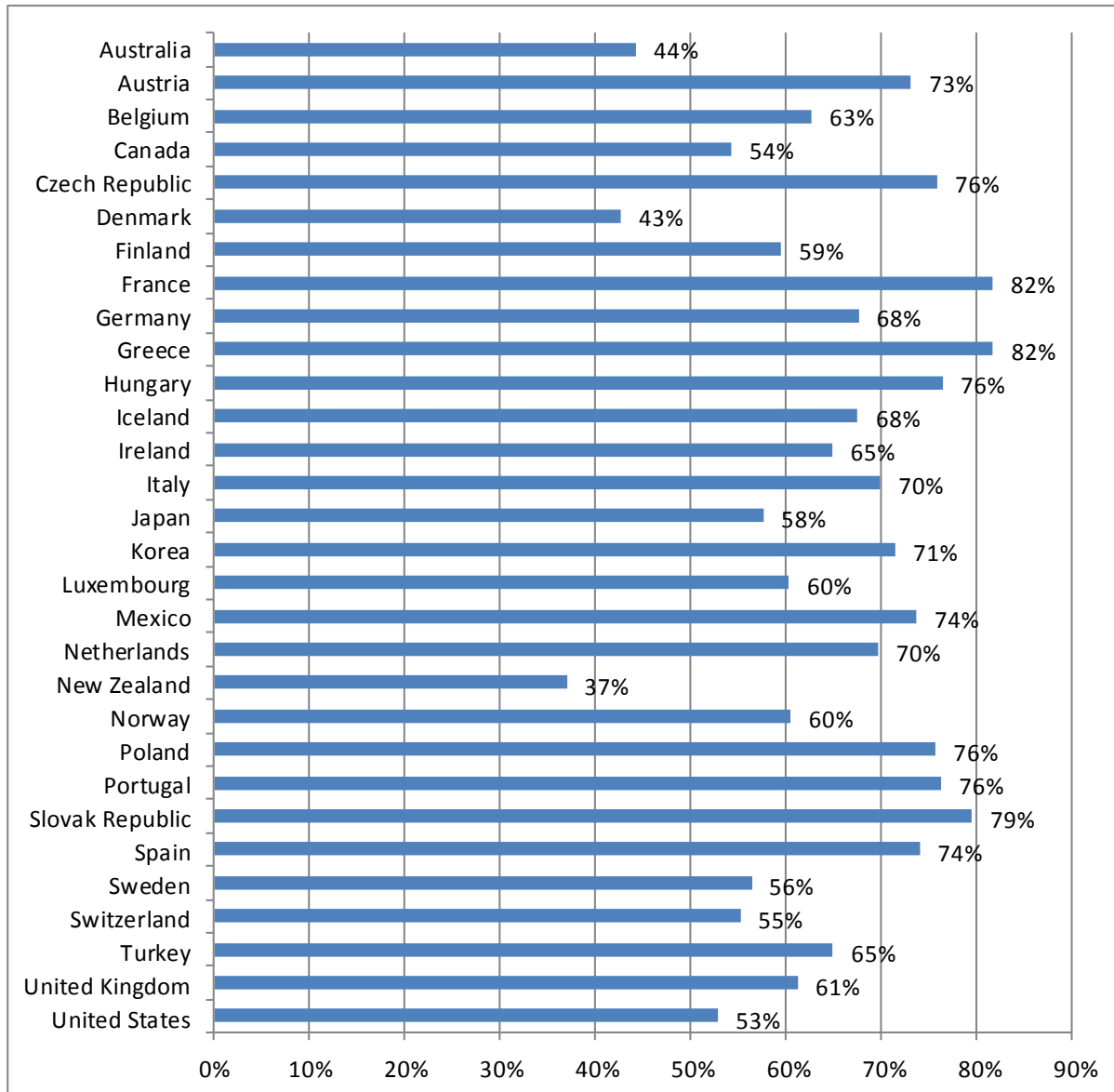
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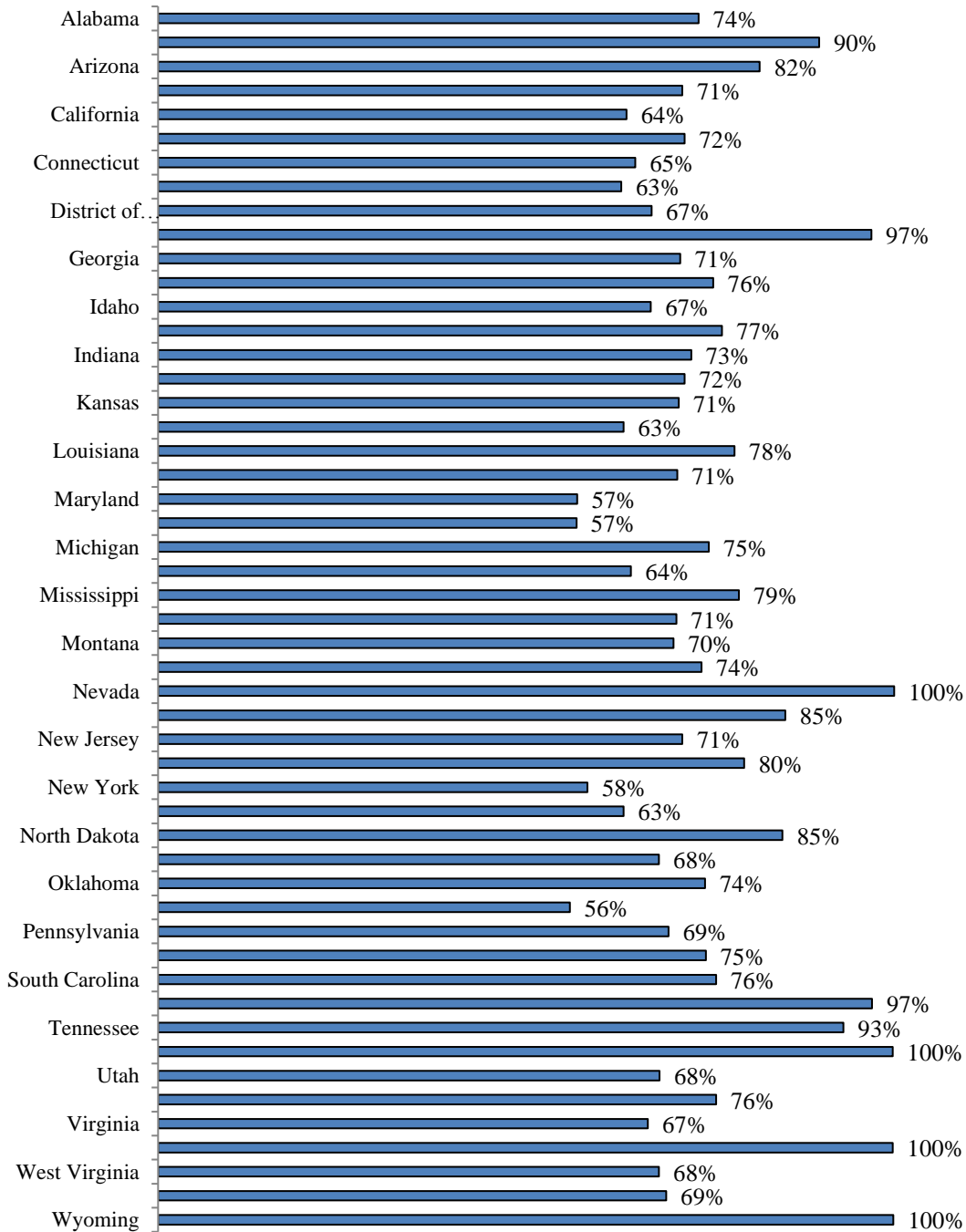
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FIGURE 1
Government Reliance on Non-Income Taxes - OECD Countries



The bar represents the share of total tax revenue received from social security contributions, taxes on payroll and workforce, taxes on property, taxes on goods and services, and other taxes. These figures include all levels of government and represent the average of values (when available) for the time period 1965 through 2008. The data are from OECD (2010), Comparative Tables, *Revenue Statistics* (database). doi: [10.1787/data-00262-en](https://doi.org/10.1787/data-00262-en).

FIGURE 2
Government Reliance on Non-Income Taxes - 50 U.S. States



The bar represents the share of total tax revenue received from taxes on property, sales taxes, and other non-income taxes. These figures represent values for 2008. These data were obtained from Federation of Tax Administrators, State and Local Tax Burdens: <http://www.taxadmin.org/fta/rate/burden.html#slfinance>

TABLE 1
Entity-Level Descriptive Statistics

Entity-Years Reporting Tax Data in (1982,1989,1994,1999,2004)	87,065
Income before Income Tax > 0	63,786
& Income Tax > 0	80%
& Other Tax > 0	60%
Income before Income Tax ≤ 0	23,279
& Income Tax > 0	29%
& Other Tax > 0	54%
Income before Income Tax > 0	63,786
Less: Income Tax < 0 or Other Tax < 0	3,528
Observations Used for Tax Statistics	60,258

All Entity-Years (N=60258)	Mean	Median	Std Dev
Income Tax/Income before Income Tax	.31	.32	.25
Income Tax/Income before All Tax	.25	.24	.23
Other Tax/Income before All Tax	.13	.01	.22
Employer Contributions/Income before All Tax	.32	.19	.33
All Tax/Income before All Tax	.61	.63	.33
Income Tax/Assets	.05	.03	.06
Other Tax/Assets	.04	.00	.11
Employer Contributions/Assets	.05	.03	.06
Income Tax/All Tax (Excl. Employer Contributions)	.65	.85	.40
Income Tax/All Tax	.39	.35	.32

All variables in **Table 1** are computed at the legal entity-level. *Income before Income Tax* is net income plus *Income Tax* plus any income from affiliated companies. *Income Tax* is the total provision for income taxes determined in accordance with GAAP. *Other Tax* is amounts paid or accrued for taxes (other than income and payroll taxes) and nontax payments (other than production royalty payments). *Employer Contributions* are contributions of the employer to employee benefits plans including those mandated by government statute, those resulting from collective bargaining contracts, and those that are voluntary. See **Data Appendix** for more detailed descriptions of amounts included in *Other Tax* and *Employer Contributions*. *All Tax* refers to the sum of *Income Tax*, *Other Tax*, and *Employer Contributions*, unless otherwise stated (e.g., Excl. *Employer Contributions*). *Assets* are total assets minus any net investment in affiliates companies. For confidentiality, I report all medians as the mean of the middle five values.

TABLE 2
Entity-Level Descriptive Statistics by Industry

All Entities (N=60258)	N	Mean	Median	Std
<i>FIRE</i>	7155			
Income Tax/Income before Income Tax		.21	.12	.25
Income Tax/Income before All Tax		.20	.12	.24
Other Tax/Income before All Tax		.04	.00	.12
Employer Contributions/Income before All Tax		.12	.00	.25
Income Tax/All Tax (Excl. Employer Contributions)		.61	.93	.45
Income Tax/All Tax		.49	.50	.42
<i>Other</i>	3810			
Income Tax/Income before Income Tax		.29	.30	.25
Income Tax/Income before All Tax		.23	.20	.23
Other Tax/Income before All Tax		.12	.01	.21
Employer Contributions/Income before All Tax		.33	.20	.34
Income Tax/All Tax (Excl. Employer Contributions)		.60	.76	.41
Income Tax/All Tax		.35	.29	.32
<i>Electronic & Electric Equipment Manufacturing</i>	2814			
Income Tax/Income before Income Tax		.29	.30	.23
Income Tax/Income before All Tax		.23	.22	.20
Other Tax/Income before All Tax		.11	.02	.20
Employer Contributions/Income before All Tax		.41	.31	.33
Income Tax/All Tax (Excl. Employer Contributions)		.66	.85	.37
Income Tax/All Tax		.33	.29	.27
<i>Services</i>	6906			
Income Tax/Income before Income Tax		.31	.31	.27
Income Tax/Income before All Tax		.27	.25	.25
Other Tax/Income before All Tax		.09	.00	.19
Employer Contributions/Income before All Tax		.45	.34	.38
Income Tax/All Tax (Excl. Employer Contributions)		.68	.94	.40
Income Tax/All Tax		.34	.28	.31
<i>Petroleum</i>	3702			
Income Tax/Income before Income Tax		.32	.31	.28
Income Tax/Income before All Tax		.24	.16	.26
Other Tax/Income before All Tax		.20	.01	.32
Employer Contributions/Income before All Tax		.13	.02	.24
Income Tax/All Tax (Excl. Employer Contributions)		.53	.66	.44
Income Tax/All Tax		.42	.34	.39
<i>Transportation Equipment Manufacturing</i>	1720			
Income Tax/Income before Income Tax		.32	.33	.24
Income Tax/Income before All Tax		.25	.23	.22
Other Tax/Income before All Tax		.15	.04	.23
Employer Contributions/Income before All Tax		.42	.34	.34
Income Tax/All Tax (Excl. Employer Contributions)		.63	.77	.38
Income Tax/All Tax		.32	.27	.27

For confidentiality, I report all medians as the mean of the middle five values. See **Table 1** for variable definitions.

TABLE 2 (cont.)
Entity-Level Descriptive Statistics by Industry

All Entities (N=60258)	N	Mean	Median	Std
<i>Food</i>	2226			
Income Tax/Income before Income Tax		.32	.34	.22
Income Tax/Income before All Tax		.26	.26	.20
Other Tax/Income before All Tax		.15	.04	.23
Employer Contributions/Income before All Tax		.30	.19	.30
Income Tax/All Tax (Excl. Employer Contributions)		.66	.82	.37
Income Tax/All Tax		.41	.39	.29
<i>Other Manufacturing</i>	7001			
Income Tax/Income before Income Tax		.32	.34	.23
Income Tax/Income before All Tax		.25	.25	.20
Other Tax/Income before All Tax		.15	.04	.23
Employer Contributions/Income before All Tax		.39	.28	.32
Income Tax/All Tax (Excl. Employer Contributions)		.65	.80	.37
Income Tax/All Tax		.35	.32	.27
<i>Industrial Machinery & Equipment</i>	3334			
Income Tax/Income before Income Tax		.32	.34	.23
Income Tax/Income before All Tax		.26	.26	.21
Other Tax/Income before All Tax		.11	.03	.19
Employer Contributions/Income before All Tax		.42	.34	.33
Income Tax/All Tax (Excl. Employer Contributions)		.67	.84	.36
Income Tax/All Tax		.34	.31	.27
<i>Wholesale Trade</i>	13375			
Income Tax/Income before Income Tax		.33	.34	.25
Income Tax/Income before All Tax		.27	.26	.23
Other Tax/Income before All Tax		.15	.01	.25
Employer Contributions/Income before All Tax		.29	.17	.32
Income Tax/All Tax (Excl. Employer Contributions)		.66	.90	.40
Income Tax/All Tax		.42	.40	.32
<i>Primary & Fabricated Metal Manufacturing</i>	2344			
Income Tax/Income before Income Tax		.34	.36	.22
Income Tax/Income before All Tax		.27	.27	.20
Other Tax/Income before All Tax		.13	.04	.20
Employer Contributions/Income before All Tax		.42	.33	.32
Income Tax/All Tax (Excl. Employer Contributions)		.67	.83	.36
Income Tax/All Tax		.35	.33	.26
<i>Chemical</i>	5871			
Income Tax/Income before Income Tax		.35	.35	.23
Income Tax/Income before All Tax		.28	.28	.20
Other Tax/Income before All Tax		.14	.04	.22
Employer Contributions/Income before All Tax		.30	.20	.29
Income Tax/All Tax (Excl. Employer Contributions)		.69	.85	.35
Income Tax/All Tax		.43	.43	.28

For confidentiality, I report all medians as the mean of the middle five values. See **Table 1** for variable definitions.

TABLE 3 PANEL A
Entity-Level Descriptive Statistics by Country

All Entities (N=60258)					All Entities (N=60258)						
N	Mean	Median	Std Dev		N	Mean	Median	Std Dev			
Income Tax/All Tax (Excl. Employer Contributions)											
HIGHEST (Mean)					World Bank	LOWEST (Mean)					
Angola	20	.92	.98	.14	.55	<i>Bermuda</i>	958	.16	.00	.36	na
Libya	25	.90	1.00	.22	na	<i>Belize</i>	16	.17	.03	.33	na
Lebanon	26	.81	1.00	.32	1.00	<i>Bahamas</i>	154	.18	.00	.37	.00
Indonesia	327	.80	1.00	.35	.99	<i>Liechtenstein</i>	28	.22	.00	.40	na
<i>Netherlands Antilles</i>	482	.80	1.00	.39	na	Bahrain	41	.24	.00	.42	.00
Botswana	10	.78	1.00	.36	.81	U.K. Islands - Caribbean	392	.25	.00	.43	na
Bangladesh	16	.78	.99	.39	.73	Liberia	47	.26	.00	.42	.00
Equatorial Guinea	15	.78	1.00	.41	.39	<i>Antigua and Barbuda</i>	392	.32	.15	.43	.81
Malawi	21	.77	.94	.36	.97	Haiti	47	.33	.14	.41	.84
Qatar	12	.76	.94	.39	na	Congo	11	.35	.00	.47	.17
Income Tax/All Tax											
HIGHEST (Mean)					World Bank	LOWEST (Mean)					
Angola	20	.80	.91	.25	.46	<i>Belize</i>	16	.08	.03	.14	na
<i>Netherlands Antilles</i>	482	.78	1.00	.39	na	<i>Bahamas</i>	154	.12	.00	.28	.00
Equatorial Guinea	15	.71	.88	.40	.23	<i>Liechtenstein</i>	28	.15	.00	.32	na
Libya	25	.71	.75	.30	na	<i>Bermuda</i>	958	.15	.00	.34	na
Yemen	20	.66	.83	.42	.73	Bahrain	41	.17	.00	.32	.00
Bangladesh	16	.64	.72	.34	.73	Liberia	47	.19	.00	.34	.00
Algeria	16	.63	.84	.42	.09	U.K. Islands - Caribbean	392	.21	.00	.39	na
Papua New Guinea	30	.62	.77	.38	.52	<i>Antigua and Barbuda</i>	11	.22	.14	.31	.63
Indonesia	327	.62	.71	.35	.71	United Arab Emirates	179	.25	.00	.38	.00
Malawai	21	.61	.57	.33	.93	<i>Monaco</i>	20	.25	.20	.26	na

I require at least ten legal operating entities (N>10) in a country for the country to appear in Table 3. Country names in *italics* are tax havens. Amounts appearing in columns labeled *World Bank* reflect the estimated ratio of the profit tax rate to the total tax rate in these countries, as computed by World Bank Group (WB & PWC (2010)), and are used for means of comparison (the total tax rate excludes the payroll tax rate in the top portion of Table 3 to be consistent with the exclusion of *Employer Contributions*). For confidentiality, I report all medians as the mean of the middle five values.

TABLE 3 PANEL B
Entity-Level Descriptive Statistics by Country Groups

All Entities (N=60258)	N	Mean	Median	Std Dev
By Haven Status				
<i>Haven</i>	6517			
Income Tax/Income before Income Tax		.16	.10	.20
Income Tax/All Tax (Excl. Employer Contributions)		.60	.93	.45
Income Tax/All Tax		.40	.31	.38
<i>Non-Haven</i>	53741			
Income Tax/Income before Income Tax		.33	.34	.25
Income Tax/All Tax (Excl. Employer Contributions)		.65	.85	.39
Income Tax/All Tax		.39	.36	.31
	N	Mean	Median	Std Dev
By National Income				
<i>Low</i>	966			
Income Tax/Income before Income Tax		.36	.37	.27
Income Tax/All Tax (Excl. Employer Contributions)		.61	.87	.42
Income Tax/All Tax		.47	.49	.37
<i>Low Middle</i>	11378			
Income Tax/Income before Income Tax		.29	.28	.26
Income Tax/All Tax (Excl. Employer Contributions)		.62	.82	.41
Income Tax/All Tax		.39	.35	.33
<i>High Middle</i>	4897			
Income Tax/Income before Income Tax		.16	.10	.21
Income Tax/All Tax (Excl. Employer Contributions)		.57	.87	.46
Income Tax/All Tax		.35	.24	.36
<i>High</i>	41159			
Income Tax/Income before Income Tax		.34	.35	.24
Income Tax/All Tax (Excl. Employer Contributions)		.67	.86	.38
Income Tax/All Tax		.39	.36	.31
	N	Mean	Median	Std Dev
By Median Value of Income before Income Tax				
<i>0 to 10 percent</i>	4075			
Income Tax/Income before Income Tax		.09	.00	.19
Income Tax/All Tax (Excl. Employer Contributions)		.36	.00	.45
Income Tax/All Tax		.25	.00	.38
<i>10 to 20 percent</i>	5569			
Income Tax/Income before Income Tax		.17	.13	.19
Income Tax/All Tax (Excl. Employer Contributions)		.69	.98	.41
Income Tax/All Tax		.42	.38	.35
<i>20-30 percent</i>	9370			
Income Tax/Income before Income Tax		.26	.27	.23
Income Tax/All Tax (Excl. Employer Contributions)		.65	.91	.41
Income Tax/All Tax		.39	.34	.33
<i>30 percent or higher</i>	41244			
Income Tax/Income before Income Tax		.36	.37	.24
Income Tax/All Tax (Excl. Employer Contributions)		.67	.85	.37
Income Tax/All Tax		.40	.37	.31

For confidentiality, I report all medians as the mean of the middle five values. See **Table 1** for variable definitions.

TABLE 4 PANEL A
Firm-Level Descriptive Statistics

Firm-Years Reporting Tax Data in (1982,1989,1994,1999,2004)				
Income before Income Tax > 0	6,012			
& Income Tax > 0	94%			
& Other Tax > 0	99%			
Income before Income Tax ≤ 0	1,367			
& Income Tax > 0	45%			
& Other Tax > 0	99%			
Income before Income Tax > 0	6,012			
Less: Income Tax < 0 or Other Tax < 0	257			
Observations Used for Tax Statistics	5,755			
All Entities (N=5,755)		Mean	Median	Std
<i>Dependent Variables</i>				
Other Tax/Income before All Tax (Excl. Employer Contributions)		.169	.424	.222
Other Tax and Employer Contributions/Income before All Tax		.444	.099	.190
Other Tax/Assets		.018	.008	.030
Other Tax and Employer Contributions/Assets		.076	.063	.063
<i>Independent Variables</i>				
Income Tax/Income Before Income Tax		.373	.373	.197
Income Tax/Income Before Income Tax (median industry-year adjusted)		.063	.000	.185
Country Diversification		.328	.297	.229
Industry Diversification		.388	.387	.332
Tax Payments per Year		10.712	10.727	2.067
Tax Hours per Year		185.814	182.046	47.927
Inventory		.057	.032	.077
PPE		.074	.044	.086
Imports		.062	.010	.124
FirmSize		13.183	13.077	2.103
PctForSales		.210	.148	.199
Profit Margin		.129	.100	.114
Profit Margin (Before <i>Employer Contributions</i>)		.175	.154	.115
Intercompany Sales		.073	.021	.117
Cross Border Sales		.194	.110	.262
Value-Added		.092	.063	.095
Employees		8.097	8.104	1.806
Wages/GDPPC		1.506	1.384	.870

All variables in **Table 4** are computed at the firm-level. See **Table 1** for definitions of dependent variables. *Country Diversification* is one minus the revenue-based Herfindahl Index of the proportion of firm sales in each country. *Industry Diversification* is one minus the revenue-based Herfindahl Index of the proportion of firm sales in each 4-digit ISIC code. *Tax Payments per Year* is a weighted (by assets) number of tax payments a business must make in each country (WBG & PWC (2010)). *Tax Hours per Year* is a weighted (by assets) average number of hours a typical business must spend complying with tax obligations in each country (WBG & PWC (2010)). *Inventory* is inventory/assets. *PPE* is property, plant & equipment/assets. *Imports* are imports/assets. *FirmSize* is the natural log of total assets. *PctForSales* is foreign sales/sales. *Profit Margin* is (income before income tax and other tax)/sales. *Profit Margin* is (income before income tax, other tax, and employer contributions)/sales for regressions in **Table 5 Panel B** and **Table 6 Panel B**. *Intercompany Sales* are intercompany sales/assets. *Cross Border Sales* are non-local sales/assets. *Value-Added* is gross product/assets. *Employees* represents the natural log of total employees. *Wages/GDPPC* is a weighted average (by country assets) ratio of salary per employee to GDP per capita for each country of location. For confidentiality, I report all medians as the mean of the middle five values.

TABLE 4 PANEL B
Firm-Level Descriptive Statistics by Year
(All Statistics Exclude Employer Contributions)

Year 1982 (N=1345)	Mean	Median	Std Dev	Year 1999 (N=993)	Mean	Median	Std Dev
Income Tax/Income before Income Tax	.41	.42	.19	Income Tax/Income before Income Tax	.37	.37	.19
Other Tax/Income before All Tax	.17	.11	.18	Other Tax/Income before All Tax	.16	.08	.18
Total Tax/Income before All Tax	.51	.49	.18	Total Tax/Income before All Tax	.46	.43	.20
Income Tax/Assets	.04	.04	.04	Income Tax/Assets	.03	.02	.03
Other Tax/Assets	.02	.01	.03	Other Tax/Assets	.02	.01	.03
Income Tax/All Tax	.69	.76	.26	Income Tax/All Tax	.70	.78	.26
Year 1989 (N=1279)				Year 2004 (N=810)			
Income Tax/Income before Income Tax	.37	.36	.20	Income Tax/Income before Income Tax	.33	.32	.21
Other Tax/Income before All Tax	.17	.10	.19	Other Tax/Income before All Tax	.17	.09	.20
Total Tax/Income before All Tax	.47	.43	.20	Total Tax/Income before All Tax	.43	.40	.22
Income Tax/Assets	.03	.03	.03	Income Tax/Assets	.03	.02	.22
Other Tax/Assets	.02	.01	.02	Other Tax/Assets	.02	.01	.04
Income Tax/All Tax	.67	.74	.26	Income Tax/All Tax	.63	.71	.30
Year 1994 (N=1328)				Year 2008 (N=548) (Preliminary Data)			
Income Tax/Income before Income Tax	.37	.37	.20	Income Tax/Income before Income Tax	.36	.33	.25
Other Tax/Income before All Tax	.17	.10	.20	Other Tax/Income before All Tax	.15	.07	.20
Total Tax/Income before All Tax	.47	.44	.21	Total Tax/Income before All Tax	.44	.39	.25
Income Tax/Assets	.03	.03	.03	Income Tax/Assets	.03	.03	.03
Other Tax/Assets	.02	.01	.03	Other Tax/Assets	.02	.01	.04
Income Tax/All Tax	.65	.73	.27	Income Tax/All Tax	.70	.81	.29

All statistics computed above exclude *Employer Contributions*. This variable is not available for 2008, so for comparison purposes, *Employer Contributions* are left out of all years. Thus, *All Tax* above refers to *Income Tax* and *Other Tax*. See **Table 1** for other variable definitions. For confidentiality, I report all medians as the mean of the middle five values.

TABLE 5 PANEL A

*Summary Statistics for OLS Regressions of Other Tax (Scaled by Income)
on Measures of Tax Planning, Tax Compliance and Business Characteristics*

Dependent Variable = Other Tax/Income before All Tax (Excl. Employer Contributions)						
	(1a)		(1b)		(1c)	
	coefficient	p-value	coefficient	p-value	coefficient	p-value
Income Tax/Income before Income Tax			.191	.0000	.191	.0000
Country Diversification					-.063	.0111
Industry Diversification					.031	.0005
Tax Payments per Year					-.001	.7317
Tax Compliance per Year					.000	.4432
Inventory	.166	.0005	.171	.0002	.181	.0000
PPE	-.038	.3670	-.034	.4131	-.022	.5810
Imports	.052	.0495	.071	.0071	.073	.0050
FirmSize	.014	.0000	.013	.0000	.013	.0050
PctForSales	-.213	.0000	-.221	.0000	-.175	.0000
Profit Margin	-.187	.0000	-.139	.0000	-.136	.0000
Intercompany Sales	.042	.2058	.046	.1639	.063	.0554
Cross Border Sales	-.030	.0356	-.024	.0926	-.026	.0662
Value-Added	.787	.0000	.758	.0000	.771	.0000
Industry=						
Food	-.132	.0000	-.126	.0000	-.123	.0000
Chemical	-.165	.0000	-.159	.0000	-.153	.0000
Metal Manufacturing	-.156	.0000	-.150	.0000	-.148	.0000
Industrial Machinery & Equipment	-.150	.0000	-.145	.0000	-.142	.0000
Electric Equipment Manufacturing	-.181	.0000	-.177	.0000	-.174	.0000
Transportation Equip Manufacturing	-.156	.0000	-.151	.0000	-.149	.0000
Other Manufacturing	-.159	.0000	-.153	.0000	-.150	.0000
Wholesale Trade	-.125	.0000	-.118	.0000	-.115	.0000
FIRE	-.135	.0000	-.134	.0000	-.135	.0000
Services	-.173	.0000	-.164	.0000	-.157	.0000
Other	-.079	.0002	-.075	.0003	-.072	.0004
Year=						
1989	-.006	.3770	-.008	.1855	.002	.7533
1994	.002	.8176	.002	.7690	.013	.0748
1999	-.018	.0176	-.018	.0143	-.005	.5790
2004	-.004	.6725	-.004	.6523	.011	.2579
Constant	.118	.0003	.118	.0002	.100	.0075
R-Square	.1712		.2082		.2114	
Distinct Firms (Clusters)	3100		3100		3100	
Firm-Years (N)	5755		5755		5755	

See **Table 4** for variable definitions. Standard errors are clustered by firm. *Income before Income Tax* in the regression is median industry-adjusted by year.

TABLE 5 PANEL B

Summary Statistics for OLS Regressions of Other Tax and Employer Contributions (Scaled by Income) on Measures of Tax Planning, Tax Compliance and Business Characteristics

Dependent Variable = Other Tax and Employer Contributions/Income before All Tax						
	(1d)		(1e)		(1f)	
	coefficient	p-value	coefficient	p-value	coefficient	p-value
Income Tax/Income before Income Tax			.257	.0000	.257	.0000
Country Diversification					.014	.5846
Industry Diversification					.028	.0049
Tax Payments per Year					-.001	.7467
Tax Hours per Year					.000	.2800
Inventory	.113	.0463	.121	.0274	.117	.0333
PPE	-.008	.8640	-.002	.9675	-.003	.9383
Imports	-.066	.2230	-.039	.1762	-.038	.1738
FirmSize	-.045	.0000	-.047	.0000	-.049	.0000
PctForSales	-.145	.0000	-.152	.0000	-.164	.0000
Profit Margin	-.533	.0000	-.467	.0000	-.461	.0000
Intercompany Sales	.031	.3808	.034	.3178	.022	.5272
Cross Border Sales	-.047	.0022	-.038	.0118	-.035	.0181
Value-Added	.480	.0000	.430	.0000	.438	.0000
Employees	.057	.0000	.058	.0000	.058	.0000
Wages/GDPPC	.020	.0000	.019	.0000	.019	.0000
Industry=						
Food	-.111	.0000	-.111	.0000	-.112	.0000
Chemical	-.134	.0000	-.134	.0000	-.135	.0000
Metal Manufacturing	-.054	.0092	-.054	.0092	-.056	.0065
Industrial Machinery & Equipment	-.050	.0128	-.050	.0128	-.052	.0090
Electric Equipment Manufacturing	-.089	.0000	-.089	.0000	-.090	.0000
Transportation Equip Manufacturing	-.032	.1620	-.032	.1620	-.033	.1494
Other Manufacturing	-.084	.0000	-.084	.0000	-.085	.0000
Wholesale Trade	-.125	.0000	-.125	.0000	-.124	.0000
FIRE	-.073	.0002	-.073	.0002	-.068	.0007
Services	-.074	.0003	-.074	.0003	-.072	.0004
Other	-.053	.0077	-.053	.0077	-.050	.0118
Year=						
1989	.003	.6566	.003	.6566	.013	.1060
1994	.031	.0000	.031	.0000	.042	.0000
1999	.003	.7849	.003	.7849	.014	.1537
2004	.037	.0003	.037	.0003	.049	.0000
Constant	.706	.0000	.706	.0000	.721	.0000
R-Square	.2352		.2841		.2857	
Distinct Firms (Clusters)	3100		3100		3100	
Firm-Years (N)	5755		5755		5755	

See **Table 4** for variable definitions. Standard errors are clustered by firm. *Income before Income Tax* in the regression is median industry-adjusted by year.

TABLE 6 PANEL A

*Summary Statistics for OLS Regressions of Other Tax (Scaled by Assets)
on Measures of Tax Planning, Tax Compliance and Business Characteristics*

Dependent Variable = Other Tax/Assets						
	(2a)		(2b)		(2c)	
	coefficient	p-value	coefficient	p-value	coefficient	p-value
Income Tax/Income before Income Tax			.003	.0311	.003	.0232
Country Diversification					-.018	.0000
Industry Diversification					.006	.0000
Tax Payments per Year					-.001	.0139
Tax Hours per Year					.000	.5610
Inventory	.019	.0044	.019	.0041	.022	.0011
PPE	-.029	.0000	-.029	.0000	-.025	.0002
Imports	.019	.0000	.019	.0000	.019	.0000
FirmSize	.001	.0002	.001	.0003	.001	.0000
PctForSales	-.054	.0000	-.054	.0000	-.041	.0000
Profit Margin	.046	.0000	.047	.0000	.047	.0000
Intercompany Sales	.002	.7411	.002	.7341	.006	.2520
Cross Border Sales	-.002	.4430	-.002	.4644	-.002	.3588
Value-Added	.218	.0000	.218	.0000	.223	.0000
Constant	.007	.1750	.007	.1748	.009	.0000
R-Square	.3918		.4001		.4171	
Industry Indicators	YES		YES		YES	
Year Indicators	YES		YES		YES	
Distinct Firms (Clusters)	3100		3100		3100	
Firm-Years (N)	5755		5755		5755	

See **Table 4** for variable definitions. Standard errors are clustered by firm. *Income before Income Tax* in the regression is median industry-adjusted by year.

TABLE 6 PANEL B

Summary Statistics for OLS Regressions of Other Tax and Employer Contributions (Scaled by Assets) on Measures of Tax Planning, Tax Compliance and Business Characteristics

Dependent Variable = Other Tax and Employer Contributions/Assets						
	(2d)		(2e)		(2f)	
	coefficient	p-value	coefficient	p-value	coefficient	p-value
Income Tax/Income before Income Tax			.008	.0180	.008	.0168
Country Diversification					-.027	.0007
Industry Diversification					.004	.0879
Tax Payments per Year					-.002	.0004
Tax Hours per Year					.000	.0079
Inventory	.003	.8099	.003	.7961	.008	.5635
PPE	-.043	.0003	-.043	.0003	-.036	.0024
Imports	-.002	.7377	-.002	.8272	-.001	.8876
FirmSize	-.030	.0000	-.030	.0000	-.030	.0000
PctForSales	-.096	.0000	-.096	.0000	-.076	.0000
Profit Margin	.102	.0000	.104	.0000	.104	.0000
Intercompany Sales	-.020	.0270	-.020	.0278	-.015	.0872
Cross Border Sales	.009	.0193	.010	.0162	.010	.0149
Value-Added	.336	.0000	.334	.0000	.342	.0000
Employees	.031	.0000	.031	.0000	.031	.0000
Wages/GDPPC	.008	.0000	.008	.0000	.008	.0000
Constant	.202	.0000	.202	.0000	.218	.0000
R-Square	.5236		.5242		.5305	
Industry Indicators	YES		YES		YES	
Year Indicators	YES		YES		YES	
Distinct Firms (Clusters)	3100		3100		3100	
Firm-Years (N)	5755		5755		5755	

See **Table 4** for variable definitions. Standard errors are clustered by firm. *Income before Income Tax* in the regression is median industry-adjusted by year.

DATA APPENDIX

BEA Survey Questions for Other Taxes and Employer Contributions

Other Taxes

The survey question that provides data with respect to *Other Taxes* appears in the 2004 benchmark survey as follows:

“Taxes (other than income and payroll taxes) and nontax payments (other than production royalty payments) —

Report all such taxes and nontax payments whether or not included in revenues or expenses in the income statement. Include amounts paid or accrued for the year, net of refunds or credits, to foreign governments, their subdivisions and agencies for —.

- a.** Sales, consumption, and excise taxes collected by the affiliate on goods and services the affiliate sold;
- b.** Property and other taxes on the value of assets and capital;
- c.** Any remaining taxes (other than income and payroll taxes); and
- d.** Import and export duties, license fees, fines, penalties, and all other payments or accruals of nontax liabilities (other than production royalty payments for natural resources).”

NOTE: For the U.S. parent survey covering the domestic operation, “foreign government” is changed to “Federal, state, and local governments” and “affiliate” in part a. is changed to “U.S. parent”. Otherwise, the question is the same.

Employer Contributions

The survey question that provides data with respect to *Employer Contributions* appears in the 2004 benchmark survey as follows:

“Employee benefit plans – Employer expenditure for all employee benefit plans

Report employer expenditures for all employee benefit plans including those mandated by government statute, those resulting from collective bargaining contracts and those that are voluntary. Include Social Security and other retirement plans, life and disability insurance, guaranteed sick pay programs, worker’s compensation insurance, medical insurance, family allowances, unemployment insurance, severance pay funds, etc. Also include deferred post-employment and post-retirement expenses per FAS 106. If plans are jointly financed by the employer and the employee, include only the contributions of the employer.”