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TAX SAVINGS FOR U.S.-HEADQUARTERED, NON-U.S.-INCORPORATED
MULTINATIONAL FIRMS

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1. Introduction

The application of a different country's tax laws to the parent of a multinational firm may produce tax savings. (Markle and Shackelford (2014), Markle and Shackelford (2012)) In addition, U.S. law provides tax planning opportunities for a U.S.-headquartered firm that separates its incorporation location from its U.S. operations. (Desai (2009), Shaviro (2011)) This prompts the hypothesis that a U.S.-headquartered firm might save on income taxes when its parent incorporates outside the United States. (Desai and Dharmapala (2010), Shaviro (2011)) This hypothesis is the core claim examined in this study.

This paper investigates U.S.-headquartered multinational firms that incorporate outside of the U.S. Recent prominent news stories about companies including Walgreens and Burger King have highlighted firms' tax-motivated plans to "invert," or replace U.S.-parented structures with non-U.S.-parented structures. (Kleinbard (2014); Shay (2014)) These stories give the impression that savvy U.S.-based firms are taking advantage of "decentered" (Desai (2009)) non-U.S.-parented structures to save taxes. However, what empirical evidence there is suggests that this is still a relatively rare practice (Allen and Morse 2013).

We examine 4,435 U.S.-headquartered, multinational firms publicly traded in the U.S. between 1999 and 2013. Of these firms, 260, or 5.9%, incorporate outside the U.S. While the overall percentage has remained relatively stable over the sample period, the proportion of non-Canadian firms among the firms incorporated outside the United States has increased over time. We also find that non-Canadian firms that incorporate abroad are larger, and have a greater proportion of non-U.S. revenue, than firms that incorporate within the U.S. Canadian firms, which make up about half of the number of non-U.S.-incorporated firms in our sample, are similar to U.S.-incorporated firms in size and proportion of non-U.S. revenue.

Firms have pre-tax income less than or equal to zero in a sizable proportion of the firm years in our sample. Among firm years involving U.S.-incorporated parents, 32.6% report a pre-tax loss (or pre-tax income equal to zero). For firm years involving Canadian-incorporated parents, the proportion of loss firm years is 34.6%. It is 22.9% for firms with parents in tax haven jurisdictions and 29.9% for firms with parents in foreign jurisdictions other than Canada and other than tax havens. We consider profit and loss firms separately in all of our tests, as we

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predict that the impact of non-U.S. incorporation should vary based on a firm's profit or loss status.

We investigate whether the small number of firms that incorporate abroad recognize superior tax outcomes compared to similar firms incorporated in the U.S. If “decentering” offers greater tax planning opportunities, then firms incorporated abroad should recognize lower tax payments. But a contrasting body of literature that details the tax savings available for sophisticated U.S.-parented multinational firm structures suggests, to the contrary, that firms can obtain similar tax savings without incorporating outside the United States. (Fleming, Peroni and Shay (2009), Kleinbard (2011), OECD (2013)).

If U.S.-parented structures offer tax planning efficiencies that are similar to those offered by non-U.S.-parented structures, then we should find no difference in tax outcomes between the two groups of firms, even for profitable firms. But if non-U.S.-parented structures offer superior tax planning efficiencies, we should find lower effective tax rates (that is, better tax results), at least for profitable non-U.S.-parented firms. Non-U.S.-parented loss firms might show worse tax results even if non-U.S.-parented structures offer better tax planning for profitable firms. For example, non-U.S.-parented loss firms may have to allocate loss, as well as income, to low-tax jurisdictions, resulting in a lower tax benefit

Most other research has not investigated the phenomenon of firms that “decenter” (Desai (2009)) by separating their incorporation location from their center of operations. Some assume that all firms have identical locations for center of activities (or domicile) and management. (e.g. Markle and Shackelford (2014); Markle and Shackelford (2012); Voget (2011)) This assumption arises in part from database restrictions. Others examine only U.S.-incorporated firms (e.g. Dyreng and Lindsey (2009); Bird, Edwards and Shevlin (2014)).

This paper offers an innovative approach to examining firms' decisions about incorporation location. In contrast to other work, we do not assume that headquarters location is equivalent to incorporation location. Instead, we independently establish the headquarters and incorporation location for each firm year. This permits us to populate a treatment group of firms that have decentered, U.S.-headquartered and non-U.S.-incorporated structures. We compare the outcomes for these decentered firms to the control group of firms that have the more common U.S.-headquartered and U.S.-incorporated structure.

Some other related research focuses primarily on the tax results of profitable firms. (e.g. Dyreng, Hanlon, Maydew & Thornock (2014)); Markle & Shackelford (2012)) In contrast, we analyze both the profit firms and the loss firms in our sample. This is because an analysis of the possible benefits and costs of non-U.S. incorporation should consider both the case where a firm is profitable and also the case where it is loss-making. For example, it may be that a tax-efficient structure with a non-U.S.-incorporated parent produces not only larger after-tax profits for profit firms, but also larger after-tax losses for loss firms.

In support of the view that decentering offers tax savings opportunities, we find strong evidence that profitable U.S.-headquartered firms incorporated outside of the U.S. recognize superior tax outcomes. For example, non-U.S. incorporation significantly correlates with a reduction in the

current cash effective tax rate of 2% for Canadian firms, 10% for non-U.S. firms incorporated in a country other than Canada or a tax haven, and 6% for non-U.S. firms incorporated in a tax haven.

Conversely, our findings for loss firms show more variation, and suggest that some non-U.S.-incorporated, U.S.-headquartered firms experience worse tax results than their U.S.-incorporated loss firm counterparts. Canadian-incorporated loss firms show more tax benefit than U.S.-incorporated loss firms: book effective tax rates are 3% lower. Loss firms incorporated in tax havens show less tax benefit than U.S.-incorporated loss firms: book effective tax rates that are 4% higher. There is no difference in book effective tax rates results for loss firms incorporated in other foreign jurisdictions, compared to U.S.-incorporated firms.

To summarize, we find that non-U.S.-incorporated profitable firms have better tax results compared to U.S.-incorporated profitable firms. Loss firms incorporated in tax havens tend to have worse tax results compared to U.S.-incorporated loss firms. This suggests that some non-U.S.-incorporated multinationals with efficient tax planning structures face the problem that their losses, as well as their profits, must be allocated to low-tax jurisdictions. Their transfer pricing and other tax planning strategies, in other words, may be sticky.

Finally, we include an analysis of whether multinational firms experience better after-tax results if they are profitable, and worse after-tax results if they are loss-making. The analysis we present is preliminary, but consistent with our effective tax rate results. That is, we find that non-U.S.-incorporated profit firms are more profitable on an after-tax basis compared to their U.S. counterparts regardless of the jurisdiction of incorporation. Canadian loss firms and tax haven loss firms lose more on an after-tax basis compared to their U.S. counterparts. Firms incorporated in other non-U.S. jurisdictions are more profitable (less loss-making) on an after-tax basis whether they are profit firms or loss firms. This differential after-tax effect for profit and loss firms, particularly among firms with Canadian or tax haven-incorporated parents, may help explain why so few firms take advantage of the alternative organizational structure.

This paper proceeds as follows. Section 2 discusses the problem of multinational firm location and tax planning, including prior literature and relevant law. Section 3 presents our study design, and Section 4 discusses our results. Section 5 concludes.

2. Multinational Firm Location and Tax Planning

2.1. Multinational Firm Location and Tax Results

Different countries impose different corporate income tax rates and have different rules for calculating corporate income tax bases. For example, a particular country may (or may not) impose residual tax on the repatriation of profits from a foreign subsidiary to a domestic parent. Also, a particular country may (or may not) currently tax a portion of the income of foreign subsidiaries owned by a parent firm domiciled or incorporated in that country.

The effect of many such tax rules depends, at least as a formal matter, on the location of the parent of a multinational corporate group. The parent is the entity in which public shareholders

invest and also the entity that in turn owns all of the subsidiary stock and other assets of the group. The existence of different tax laws in different countries suggests that a multinational firm may pay different rates of tax depending on where its parent is located. (Markle and Shackelford (2014))

However, multinational firms can use numerous strategies, such as transfer pricing, intercompany financing, and hybrid entities and instruments, to allocate income and deductions in order to reduce their income tax liability. (Fleming, Peroni and Shay (2009), Kleinbard (2011), OECD (2013)) Different countries have in some cases facilitated the use of such tax planning strategies, as when a particular country negotiates a tax arrangement with a particular corporation to induce the corporation to invest in that country. (Kleinbard (2011)) The availability of tax planning suggests that a multinational's tax liability may not depend as much on where its parent is located.

Prior literature has investigated the relationship between firm location and effective tax rate in light of these conflicting incentives. It has found that the location of the parent corporation affects the firm's effective tax rate. It has also shown that the presence of tax haven subsidiaries reduces a multinational firm's effective tax rate. Finally, it has found that tax considerations help predict some firm headquarters decisions.

Markle and Shackelford find a persistent headquarters effect on a multinational's effective tax rate. In particular, Japanese-headquartered multinationals systematically show the highest ETRs, followed by the United States. When controlling for industry, year, and other variables, Markle and Shackelford show a "country main effect" of 33% for Japan, 24.3% for the United States, 21.5% for Canada, and 16.5% for the UK. (Markle and Shackelford (2014)). The same authors find that effective tax rates were generally stable from 2006 to 2011 (Markle and Shackelford (2014)) although they separately find a declining ETR trend over the twenty years ending in 2009. (Markle and Shackelford (2012)) Contemporaneous work also shows a decline in tax rates for both domestic and multinational firms for a period of approximately twenty-five years ending in 2012. (Dyreng, Hanlon, Maydew and Thornock (2014))

In addition to headquarters location, subsidiary location appears to affect multinational firms' ETR. Dyreng and Lindsay find that U.S. multinationals with some presence in a tax haven country have 1.5% less worldwide tax expense than U.S. multinationals with no tax haven activity, and that firms with some tax haven presence report lower tax rates on non-U.S. taxable income. (Dyreng and Lindsay (2009)). Markle and Shackelford find some evidence to support the hypothesis that the formation of a "financial subsidiary," for example in a low-tax jurisdiction, correlates with tax savings, or in other words lower ETR outcome variables. (Markle and Shackelford (2014))

Another line of literature investigates multinationals' initial or subsequent decisions about headquarters location. Allen and Morse find that U.S. incorporation is the prevailing choice for U.S.-headquartered multinationals conducting initial public offerings. 97% of their sample of such firms are incorporated in the United States. (Allen and Morse (2013)) However, Voget finds based on a 1997-2007 sample that a multinational is more likely to relocate its headquarters if its home country imposes a tax currently on some income of foreign subsidiaries or imposes a

tax upon repatriation of profits from foreign subsidiaries. Both independent variables suggest a less tax efficient ex ante firm structure. (Voget (2011)) Bird, Edwards and Shevlin examine a sample of U.S. public companies acquired between 1995 and 2010. They report, consistent with Voget's result, that the presence of "locked-out earnings" which would be taxable on repatriation to a domestic parent increases the likelihood that an acquirer will be foreign. (Bird, Edwards and Shevlin (2014))

2.2. Incorporation Choices for U.S.-Headquartered Multinationals

2.2.1. *U.S. Parent and Non-U.S. Parent Alternatives.*

It is useful to compare the tax planning opportunities under two alternative structure choices for U.S.-headquartered multinationals. In one structure, the U.S.-headquartered firm has a parent corporation incorporated in the U.S. In the other structure, the U.S.-headquartered firm has a parent incorporated outside the U.S.

The sole marker of a parent corporation's status for U.S. federal income tax purposes is its place of incorporation. Such parent corporations are U.S. corporate taxpayers if they incorporate in the United States, for example under the laws of Delaware. The vast majority of U.S.-headquartered multinationals choose U.S. incorporation for their parent, and such firms populate the control group in our study here. The small minority of U.S.-headquartered multinationals that choose non-U.S. incorporation for their parent form our treatment group.

2.2.2. *U.S.-Parented Structure.*

A publicly traded multinational with a U.S. parent often uses a corporate structure based on three building blocks: (1) the U.S. parent ("U.S. Parent"); (2) an intermediate, low-tax non-U.S. holding company ("Non-U.S. Holdco"); and (3) a non-U.S. operating company ("Non-U.S. Opco"). A structure may feature various twists on this three-box structure. Here, it is presented in simplest form: public shareholders own U.S. Parent; U.S. Parent owns Non-U.S. Holdco; and Non-U.S. Holdco owns Non-U.S. Opco. (Kleinbard (2011), Shay (2004)) Appendix 1 provides a diagram.

The main income tax planning objective of this U.S.-parented structure is to channel as much taxable income as possible to Non-U.S. Holdco, since Non-U.S. Holdco is the low-tax entity. Empirical research shows that multinational firms use income-shifting strategies to accomplish this objective (Klassen and LaPlante (2012)), although perhaps to a lesser extent than originally thought. (Dharmapala (2014)) Non-U.S. Holdco is carefully chosen to maximize tax planning advantages including low tax rate, beneficial tax treaty network, and flexible transfer pricing rules. In contrast, U.S. Parent faces a statutory rate of 35% and an effective rate of perhaps 25%, depending on industry. (Markle and Shackelford (2014)) Non-U.S. Opco also faces whatever rate is imposed by the country in which the firm has decided to operate. Non-U.S. Opco presumably chooses its place of incorporation largely for non-tax reasons such as customer base or resource availability.

The U.S.-parented structure faces three important obstacles deriving from U.S. federal income law when it channels taxable income to low-taxed non-U.S. Holdco. These obstacles are the subpart F rules, earnings stripping limitations and earnings lockout. We focus on the tax aspects of these obstacles here. However, other considerations, including financial accounting effects, also exist. For example, when earnings are repatriated, the problem of “earnings lockout” means not only the possibility of residual tax imposed on the U.S. parent, but also the possibility of an adverse accounting result if a firm reduces its permanently reinvested earnings account. (Blouin, Krull and Robinson (2014))

First, the subpart F or “controlled foreign corporation” rules require a U.S. parent firm to pay U.S. corporate income tax on certain passive and mobile income of the parent’s non-U.S. subsidiaries. Firms can plan to minimize subpart F income, for example by using so-called check-the-box rules. These rules treat affiliates as branches and disregard inter-affiliate transactions that might otherwise produce subpart F income. (Fleming, Peroni and Shay (2009); Kleinbard (2011), Lokken (2005)).

Second, the firm has limited ability to erode the U.S. tax base. It can use transfer pricing tools to locate valuable intangible assets in the low-tax Non-U.S. Holdco. Also, such firms have historically successfully allocated deductions to U.S. parents and related income to non-U.S. subsidiaries. (White House and Treasury (2012)) But “earnings stripping” planning, in which U.S. Parent makes deductible interest, royalty, or other payments to Non-U.S. Holdco, does not achieve the desired result of reducing income taxable in the U.S. This is because such intercompany payments are generally treated as subpart F income when received by Non-U.S. Holdco, and thus taxed currently to U.S. Parent in any event. (Wells (2010))

Earnings lockout is the third problem with the three-box U.S.-parented structure. Profit allocated to the low-taxed Non-U.S. Holdco sandwiched between U.S. Parent and Non-U.S. Opco can be “locked out,” meaning that a significant residual U.S. federal corporate income tax would be due on the repatriation of profit from Non-U.S. Holdco to U.S. Parent. (Graham, Hanlon and Shevlin (2010)) Such residual tax is subject to reduction to account for foreign income taxes paid on the profit repatriated. But in many cases, little foreign income tax has been paid due to a successful strategy to place taxable income in low-taxed Non-U.S. Holdco, although foreign tax credit positions tend to vary across industries. (Gravelle (2012))

It is possible to engage in tax planning in response to each of these obstacles so as to minimize U.S. federal corporate income taxes while still achieving business objectives. (Altshuler and Grubert (2002)), Fleming, Peroni and Shay (2009), Kleinbard (2011)) However, such planning carries transaction costs. Therefore, for at least some firms, the non-U.S.-parented structure alternative outlined below may deliver better tax efficiency and/or lower transaction costs.

2.2.3. Non-U.S.-Parented Structure.

If a U.S.-headquartered firm has a non-U.S. parent, the building blocks of its structure are different than if the firm has a U.S.-parent. The structure presented here assumes a relatively low-tax non-U.S. parent corporation, “Non-U.S. Parent.” The other entities in the structure consist of a “Non-U.S. Opco” and a “U.S. Opco.” In simplest form, the non-U.S.-parented

structure involves public shareholders owning Non-U.S. Parent. Non-U.S. Parent in turn directly owns both Non-U.S. Opco and U.S. Opco. (Wells (2010), Treasury (2002)) In other words, the non-U.S. and U.S. operating companies are sibling companies. Appendix 1 provides a diagram.

This alternative non-U.S.-parented structure solves all three of the problems presented by the previously discussed U.S. parented structure. First, the subpart F rules do not apply, because they recharacterize income earned by non-U.S. corporations only when, roughly speaking, more than 50% of the corporation's equity is owned by "United States shareholders". A large, publicly traded non-U.S. corporate multinational is generally not owned by such shareholders within the meaning of the statute, which includes certain prerequisites of concentrated ownership. (Internal Revenue Code Sections 951 et seq). Other rules applicable to non-U.S. corporations with U.S. shareholders, such as the passive foreign investment company or "PFIC" rules, also generally do not apply to a large, publicly traded multinational engaged in an active business. (Internal Revenue Code Sections 1291 et seq.).

Second, existing U.S. law does not limit significantly the capacity of the firm to erode its U.S. tax base by making deductible payments from the U.S. Opco to its low-tax Non-U.S. Parent. (Wells (2010)) In support of this view, prior research demonstrates that earnings stripping strategies have been an important source of tax cost savings for firms that have undertaken inversion transactions to replace a U.S.-parented structure with a non-U.S.-parented structure. (Cloyd, Mills and Weaver (2003), Desai and Hines (2002), Seida and Wempe (2004)) U.S. tax law limits earnings stripping where a U.S. corporation makes deductible payments to its non-U.S. parent, but the limitation only applies to interest deductions and sets a very high ceiling roughly equal to 50% of the U.S. affiliate's EBITDA. (Internal Revenue Code 163(j)) Other legislative changes have been proposed on this front, but they are not yet law. (Treasury (2007))

Third, the non-U.S.-parented structure addresses the earnings lockout problem. Recall that in the U.S.-parented structure, U.S. Parent's repatriation of foreign earnings allocated to low-tax Non-U.S. Holdco will attract residual U.S. income tax, subject to the foreign tax credit. In contrast, Non-U.S. Parent can repatriate profits from Non-U.S. Opco without paying residual U.S. tax. Of course, other tax frictions might arise, including withholding taxes due on repatriation from U.S. Opco or Non-U.S. Opco to Non-U.S. Parent. (Treasury (2002)) But the non-U.S. parent structure addresses the earnings lockout problem as it currently manifests in U.S.-parented structures of U.S. based multinational firms. That is, the non-U.S. parent structure permits Non-U.S. Opco to distribute foreign earnings to Non-U.S. Parent without paying any residual U.S. tax.

All three of the solutions described above are solutions for *profitable* firms. This is because only profitable firms have an interest in reducing taxable income by avoiding the subpart F rules, facilitating earnings stripping, and minimizing earnings lockout. We should expect these solutions to produce the most tax savings for profitable firms that incorporate outside the U.S.

For loss firms, the analysis may be quite different. For example, while a multinational firm may prefer to allocate taxable operating income to low-tax jurisdictions, it presumably prefers to allocate taxable operating losses to high-tax jurisdictions. It may be that a non-U.S.-parented structure that presents the advantage of minimizing tax on profits also presents the disadvantage

of reducing the tax benefit that can be obtained from losses. This could be, for example, because transfer pricing, intercompany leverage and other strategies cannot be easily amended to reallocate operating results for tax purposes if those results turn out to be losses rather than profits.

2.2.4. *Comparing U.S.-Parented and Non-U.S.-Parented Structures.*

Both alternatives described above are simple models of complex corporate structures that support more sophisticated tax planning. It is often possible to achieve a low income tax rate with either approach. But in at least some cases, the non-U.S.-parented structure should provide an advantage, net of all costs, relative to the U.S.-parented structure. This presents a puzzle, because the non-U.S. parented structure is very rarely used for U.S.-headquartered firms. (Allen & Morse (2013))

In this paper, we divide publicly-traded, U.S.-headquartered multinational firms into a control group of firms with a U.S.-incorporated parent; and a treatment group of firms with a non-U.S.-incorporated parent. We do not differentiate among the non-U.S.-incorporated treatment firms based on how they came to have a non-U.S. parent. In some cases, a non-U.S. parent corporation may head the corporate structure from the beginning, as in the cases of Accenture or Michael Kors. Or a non-U.S. parent may replace a U.S. parent in a corporate structure at a later point in the corporation's life, for example in connection with a buyout transaction, as in the cases of Herbalife or Seagate; a stand-alone inversion transaction, as in the cases of Ingersoll-Rand or Tyco; or a merger transaction, as in the cases of Daimler-Chrysler or Aon. Regardless of how a U.S.-headquartered multinational came to have a non-U.S. parent, the non-U.S.-parented structure should offer the firm the advantages of expanded tax planning opportunities. Expanded opportunities might result from freedom from the subpart F rules; fewer restrictions on earnings stripping; and/or absence of residual U.S. tax on the repatriation of profits to the publicly traded parent corporation.

We separately consider firm years that are profitable as opposed to loss-making for most of our tests. These subsets are composed of firm years where firms report pre-tax income greater than zero ("Profit Firm Years") and firm years where firms report pre-tax income equal to or less than zero ("Loss Firm Years"). We separately consider Profit Firm Years and Loss Firm Years because the tax planning we aim to investigate should produce better tax results for Profit Firm Years, but not necessarily for Loss Firm Years.

We further divide our treatment group of U.S.-headquartered multinational firms with a non-U.S.-incorporated parent into three subgroups of firms. These groups are composed of firms with parents incorporated in (a) Canada ("Canada Firms"), (b) neither Canada nor a tax haven ("Other Foreign Firms"), and (c) tax havens ("Tax Haven Firms"). Other Foreign Firms include firms with a parent corporation incorporated in the UK or in Israel. We consider a country a tax haven if it is classified as such by Dharmapala and Hines (2009).¹ (We sometimes call our

¹ The Dharmapala and Hines list represents the consolidation of two different lists, one from Hines and Rice (1994) and one from an OECD (2000) report. A firm is classified as being incorporated in a tax haven jurisdiction if the 2-digit country code corresponds to a country listed as a tax haven (Dharmapala and Hines, 2009). These countries are: Andorra, Anguilla, Antigua and Barbuda, Aruba, Bahamas,

control group of U.S.-headquartered multinational firms with a U.S.-incorporated parent “United States Firms”.)

Other work has found that geographic proximity strengthens economic ties including cross-border trade (Frankel and Romer (1999)) and merger activity (Ahern et al. (2015)). Because of geographic proximity, U.S.-headquartered firms should be more likely to incorporate in Canada, relative to incorporating in other jurisdictions, for non-tax economic and business reasons. Thus, Canada Firms should show less evidence of tax planning compared to other non-U.S.-incorporated firms. For example, Canada Firms should show smaller effective tax rate reductions relative to the effective tax rates of U.S.-incorporated firms.

Prior literature has also found that a multinational firm’s tax haven operations can reduce effective tax rates. (Dyreg and Lindsey (2009); (Markle and Shackelford (2014)) Consistent with this literature, we predict that Tax Haven Firms will show the clearest and strongest evidence of tax planning. We predict that Other Foreign Firms, which may have some business reason for non-U.S. incorporation, but we assume not as strong a reason as Canada Firms, will show results for our tax outcome variables that fall between the results for Canada Firms and the results for Tax Haven Firms.

3. Study Design

3.1.Hypotheses and Variables

3.1.1. *Hypotheses*

Our study examines a treatment group of U.S.-headquartered, publicly traded multinational firms incorporated outside the United States and a control group of U.S.-headquartered, publicly traded multinational firms incorporated in the United States. We seek to evaluate whether U.S.-headquartered firms that incorporate outside the United States engage in successful income tax reduction planning compared to firms incorporated inside the United States. If U.S.-headquartered, non-U.S.-incorporated multinationals show tax savings relative to U.S.-headquartered, U.S.-incorporated multinationals, then this suggests that more firms should choose to incorporate their parent outside the U.S. (Scholes et al. (2014)) Yet fewer than 6% of U.S.-headquartered multinational firms make this choice.

We also seek to investigate why so few U.S.-headquartered multinationals incorporate outside the United States. For example, it could be that a tax savings finding for Profit Firm Years is offset by a finding of worse tax results for Loss Firm Years for firms incorporated outside the U.S. In other words, perhaps non-U.S.-incorporated firms without pre-tax income cannot efficiently use losses allocated to low-tax jurisdictions to offset group profits.

Bahrain, Barbados, Bermuda, British Virgin Islands, Cayman Islands, Channel Islands, Cook Islands, Cyprus, Dominica, Gibraltar, Hong Kong, Ireland, Isle of Man, Jordan, Lebanon, Liberia, Lichtenstein, Luxembourg, Macao, Maldives, Malta, Marshall Islands, Mauritius, Monaco, Montserrat, Nauru, Netherland Antilles, Niue, Panama, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, San Marino, Seychelles, Singapore, Switzerland, Tonga, Turks and Caicos Islands, Vanuatu, and Virgin Islands (U.S.).

The hypotheses that we seek to test follow:

H1: The probability that a firm will incorporate outside the United States will increase with:

- 1) Profitability, because of tax planning economies of scale;
- 2) Firm size, because of tax planning economies of scale;
- 3) Operational presence outside the United States;
- 4) Leverage, because of greater potential for earnings stripping with a more highly leveraged firm;
- 5) Lower intellectual property holdings, because firms with more intellectual property have greater capacity to use tax-reduction techniques with a U.S.-parented structure.

H2A: U.S.-headquartered, non-U.S. incorporated multinational publicly traded firms that are profitable have lower book and/or cash effective tax rates compared to similar firms incorporated within the United States.

H2B: U.S.-headquartered, non-U.S. incorporated multinational publicly traded firms that are loss firms have higher book effective tax rates compared to similar firms incorporated within the United States. That is, non-U.S.-incorporated firms realize smaller tax benefits from losses compared to U.S.-incorporated firms.

H3A: U.S.-headquartered, non-U.S.-incorporated multinational publicly traded firms that are profitable have higher after-tax income compared to similar firms incorporated within the United States. That is, the tax savings these firms obtain is not fully offset by tax planning and other related costs.

H3B: U.S.-headquartered, non-U.S.-incorporated multinational publicly traded firms that are loss firms have lower after-tax income compared to similar firms incorporated within the United States.

We test each these hypotheses separately for each of three groups of non-U.S.-incorporated firms: Canada Firms, Other Foreign Firms, and Tax Haven Firms. We predict that non-tax reasons connected to geographic proximity for incorporating a U.S.-headquartered firm in Canada will be relatively strong. We also predict that the non-tax reasons for incorporating a U.S.-headquartered firm in a tax haven will be relatively weak. For Hypothesis 1, this means that we predict that factors including profitability and size will correlate with non-U.S. incorporation for Canada Firms less strongly and non-U.S. incorporation for Tax Haven Firms more strongly. For hypotheses 2 and 3, we predict that Tax Haven firms will show the most

extreme tax savings for Profit Firm Years and the most significant adverse tax results for Loss Firm Years.

3.2. Models for Testing Hypotheses

3.2.1. Hypothesis 1.

Table 1 lists and defines the variables we use in our tests of the hypotheses.

We test H1 with a logit regression. Our model follows:

$$\begin{aligned} \text{Probability (Non-U.S. Incorporation)}_{it} = & \beta_0 + \beta_1 (\text{Pre-Tax Return on Sales})_{it} \\ & + \beta_2 (\text{Log of Sales})_{it} + \beta_3 (\text{Percentage of Non-U.S. Sales})_{it} + \beta_4 (\text{Leverage})_{it} \\ & + \beta_5 (\text{R\&D Spending})_{it} + \beta_6 (\text{Year})_{it} + \varepsilon \end{aligned}$$

We use our firm year sample for this test and examine probability for each firm i and year t pair. Using a firm year sample allows us to differentiate between U.S.-incorporated and non-U.S.-incorporated firm years for firms that change their country of incorporation during the period covered by our sample. In addition to the previously discussed variables we also control for year to capture any time trends in incorporation decisions.²

Hypothesis 1 predicts that β_1 , β_2 , β_3 , and β_4 are positively related, and β_5 is negatively related, to incorporation outside the U.S. It predicts that the positive correlation between Non-U.S. Incorporation and each of profitability outside the U.S., size, relative intensity of U.S. operations, and earnings-stripping opportunity; and the negative correlation between Non-U.S. Incorporation and intellectual property value, will be weakest for Canadian firms, strongest for tax haven firms, and in the middle for firms incorporated elsewhere, for example in Israel or the UK.

Because our logit regression testing of Hypothesis 1 seeks to predict an incorporation decision for individual firms, rather than results for firm years, we do not separate our data based on Profit Firm Years and Loss Firm Years for this test.

3.2.2. Hypothesis 2.

We test H2 with an ordinary least squares (OLS) regression. The model follows:

$$\text{ETR outcome}_{it} = \beta_0 + \beta_1 (\text{Non-U.S. Incorporation})_{it} + \beta_2 (\text{Controls})_{it} + \varepsilon$$

We use three different tax outcomes as the dependent variable. We first test whether non-U.S. incorporation results in contemporaneous tax savings by using total Book ETR and Cash ETR at

² Industry controls are not included because using such controls causes a loss of firms from our sample where the 2 digit SIC code lacks any treatment firms. Excluding industry controls does not materially change the magnitude or significance of the results.

time t . We then examine whether tax savings manifest over time with the Three-Year Long-Run Cash ETR from $t+1$ to $t+3$.

We test hypothesis 2 separately for Canada Firms, Other Foreign Firms, and Tax Haven Firms. We compare the results for each group of firms to the results for United States Firms.

We control for other variables previously found to influence effective tax rates (e.g. Dyreng & Lindsey (2009)): Pre-Tax Return on Sales, Log of Sales, Percentage of Non-U.S. Sales, NOL Present, Leverage, R&D Expense, Advertising Expense, Industry (2-digit SIC code) and Year.

Hypothesis 2A predicts that β_1 is negative and significant for all ETR measures for Profit Firm Years.

Hypothesis 2B predicts that β_1 is positive and significant for the available ETR measure for Loss Firm Years, which is Book ETR. Such a result would reflect worse tax results for loss firms incorporated outside the United States.³

3.2.3. Hypothesis 3.

We test hypothesis 3, about the after-tax profitability of non-U.S.-incorporated firms, by comparing the after-tax return on sales for these groups to the after-tax return on sales for U.S.-incorporated multinationals.

$$\text{After-Tax Return on Sales}_{it} = \beta_0 + \beta_1 (\text{Non-U.S. Incorporation})_{it} + \beta_2(\text{Controls})_{it} + \varepsilon$$

We apply this testing separately for each of the three subgroups of non-U.S.-incorporated firms in our sample: Canada Firms, Other Foreign Firms, and Tax Haven Firms.

In our testing of hypothesis 3, we control for: Log of Sales, Percentage of Non-U.S. Sales, Leverage, R&D Expense, Advertising Expense, Industry and Year.

Hypotheses 3A and 3B predict that non-U.S.-incorporated firms will show greater after-tax profit (for Profit Firm Years) and greater after-taxes loss (for Loss Firm Years).

3.3. Sample Construction

3.3.1. Sample.

Table 2 documents our sample construction. We begin by identifying all publicly traded firms in the COMPUSTAT fundamentals annual database with fiscal years beginning on or after January 1, 1999 and ending on or before December 31, 2013. We begin the sample in 1999 because we require firms to have geographic segment data available. This results in the identification of

³ We restrict the analysis to book ETR for Loss Firm Years due to the small number of loss firms that report non-zero amount of cash taxes paid.

170,102 firm years and 22,857 unique firms. We next impose screens that exclude, inter alia, small firms, investment funds, and firms missing information needed to construct the other variables.

More importantly, we require that a firm exhibit evidence of multinational activity, as the ability to tax plan between jurisdictions is an assumption underlying our hypotheses. We code a firm as multinational if it fulfills at least one of two criteria: i) nonzero foreign income tax or pre-tax foreign income (e.g. Dyreng and Lindsey 2009), or ii) a non-U.S. geographic segment reported in the COMPUSTAT geographic segment reporting database. We also require firms in our sample to have non-U.S. sales segment data in order to populate the Percentage of Non-U.S. Sales and Pre-Tax Return on Non-U.S. Sales variables.

We further restrict this multinational sample to include only firms with a U.S. headquarters, as we are interested in the different incorporation decisions made by firms with U.S. headquarters or de facto centers of operations and/or sales in the United States. We code a firm as U.S.-headquartered if it lists a U.S. headquarters location (LOC=USA) in COMPUSTAT or if it discloses more than 50% United States, North America or Americas sales, property plant and equipment, or employees in more than 50% of available firm years, each as reported by the COMPUSTAT geographic segment database. Our approach to segment disclosure is discussed in more detail below.

After these screens, as shown in Table 2, panel A, our total sample consists of 32,581 firm years and 4,435 unique multinational firms. As shown in Table 2, panel B, in this multinational sample there are 2,149 firm years and 260 unique firms incorporated outside of the U.S.

3.3.2. *Segment coding.*

Most of the variables we use in this study are drawn directly from the COMPUSTAT fundamentals annual database. Some, however, require an intermediate step that uses information in the COMPUSTAT geographic segment disclosure database. As discussed above, we code a firm as U.S.-headquartered not only if it has item LOC = USA in COMPUSTAT but also if it has more than 50% sales, property plant and equipment, or employees disclosed as non-U.S. in its geographic segment disclosure. Also, we use segment disclosure information to create the Percentage of Non-U.S. Sales variable. Because of the dominant size of the United States economy in North America and in the Americas, we code a segment as U.S. if the segment name starts with the label “United States,” “North America” or “Americas,” unless the segment name also lists a geographic area not within North or South America.

We acknowledge that this may be an incomplete measure of multinational activity. Firms must disclose geographic segment information unless “impracticable” under Financial Accounting Standard 131. FASB (2008) Most firms with other evidence of multinational activity – such as pre-tax foreign income or foreign tax – disclose geographic segment information. However, a subset of firms may find it impracticable to report geographic segments even though these firms might otherwise fit the definition of a U.S.-headquartered, non-U.S.-incorporated firm. Examples include ocean shipping and satellite firms, which may not divide their international

operations according to jurisdiction; and insurance firms that incorporate outside the United States but insure primarily U.S. risks.

3.3.3. *Other caveats.*

The sample does not include U.S.-headquartered firms that are not traded in the United States. There is some concern that onerous SEC or other regulation might cause U.S.-headquartered firms to avoid the U.S. public equities market in favor of a non-U.S. public equities market. (e.g. Litvak (2007)) However, we are not aware of a general move away from U.S. trading for U.S.-headquartered firms despite specific examples such as the public offering decisions made by certain online gambling firms prior to U.S. state regulation of such firms. (Hurt (2003)) Even if the sample fails to include some U.S.-headquartered firms not traded in the U.S., we do not think it would disproportionately exclude firms less likely to engage in tax planning. Our analysis of different incorporation location decisions within the group of multinational U.S.-headquartered firms that are traded in the U.S. should provide valid tests of the hypotheses we aim to investigate.

Our assumption that the default jurisdiction of incorporation is the headquarters or center of operations of a firm in part motivates our restriction of our sample to U.S.-headquartered firms. This assumption supports the use of U.S.-incorporated firms as our control group and non-U.S.-incorporated firms as our treatment group. The assumption is consistent with a body of related corporate governance literature that finds a largely binary incorporation location choice between the home state and Delaware for U.S. firms. (Bebchuck and Cohen, 2003). There is as yet no global substitute for the Delaware alternative (Broughman, Fried and Ibrahim, 2014). Although the separation of jurisdiction of incorporation and center of operations is routinely observed for firms operating in some jurisdictions, notably China, we do not know of any evidence suggesting that a large proportion of U.S.-headquartered firms incorporate outside the United States. (Allen and Morse (2013))

4. Results

4.1. Descriptive Statistics

Table 3 shows the incorporation location of 4,435 unique firms by country. Only 5.9% of our sample of U.S.-headquartered, multinational, publicly-traded firms incorporate outside the U.S. This is about twice the percentage of U.S.-headquartered multinationals identified as non-U.S.-incorporated in an earlier study of IPO data. (Allen and Morse (2013)) Canada is by far the most popular jurisdiction for U.S.-headquartered firms incorporated outside the United States. Canadian-incorporated firms make up about 38% of the total number of such firms.

In untabulated results we find that the percentage of all U.S.-headquartered firms incorporated outside the U.S. has increased from 1999 to 2013. However, as shown in Figure 1 Panel A, the percentage of U.S.-headquartered firms with multinational activity has also increased over the same time period. After removing non-multinational firms there is no statistically significant trend in the percentage of U.S.-headquartered multinationals publicly traded in the United States that incorporate outside the U.S. However, as shown in Figure 1 Panel B, there is variation in

the location choices made by firms that incorporate outside the U.S. The percentage of such firms incorporated in Canada has declined; and the percentage of such firms incorporated in tax havens and in other jurisdictions has increased.

Table 4 breaks down our sample by 2-digit SIC code.⁴ The sample has relatively high numbers and proportions of non-U.S.-incorporated, U.S.-headquartered firms in the oil and gas sector (11 out of 100, or 11%, in SIC code 11) and chemical sector, including pharmaceuticals (28 out of 362, or about 8%, in SIC code 28). The electronic equipment and business services (including software) sectors also show relatively high numbers of incorporated-abroad observations, but these figures do not translate to unusually large percentages of incorporated-abroad observations due to large denominators in these sectors.

Figure 1, Panel C shows the frequency of firm years with a pre-tax loss for United States Firms, Canada Firms, Other Foreign Firms and Tax Haven Firms. For all but two years, Tax Haven Firms have the lowest percentage of Firm Loss Years; with an average of 22.9% for the sample period. This is the lowest average proportion of Firm Loss Years among all four geographic firm groups and the only average proportion that shows a statistically significant difference from the average proportion of Firm Loss Years for United States Firms (32.6%)

Table 5 shows summary statistics for our full and control samples versus our treatment sample of non-U.S.-incorporated firms. Panel A shows these univariate statistics for Profit Firm Years. Panel B shows them for Loss Firm Years.

Profit Firm Years. Canada Firms and United States Firms in Profit Firm Years are relatively similar. Profitable Canada Firms are smaller than United States Firms, and show a lower Book ETR. Along other measures, including pre-tax and after-tax profitability, the two groups of firms show similar results.

The differences are more striking when profitable United States Firms are compared to Other Foreign Firms and to Tax Haven Firms. We find initial support for the hypothesis that non-U.S.-incorporated firms in the Other Foreign and Tax Haven groups are larger and have a higher percentage of non-U.S. operations compared to U.S.-incorporated firms. Log of Sales, which proxies for size, has a mean value of 7.23 for Tax Haven Firms, 7.15 for Other Foreign Firms, and 6.67 for United States Firms. Percentage of Non-U.S. Sales has a mean value of 43% for Tax Haven Firms, 42% for Other Foreign Firms, and 36% for U.S.-incorporated firms. Each of these size and percentage of non-U.S. operations correlations has significance. On a univariate basis, Tax Haven and Other Foreign Firms also show significantly higher profitability, on both a pre-tax and after-tax basis.

⁴ Deep-sea water transportation and insurance have been identified as two industries that had an unusually high representation of non-U.S.-incorporated, U.S.-headquartered firms among firms conducting initial public offerings. (Allen and Morse (2013)) Our sample here highlights different firms, perhaps because it is restricted to firms that report geographic segment information, which marine transportation and U.S.-focused insurance firms may not provide.

The univariate results for all three groups of Profit Firm Years suggest that non-U.S.-incorporated firms save on their taxes. There are lower ETR results for each of the three different groups of non-U.S.-incorporated firms, although Canada Firms show smaller differences. These univariate results suggest that Book ETR is 4% less for Canada Firms, 7% less for Other Foreign Firms, and 8% less for Tax Haven Firms. They indicate Cash ETRs of 2% less for Canada Firms, 10% less for Other Foreign Firms, and 7% less for Tax Haven Firms. Finally, they show Long-Term Cash ETRs are not significantly different for Canadian firms, 6% less for Other Foreign Firms, and 6% less for Tax Haven Firms.

Loss Firm Years. For Loss Firm Years, as Panel B of Table 5 shows, the most prominent univariate results arise from the comparison of Tax Haven Firms with United States Firms. Loss firms incorporated in tax havens are larger, as measured by the Log of Sales variable; and have a greater proportion of their sales outside the U.S., as measured by the Percentage of Non-U.S. Sales indicator. But there is no statistically significant difference among the firms' profitability on a univariate basis, here proxied by Pre-Tax Return on Sales and After-Tax Return on Sales. This is contrary to our expectations. We predicted that for Loss Firm Years of non-U.S. incorporated firms, we would observe greater losses than for U.S.-incorporated firms.

Table 6 provides the correlation matrix, and the results are consistent with the descriptive statistics. Incorporation in a Tax Haven or Other Foreign jurisdiction is significantly negatively correlated with the tax outcomes. Incorporation in a Tax Haven or Other Foreign jurisdiction is also positively correlated with log of sales and percentage of foreign revenue. Consistent with the similarity of Canada Firms and United States Firms suggested by the descriptive statistics, Canadian incorporation is only significantly correlated with R&D Expense and Advertising Expense.

4.2. Predicting Non-U.S. Incorporation

We test the impact of Pre-Tax Return on Sales, Log of Sales, Percentage of Non-U.S. Sales, Leverage and R&D Expense on the likelihood that a U.S.-headquartered firm will incorporate outside the United States. Our hypothesis 1 predicts that each of these variables correlates positively with the likelihood of non-U.S. incorporation, except that it predicts that the R&D variable correlates negatively. Hypothesis 1 also predicts that the correlations will be weakest for firms incorporated in Canada and strongest for firms incorporated in tax havens.

We test this hypothesis with a pooled sample that includes both profit and loss firms, and test it separately for each group of non-U.S.-incorporated firms: Canada Firms, Other Foreign Firms, and Tax Haven Firms. Table 7 shows our results. The results are generally consistent with the univariate descriptive statistics.

Our strongest results are correlations between non-U.S. incorporation and each of size, proxied by Log of Sales; and intensity of foreign operations, proxied by Percentage of Non-U.S. Sales. Larger size predicts non-U.S. incorporation among Other Foreign Firms and Tax Haven Firms. Larger size correlates with non-U.S. incorporation more strongly for Tax Haven Firms.

Intensity of foreign operations also predicts non-U.S. incorporation for both Tax Haven Firms and Other Foreign Firms; and predicts it more strongly for Tax Haven Firms. Profitability, proxied by Pre-Tax Return on Sales, predicts non-U.S. incorporation only for Other Foreign Firms.

The results for Canadian firms are systematically different than the results for non-Canadian firms. Size is negatively correlated with Canadian incorporation; intensity of foreign operations does not show a statistically significant correlation; and profitability is negatively correlated. These results suggest that Canada Firms are not like Other Foreign Firms and Tax Haven Firms, and may incorporate outside the U.S. for different reasons.

Other predictions in hypothesis 1 are not systematically borne out by our results. Specifically, higher Leverage and lower R&D Expense correlates with the likelihood of Non-U.S. Incorporation in Canada, but not in non-Canadian jurisdictions.

4.3. The Effect of Non-U.S. Incorporation on Effective Tax Rate Outcomes

Profit Firm Years. Table 8 shows the results of multivariate testing of the impact of Non-U.S. Incorporation on tax outcomes for Profit Firm Years. As predicted by hypothesis 2A, Non-U.S. Incorporation generally correlates with lower Book ETR, lower current Cash ETR, and lower Three-Year Long-Run Cash ETR. We observe lower ETR results for each of our three ETR measures for Other Foreign Firms and for Tax Haven Firms. We observe weaker correlations, and less statistical significance, for Canadian firms.

Our strongest ETR results are as follows. Book effective tax rates are 7% lower for Other Foreign Firms, and 7% lower for Tax Haven Firms. Cash effective tax rates are 10% lower for Other Foreign Firms, and 6% lower for Tax Haven Firms. Long-term cash effective tax rates are 6% lower for Other Foreign Firms, and 5% lower for Tax Haven Firms. Each of these results correspond to the data indicated in the univariate statistics described above.

Consistent with hypothesis 2, Canadian firms show weaker effective tax rate results compared to non-Canadian non-US firms. Canada Firms have book effective tax rates are 4% lower compared to United States Firms and cash effective tax rates that are 2% lower compared to U.S.-incorporated firms. Both of these effective tax rate differences are smaller when compared to the results for Other Foreign Firms and Tax Haven Firms. Canada Firms show no difference compared to United States Firms for long-run cash effective tax rates.

Hypothesis 2A predicted that profitable Tax Haven Firms would show greater ETR reductions than Other Foreign Firms, consistent with presumably greater tax planning incentives for Tax Haven Firms. Our results are contrary to this hypothesis. Other Foreign Firms (for example, in Israel or in the UK) show greater ETR reductions, especially for the Cash ETR outcome variable, compared to Tax Haven Firms. Perhaps Tax Haven Firms face some tax costs (for example withholding tax costs) that Other Foreign Firms escape (for example because of tax treaty networks).

While most of the control variable results are consistent with prior literature, we note that there is a notable negative correlation between Pre-Tax Return on Sales, on one hand; and both Book ETR and Cash ETR, on the other hand. This result is significant for all three groups of non-U.S.-incorporated firms. However, Pre-Tax Return on Sales did not show a significant correlation with Three-Year Long-Run Cash ETR for any of the three groups.

The negative correlation between our pre-tax income profitability measure and the Book ETR and Cash ETR outcome variables conflicts with positive correlations between pre-tax income variables, on one hand; and ETR outcomes, on the other hand, in other work. (e.g. Armstrong, Blouin and Larcker (2012), Dyreng and Lindsay (2009)) However, the negative correlation we observe between Pre-Tax Return on Sales, on one hand, and Book ETR and Cash ETR, on the other hand, is consistent with Rego (2003), where the author suggests that higher pre-tax income relative to sales results in a greater incentive for a firm to tax plan.

Loss Firm Years. Table 9 shows the results of multivariate testing of the impact of Non-U.S. Incorporation on tax outcomes for Loss Firm Years. In these results, when incorporation location correlates with firms' realization of lower tax benefits, the result shows as a positive change, or increase in ETR. When incorporation location correlates with firms' realization of higher tax benefits, the result shows as a negative change, or decrease, in ETR. We only measure the dependent variable of Book ETR in this test, since cash effective tax rates for most Loss Firm Years are unpopulated or zero.

Our strongest ETR result for Loss Firm Years is that tax haven incorporation correlates with a 0.04 coefficient for Book ETR. This indicates that when a Tax Haven Firm has a Loss Firm Year, it can expect its ETR to be greater – or less negative – by 4%, relative to a comparable U.S. incorporated firm. Hypothesis 2B predicted this result of worse tax results for loss firms incorporated in tax havens.

Contrary to hypothesis 2B, we do not observe worse tax results in the loss firm group for Canada Firms or Other Foreign Firms. Canada Firms with Loss Firm Years have lower ETRs – i.e., realize more tax benefits – compared to United States Firms. Other Foreign Firms show no statistically significant difference.

We based hypothesis 2B on the reasoning that transfer pricing, intercompany leverage and other strategies might not be easily amended to reallocate operating results for tax purposes if those results turn out to be losses rather than profits. Perhaps such transfer pricing, intercompany leverage and other strategies are particularly sticky, or difficult to amend, for Tax Haven Firms. In other words, perhaps a Tax Haven Firm must allocate loss, as well as profit, to a tax haven jurisdiction, thus losing the value of deductions. This could be because transfer pricing and other strategies cannot be easily modified if a Tax Haven Firm shows losses instead of profits.

4.4. After-Tax Profitability of Non-U.S.-Incorporated Firms

Finally, our analysis of hypothesis 3 considers whether firms incorporated abroad have higher after-tax profits compared to firms incorporated in the United States. We predicted in hypothesis

3A that if a corporation is profitable, incorporating abroad correlates with greater after-tax profits. In other words, we predicted that for Profit Firm Years, the tax benefits from incorporating abroad are not fully offset by tax planning and related costs. Conversely, we predicted in hypothesis 3B that for Loss Firm Years, a non-U.S. incorporation strategy correlates with greater after-tax losses as the stickiness of the transfer pricing strategies result in lower tax benefits

As Table 10 shows there is variation among the three groups of firms: Canada Firms, Other Foreign Firms, and Tax Haven Firms. The Canada Firm and Tax Haven Firm groups provide the strongest support for hypotheses 3A and 3B. When such firms have Profit Firm Years, they are more profitable on an after-tax basis than United States Firms. When Canada Firms or Tax Haven Firms have Loss Firm Years, they have greater after-tax losses than United States firms. These results suggest, especially in the case of Tax Haven Firms, that lower taxes translate to higher after-tax income for profitable firms. They also suggest that worse tax results translate to lower after-tax income for loss firms.

The Other Foreign Firms show perhaps the most intriguing result. They are more profitable than U.S.-incorporated firms (for profit firms) and less loss-making (for loss firms). In other words, Other Foreign Firms, like those incorporated in the UK and Israel, appear to be better off after-tax whether they have profits or losses. Perhaps these Other Foreign Firms have capacity to both shift taxable income to lower-tax jurisdictions and shift deductions to higher-tax jurisdictions, in each case more effectively than United States Firms.

4.5. Further Goals for This Study

This study aims to understand the predictors of non-U.S. incorporation for U.S.-headquartered firms and the effective tax rate effect of non-U.S. incorporation. We find that non-U.S. incorporated firms look different than U.S.-incorporated firms. Tax Haven Firms and Other Foreign Firms in particular are larger and have greater intensity of foreign operations.

The results also reveal that profitable non-U.S.-incorporated firms have lower tax rates than U.S.-incorporated firms. Unsurprisingly, Canada Firms show the most modest tax savings. Surprisingly, Other Foreign Firms – which are incorporated outside the U.S. but neither in Canada nor in tax havens – show the greatest tax savings. We initially expected Tax Haven Firms to show the largest tax savings results. The tax savings correlated with non-U.S. incorporation raises the question of why more U.S.-headquartered firms do not incorporate outside the United States.

Perhaps tax planning costs and non-tax costs or frictions such as adverse regulatory, governance, or reputation results offset tax savings offered by non-U.S. incorporation. (e.g. Kane and Rock (2008)) Yet we have preliminary evidence that suggests that such costs do not always overwhelm tax savings. Profitable firms in each of the non-U.S.-incorporated subgroups – Canada Firms, Other Foreign Firms and Tax Haven Firms – show greater after-tax profits relative to their U.S. counterparts.

Another possibility is that non-U.S. incorporation is beneficial for only some firms. We find preliminary evidence that supports this possibility. Specifically, we find that when Tax Haven Firms have Loss Firm Years, they obtain less tax benefit from their losses compared to United States Firms. Also, Tax Haven Firms and Canada Firms have greater after-tax losses relative to their U.S. counterparts. The experience of these non-U.S.-incorporated loss firms raises the possibility that firms that incorporate outside the U.S. will fare better if the firms are profitable, but worse if the firms produce losses. Perhaps this is because some non-U.S. incorporated firms, for example those in tax havens, must allocate losses as well as profits to low-tax jurisdictions. Their transfer pricing and other tax planning strategies, in other words, may be sticky.

We plan to pursue this inquiry further by examining additional after-tax outcome variables, as well as different predictive variables such as the tax savings of individual firms, in further versions of this study. We expect to find, for example, that non-U.S.-incorporated loss firms with smaller losses have a greater effective tax rate disadvantage. This is because firms with larger losses are more likely to record full valuation allowances regardless of the jurisdiction where their parent corporation is incorporated. (Allen (2015)) This tends to eliminate any difference in tax benefit that correlates with the incorporation location of a parent firm.

We will also further consider the possibility that the costs that offset the tax savings benefits of incorporating outside the U.S. arise not in the same period as the tax savings, but perhaps in an earlier period. In an earlier period, a firm may be more resource constrained. (Morse (2013)) It may also face some adverse legal results from non-U.S. incorporation at an earlier startup stage, for example under the passive foreign investment company or “PFIC” rules, even if these results would generally not apply to a more mature multinational firm. If non-U.S. incorporation benefits only some types of firms, and a firm must make a decision about where to incorporate relatively early, then the firm may only have reason to choose non-U.S. incorporation if it is fairly certain that it will eventually mature into the type of firm that will benefit from that choice.

In this version of this study, we separately analyze Canada Firms, Other Firms, and Tax Haven Firms. We might also compare the behavior of non-U.S.-incorporated firms depending on the location of non-U.S. incorporation more generally. We could relate the ETR reduction produced by non-U.S. incorporation to the tax system of the non-U.S. country where the parent is incorporated. Assigning a value for continuous variables such as statutory or effective tax rate to each firm year; and/or coding each firm year for the presence or absence of a CFC regime (Voget (2011)) or worldwide versus territorial system (Markle (2014)) would allow us to test the impact of such differences in non-U.S. tax systems on the outcomes we measure.

We also plan to add an analysis that considers the mechanism for tax reduction for non-U.S.-incorporated firms. Some firms may obtain tax savings by reducing tax on non-U.S. income, for example. (Dyreg and Lindsay (2009)) Some firms also may use a different approach, such as the reduction of tax on U.S. income.

5. Conclusion

Our study compares a control group of U.S.-headquartered multinational firms incorporated in the U.S. to a treatment group of such firms incorporated outside the U.S. Our contribution

includes the research design innovation of coding the headquarters location for multinational firms in order to identify U.S.-headquartered firms with parents incorporated outside the U.S. We also perform a separate analysis for each different non-U.S. incorporation locations, since some non-U.S. incorporation locations, such as Canada, should be less correlated with tax planning goals than others. Finally, we consider profit and loss firms separately for most of our tests.

Firms incorporated outside the U.S. make up about 5.9% of our sample of 4435 unique firms. Our results show that firms that have a larger size and/or a greater proportion of sales outside the U.S. are more likely to incorporate outside the U.S., particularly when they incorporate in countries other than Canada. Among U.S.-headquartered firms, non-U.S.-incorporated firms have lower current cash and book effective tax rates than U.S.-incorporated firms. For example, non-U.S. incorporation correlates with a 2% reduction in current cash effective tax rate for profitable Canadian firms, a 10% reduction in current cash effective tax rate for profitable non-U.S. firms incorporated in a country other than Canada or a tax haven, and a 6% reduction in current cash effective tax rate for profitable non-U.S. firms incorporated in a tax haven.

If the tax savings are so significant, then why don't more U.S.-headquartered firms incorporate outside the U.S.? We show preliminary evidence that non-U.S. incorporation is beneficial only for some firms. For example, loss firms incorporated in Canada or in a tax haven have greater after-tax losses than do similar U.S.-incorporated firms. We look forward to exploring this question further in future versions of this study.

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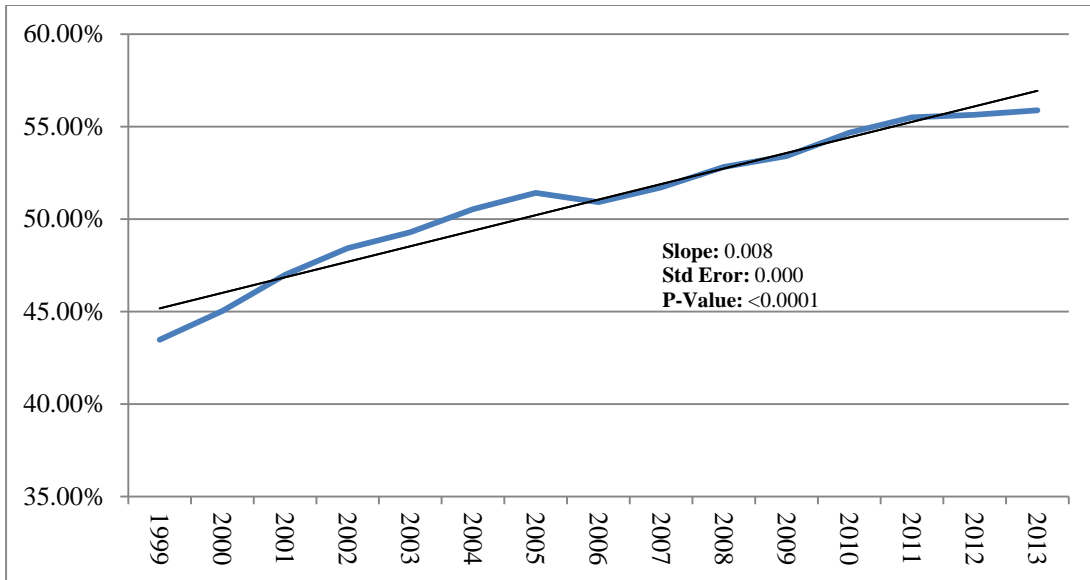
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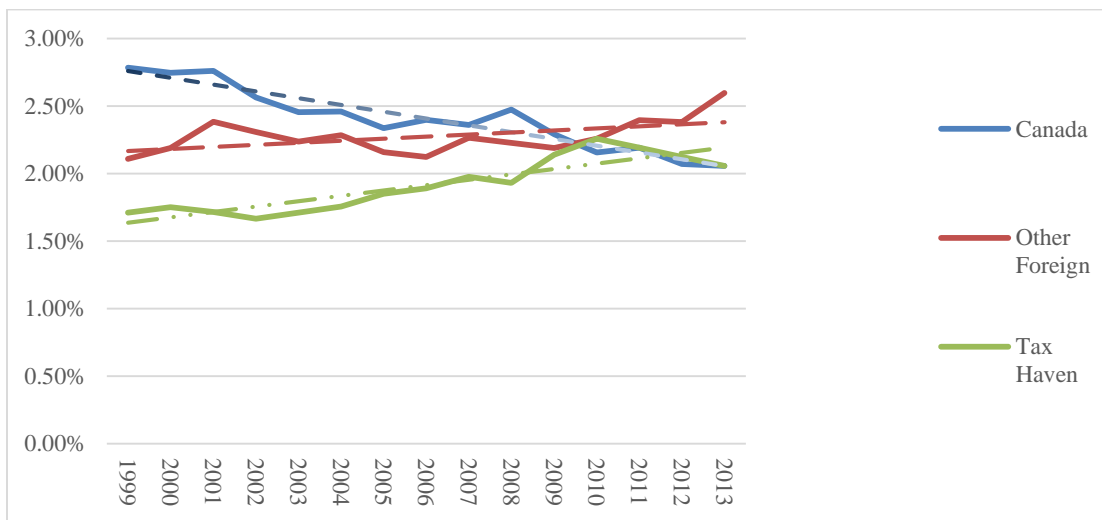
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Figure 1: Incorporation Location Trends Over Time for U.S.-Headquartered Multinational Firms

Panel A: Percent of U.S. Headquartered Firms with Multinational Activity

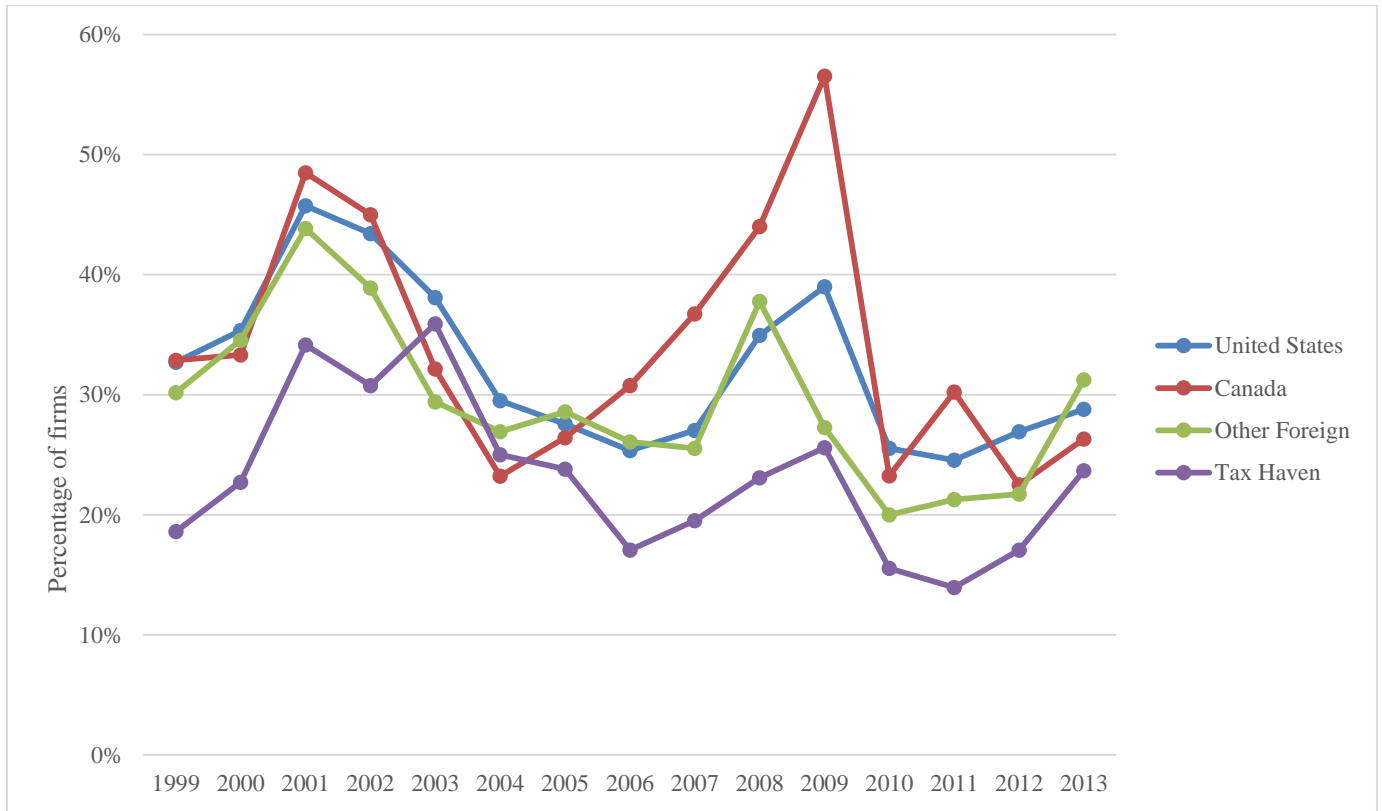


Panel B: Percent of U.S.-Headquartered Multinationals Incorporated Outside the United States, by Incorporation Location



| Location | Slope | Std Error | P-Value |
|---------------|--------|-----------|---------|
| Canada | -0.005 | 0.000 | 0.011 |
| Other Foreign | 0.000 | 0.000 | 0.452 |
| Tax Haven | 0.0003 | 0.000 | 0.024 |

Panel C: Percent of Loss Firm Years



| Incorporation location | Percentage of total firm years with pre-tax Income ≤ 0 |
|-------------------------------|---|
| United States | 32.6% |
| Canada | 34.6% |
| Other Foreign | 29.9% |
| Tax Haven | 22.9% |

Only tax haven firms have a significantly lower frequency of pre-tax losses (as compared to U.S. firms) at the 5% level.

Table 1: Variables

| Variable Name | Proxies For | Calculated As |
|---|---|---|
| Advertising Expense | Value of trademark/brand | Advertising expense/total sales = XAD/SALE. If XAD is missing, then XAD = 0 |
| After-Tax Return on Sales | After-tax profitability | Net income (NI)/Total Sales (SALE) |
| Book ETR | Tax planning efficiency | If pre-tax income (PI) > 0 = total tax expense / pre-tax income = TXT/PI. Results < 0 set equal to zero. Results > 1 set equal to 1. For firms with PI ≤ 0 Book ETR is multiplied by -1. |
| Cash ETR | Tax planning efficiency | If pre-tax income (PI) > 0 = taxes paid/pre-tax income = TXPD/PI. Results < 0 set = 0. Results > 1 set = 1. |
| Industry | Line of business | 2-digit SIC code as reported in COMPUSTAT |
| Leverage | Opportunity for inter-affiliate earnings stripping | Total liabilities (DLTT)/Total Assets (AT) |
| Log of Sales | Firm size | Log of total sales = log SALE |
| NOL Present | Tax losses shelter income | Indicator variable equal to 1 if TLCF > 0, 0 otherwise. |
| Non-U.S. Headquarters | Center of operations in U.S.; default U.S. incorporation location | LOC ≠ USA or one or more of US sales (SALES), ppe (PPENTS) or employment (EMPS) segments > 50% total in > 50% of years the firm appears in the sample. |
| Non-U.S. Incorporation | Incorporation of corporate group parent outside U.S. | COMPUSTAT item FIC ≠ USA. Re-code as USA firm years where a treatment group firm reports earlier U.S. incorporation location in SEC EDGAR securities filings. |
| Non-U.S. Segment Sales | Magnitude of foreign operations | Total geographic Sales (SALES) listed in COMPUSTAT segment reporting other than sales listed under segment names starting with “United States,” “North America” or “Americas”, where such segment names do not list a geographic segment not within North or South America. |
| Percentage of Non-U.S. Sales | Relative intensity of non-U.S. operations | Non-US Segment Sales / total sales = Non-U.S. Segment Sales / SALE |
| Pre-Tax Return on Sale | Pre-tax profitability | Pre-tax income / Total Sales = PI / SALE |
| R&D Expense | Value of patent/other intellectual property | R&D expense / total sales = XRD/SALE If XRD is missing, then XRD = 0 |
| Three-Year Long-Run Cash ETR _t | Tax planning efficiency | (Sum of taxes paid from t+1 to t+3)/(sum of pre-tax income from t+1 to t+3) = $\frac{\sum_{t=1}^3 \text{TXPD}_t}{\sum_{t=1}^3 \text{PI}_t}$. If the denominator is less than zero, the observation is eliminated. Results < 0 set = 0. Results > 1 set = 1. |

Abbreviations refer to data field names in COMPUSTAT. Except as otherwise noted all continuous variables are winsorized at the 1% and 99% levels and all variables are measured at time t.

Table 2: Sample Construction**Panel A: Total Sample of U.S.-Headquartered Multinational Firms**

| | Firm years | Unique firms |
|--|-------------------|---------------------|
| COMPUSTAT firms publicly traded in U.S. with fiscal year start on/after 1/1/99 and end on/before 12/31/13 | 170,102 | 22,857 |
| Less firms with total assets under \$10 million | (47,136) | (5,690) |
| Less firms missing total sales (SALE), sales < \$10 million | (14,331) | (2,313) |
| Less firms with missing total liabilities | (266) | (13) |
| Less fund firms with SIC 6000-6199, 6722, 6726, 6798, 6799 | (16,464) | (2,107) |
| Less firms with no multinational activity, i.e. neither absolute value of TXFO or PIFO > 1 nor non-U.S. segment at least 1 yr | (42,100) | (5,806) |
| Less firms with missing non-U.S. sales in segment disclosure | (6,695) | (1,041) |
| Less firms not U.S.-headquartered (i.e. coded LOC ≠ USA and none of US sales, ppe or employment > 50% total in > 50% of years) | (10,529) | (1,452) |
| | | |
| <i>Total sample</i> | <i>32,581</i> | <i>4,435</i> |

Panel B: Treatment Sample of Non-U.S. Incorporated U.S.-Headquartered Multinational Firms

| | Firm years | Unique firms |
|---|-------------------|---------------------|
| COMPUSTAT firms publicly traded in U.S. with fiscal year start on/after 1/1/98 and end on/before 12/31/13 and FIC ≠ USA and LOC = USA | 2,006 | 312 |
| Firms with fiscal year start on/after 1/1/98 and end on/before 12/31/13 and FIC ≠ USA and at least one of US sales, ppe or employment > 50% total in > 50% of years | 2,072 | 227 |
| Less firms with total assets under \$10 million | (817) | (108) |
| Less firms missing total sales (SALE), sales < \$10 million | (467) | (68) |
| Less firms with missing total liabilities | (1) | - |
| Less fund firms with SIC 6000-6199, 6722, 6726, 6798, 6799 | (39) | (5) |
| Less firms with no multinational activity, i.e. neither absolute value of TXFO or PIFO > 1 nor non-U.S. segment at least 1 yr | (466) | (73) |
| Less firms with missing non-U.S. sales in segment disclosure | (139) | (25) |
| | | |
| <i>Total Non-U.S. Incorporated Sample</i> | <i>2,149</i> | <i>260</i> |

Table 3: Incorporation Location by Country

| Country of Incorporation | Total Firms | Percentage of sample |
|---------------------------------|--------------------|-----------------------------|
| Australia | 5 | 0.11% |
| Belgium | 2 | 0.05% |
| Bermuda | 22 | 0.50% |
| Brazil | 1 | 0.02% |
| British Virgin Islands | 8 | 0.18% |
| Canada | 98 | 2.21% |
| Cayman Islands | 11 | 0.25% |
| Curacao | 2 | 0.05% |
| Germany | 3 | 0.07% |
| India | 3 | 0.07% |
| Ireland | 13 | 0.29% |
| Israel | 32 | 0.72% |
| Italy | 2 | 0.05% |
| Japan | 1 | 0.02% |
| Jersey | 3 | 0.07% |
| Liberia | 1 | 0.02% |
| Luxembourg | 2 | 0.05% |
| Mexico | 2 | 0.05% |
| Netherlands | 13 | 0.29% |
| Netherlands Antilles | 1 | 0.02% |
| Panama | 4 | 0.09% |
| Puerto Rico | 1 | 0.02% |
| Singapore | 3 | 0.07% |
| Spain | 1 | 0.02% |
| Switzerland | 4 | 0.09% |
| Taiwan | 1 | 0.02% |
| United Kingdom | 21 | 0.47% |
| United States of America | 4,175 | 94.13% |
| Total | 4,435 | |

Table 4: Sample Composition by 2-Digit SIC code

| 2-Digit SIC | Total | Number Incorporated Abroad | % Incorporated Abroad | Industry Name |
|-------------|-------|----------------------------|-----------------------|--|
| 73 | 895 | 57 | 6.37% | Business Services |
| 28 | 362 | 28 | 7.73% | Chemical & Allied Products |
| 36 | 498 | 27 | 5.42% | Electronic & Other Electric Equipment |
| 38 | 371 | 14 | 3.77% | Instruments & Related Products |
| 35 | 370 | 13 | 3.51% | Industrial Machinery & Equipment |
| 13 | 100 | 11 | 11.00% | Oil & Gas Extraction |
| 37 | 115 | 9 | 7.83% | Transportation Equipment |
| 39 | 67 | 7 | 10.45% | Miscellaneous Manufacturing Industries |
| 20 | 92 | 6 | 6.52% | Food & Kindred Products |
| 87 | 91 | 5 | 5.49% | Engineering & Management Services |
| 63 | 33 | 5 | 15.15% | Insurance Carriers |
| 23 | 48 | 5 | 10.42% | Apparel & Other Textile Products |
| 10 | 15 | 4 | 26.67% | Metal, Mining |
| 33 | 75 | 4 | 5.33% | Primary Metal Industries |
| 59 | 64 | 4 | 6.25% | Miscellaneous Retail |
| 65 | 20 | 4 | 20.00% | Real Estate |
| 26 | 51 | 4 | 7.84% | Paper & Allied Products |
| 80 | 30 | 4 | 13.33% | Health Services |
| 27 | 50 | 4 | 8.00% | Printing & Publishing |
| 50 | 103 | 4 | 3.88% | Wholesale Trade - Durable Goods |
| 51 | 56 | 4 | 7.14% | Wholesale Trade - Nondurable Goods |
| 48 | 112 | 3 | 2.68% | Communications |
| 16 | 21 | 3 | 14.29% | Heavy Construction, Except Building |
| 32 | 27 | 3 | 11.11% | Stone, Clay, & Glass Products |
| 49 | 70 | 3 | 4.29% | Electric, Gas, & Sanitary Services |
| 62 | 69 | 3 | 4.35% | Security & Commodity Brokers |
| 25 | 22 | 2 | 9.09% | Furniture & Fixtures |
| 34 | 75 | 2 | 2.67% | Fabricated Metal Products |
| 44 | 15 | 2 | 13.33% | Water Transportation |
| 47 | 22 | 2 | 9.09% | Transportation Services |
| 54 | 12 | 2 | 16.67% | Food Stores |
| 24 | 11 | 2 | 18.18% | Lumber & Wood Products |
| Other | 474 | 10 | 2.11% | Various* |
| Total | 4435 | 260 | 5.86% | |

* The following 2-digit codes also include one non-U.S.- incorporated firm: 15 (General Building Contractors), 17 (Special Trade Contractors), 29 (Petroleum and Coal Products), 30 (Rubber and Miscellaneous Plastics Products), 41 (Local and Interurban Passenger Transit), 42 (Trucking and Warehousing), 64 (insurance Agents, Brokers & Service), 76 (Miscellaneous Repair Services), 78 (Motion Pictures), and 79 (Amusement & Recreation Services).

Table 5: Descriptive Statistics, Partitioned on Incorporation Location

Panel A: Profit Firm Years

| Variable | U.S. | Canada | Other Foreign | | | Tax Haven | | | |
|---|-----------------|-----------------|---------------|-----------------|---------|-----------|-----------------|-------|-----|
| | (1) | (2) | (2)-(1) | (3) | (3)-(1) | (4) | (4)-(1) | | |
| Pre-Tax Return on Sales | 0.11 (0.103) | 0.11 (0.117) | 0.00 | 0.13 (0.108) | 0.01 | ** | 0.14 (0.124) | 0.03 | *** |
| After-Tax Return on Sales | 0.08 (0.089) | 0.09 (0.103) | 0.01 | 0.10 (0.101) | 0.02 | *** | 0.11 (0.116) | 0.03 | *** |
| Log of Sales _t | 6.67 (1.843) | 6.45 (1.740) | -0.22 *** | 7.15 (2.25) | 0.47 | *** | 7.23 (1.78) | 0.56 | *** |
| Percentage of Non-U.S. Sales _t | 0.36 (0.253) | 0.36 (0.191) | 0.00 | 0.42 (0.163) | 0.06 | *** | 0.43 (0.234) | 0.07 | *** |
| ETR _t | 0.31 (0.182) | 0.27 (0.213) | -0.04 *** | 0.24 (0.187) | -0.07 | *** | 0.23 (0.208) | -0.08 | *** |
| CETR _t | 0.26 (0.232) | 0.25 (0.265) | -0.02 * | 0.16 (0.217) | -0.10 | *** | 0.19 (0.222) | -0.07 | *** |
| Three Year Long-Run Cash ETR | 0.30 (0.208) | 0.31 (0.261) | 0.01 | 0.24 (0.183) | -0.06 | *** | 0.24 (0.206) | -0.06 | *** |
| Leverage _t | 0.17 (0.188) | 0.20 (0.029) | 0.03 *** | 0.15 (0.143) | -0.02 | *** | 0.15 (0.157) | -0.02 | * |
| R&D _t | 0.05 (0.074) | 0.03 (0.004) | -0.02 *** | 0.06 (0.095) | 0.01 | | 0.03 (0.066) | -0.01 | *** |
| Advertising Expense _t | 0.01 (0.074) | 0.00 (0.497) | -0.01 *** | 0.01 (0.095) | 0.00 | | 0.01 (0.066) | 0.00 | |
| NOL present at time t | 0.45 (0.498) | 0.50 (0.500) | 0.05 ** | 0.39 (0.489) | -0.06 | ** | 0.46 (0.499) | 0.01 | |
| N | 20,499 | 517 | | 518 | | | 477 | | |

***, **, * - significant at the 1%, 5%, 10% level. Standard errors in parentheses.. See Table 1 for variable descriptions.

Table 5: Descriptive Statistics Partitioned on Incorporation Location (continued)

Panel B: Loss Firm Years

| Variable | United States | | (2)-(1) | Other Foreign | | Tax Haven | | (4)-(1) | | |
|---|------------------|------------------|-----------|------------------|-----------|------------------|----------|---------|--|--|
| | (1) | (2) | | (3) | (3)-(1) | (4) | (4)-(1) | | | |
| Pre-Tax Return on Sales | -0.33 (0.527) | -0.36 (0.581) | -0.03 | -0.34 (0.484) | -0.02 | -0.39 (0.625) | -0.07 | | | |
| After-Tax Return on Sales | -0.32 (0.531) | -0.36 (0.584) | -0.03 | -0.33 (0.490) | -0.01 | -0.39 (0.626) | -0.06 | | | |
| Log of Sales _t | 5.21 (1.77) | 5.41 (1.95) | 0.20 ** | 4.91 (2.05) | -0.29 ** | 6.17 (1.82) | 0.96 *** | | | |
| Percentage of Non-U.S. Sales _t | 0.37 (0.262) | 0.36 (0.206) | -0.01 | 0.38 (0.185) | 0.01 | 0.46 (0.245) | 0.09 *** | | | |
| ETR _t | -0.11 (0.208) | -0.14 (0.250) | -0.03 ** | -0.10 (0.215) | 0.01 | -0.09 (0.221) | 0.02 | | | |
| Leverage _t | 0.20 (0.261) | 0.23 (0.111) | 0.03 * | 0.15 (0.215) | -0.05 *** | 0.25 (0.299) | 0.05 ** | | | |
| R&D _t | 0.15 (0.223) | 0.11 (0.013) | -0.04 *** | 0.21 (0.257) | 0.06 *** | 0.15 (0.223) | 0.00 * | | | |
| Advertising Expense _t | 0.01 (0.060) | 0.01 (0.485) | 0.00 | 0.01 (0.067) | 0.00 | 0.01 (0.022) | -0.01 ** | | | |
| NOL present at time t | 0.54 (0.498) | 0.49 (0.501) | -0.06 ** | 0.53 (0.500) | -0.01 | 0.54 (0.498) | 0.00 | | | |
| N | 9,933 | 274 | | 221 | | 142 | | | | |

***, **, * - significant at the 1%, 5%, 10% level. Standard errors in parentheses. See Table 1 for variable descriptions.

Table 6: Correlation Matrix

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|------|------|
| (1) Incorporated in Canada | 1 | | | | | | | | | | | | | |
| (2) Incorporated in Other | -0.02 | 1 | | | | | | | | | | | | |
| (3) Incorporated in Tax Haven | -0.02 | -0.02 | 1 | | | | | | | | | | | |
| (4) Book ETR _t | -0.03 | -0.06 | -0.06 | 1 | | | | | | | | | | |
| (5) Cash ETR _t | -0.01 | -0.06 | -0.04 | 0.39 | 1 | | | | | | | | | |
| (6) Long-Run Cash ETR | 0.01 | -0.03 | -0.03 | 0.20 | 0.25 | 1 | | | | | | | | |
| (7) Pre-Tax Return on Sales _t | -0.01 | 0.01 | 0.02 | -0.11 | -0.20 | 0.03 | 1 | | | | | | | |
| (8) After-Tax Return on Sales _t | -0.01 | 0.01 | 0.02 | -0.28 | -0.22 | 0.02 | 0.97 | 1 | | | | | | |
| (9) Log of Sales _t | -0.01 | 0.02 | 0.06 | 0.06 | 0.05 | 0.01 | 0.32 | 0.31 | 1 | | | | | |
| (10) Percentage of Non-US Sales _t | -0.01 | 0.03 | 0.04 | -0.10 | 0.02 | 0.02 | 0.00 | -0.01 | 0.00 | 1 | | | | |
| (11) Leverage _t | 0.02 | -0.02 | 0.00 | 0.09 | 0.05 | 0.00 | -0.01 | -0.01 | 0.23 | -0.07 | 1 | | | |
| (12) R&D Expense _t | -0.02 | 0.02 | -0.02 | -0.13 | -0.09 | -0.08 | -0.58 | -0.57 | -0.37 | 0.13 | -0.17 | 1 | | |
| (13) Advertising Expense _t | -0.02 | 0.00 | 0.00 | 0.02 | 0.01 | 0.01 | -0.11 | -0.12 | 0.00 | -0.04 | 0.02 | -0.01 | 1 | |
| (14) NOL Present at Time t | 0.00 | -0.01 | 0.00 | -0.03 | -0.02 | -0.02 | -0.06 | -0.05 | 0.00 | 0.07 | 0.04 | 0.06 | 0.01 | 1 |

Bold indicates correlation is significant at the 5% level. See Table 1 for variable descriptions.

Table 7: Logit Regression of Whether a U.S.-Headquartered MNC Incorporates Outside the U.S., Partitioned on Incorporation Location

Dependent Variable: Incorporation location

| <i>Independent variable</i> | Canada | Other Foreign | Tax Haven |
|--|---------------------|----------------------|---------------------|
| Intercept | -3.18*** (0.181) | -4.73*** (0.199) | -5.61*** (0.227) |
| Pre-tax Return on Sales _t | -0.37*** (0.104) | 0.35*** (0.135) | -0.06 (0.155) |
| Log of Sales _t | -0.06*** (0.021) | 0.13*** (0.021) | 0.21*** (0.023) |
| Percentage of Foreign Sales _t | 0.10 (0.143) | 0.57*** (0.146) | 1.13*** (0.1559) |
| Leverage _t | 0.43*** (0.160) | -0.80*** (0.216) | -0.45** (0.221) |
| R&D _t | -2.08*** (0.385) | 1.63*** (0.282) | -0.49 (0.431) |
| Industry Controls | y | y | Y |
| Year Controls | y | y | Y |
| N | 31,223 | 31,171 | 31,051 |
| R squared | 0.01 | 0.01 | 0.03 |
| Odds ratios | | | |
| Intercept | 0.04 | 0.01 | 0.00 |
| Pre-tax Return on Sales _t | 0.69 | 1.41 | 0.95 |
| Log of Sales _t | 0.94 | 1.13 | 1.23 |
| Percentage of Foreign Sales _t | 1.10 | 1.77 | 3.10 |
| Leverage _t | 1.54 | 0.45 | 0.64 |
| R&D _t | 0.13 | 5.08 | 0.61 |

***, **, * - significant at the 1%, 5%, 10% level. Standard errors in parentheses. See Table 1 for variable descriptions.

Table 8: OLS Regression for Profit Firm Years of ETR Results, Partitioned on Incorporation Location

| <i>Independent Variable</i> | <i>Dependent Variable</i> | | | | | | | | |
|---|---------------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | ETR _t | CETR _t | Long-Run Cash ETR | ETR _t | CETR _t | Long-Run Cash ETR | ETR _t | CETR _t | Long-Run Cash ETR |
| Intercept | 0.26*** (0.024) | 0.24*** (0.030) | 0.27*** (0.038) | 0.26*** (0.024) | 0.24*** (0.030) | 0.27*** (0.037) | 0.26*** (0.024) | 0.24** (0.031) | 0.27*** (0.0379) |
| Canada | -0.04*** (0.008) | -0.02** (0.010) | 0.000 (0.012) | | | | | | |
| Other Foreign | | | | -0.07*** (0.008) | -0.10*** (0.010) | -0.06*** (0.015) | | | |
| Tax Haven | | | | | | | -0.07*** (0.008) | -0.06*** (0.01) | -0.05*** (0.01) |
| Pre-Tax Return on Sales _t | -0.15*** (0.013) | -0.51*** (0.017) | -0.00 (0.011) | -0.16*** (0.013) | -0.50*** (0.016) | -0.00 (0.011) | -0.16*** (0.013) | -0.50*** (0.016) | -0.00 (0.011) |
| Log of Sales _t | 0.01*** (0.001) | 0.01*** (0.001) | -0.00 (0.001) | 0.01*** (0.001) | 0.01*** (0.000) | -0.00 (0.001) | 0.01*** (0.001) | 0.01*** (0.001) | -0.00 (0.001) |
| Percentage of Non-U.S. Sales _t | -0.03*** (0.005) | 0.06*** (0.007) | 0.06*** (0.008) | -0.03*** (0.005) | 0.06*** (0.007) | 0.06*** (0.008) | -0.03*** (0.005) | 0.06*** (0.007) | 0.06*** (0.008) |
| Other Controls | y | y | y | Y | y | y | y | y | y |
| Industry controls | y | y | y | Y | y | y | y | y | y |
| Year Controls | y | y | y | Y | y | y | y | y | y |
| N | 21,016 | 21,016 | 13,785 | 21,017 | 21,017 | 13,671 | 20,976 | 20,976 | 13,706 |
| R squared | 0.07 | 0.08 | 0.05 | 0.07 | 0.09 | 0.05 | 0.07 | 0.08 | 0.05 |

***,**,*, - significant at the 1%, 5%, 10% level. Standard errors in parentheses. See Table 1 for variable descriptions.

Table 9: OLS Regression for Loss Firm Years of Book ETR, Partitioned on Incorporation Location

| <i>Independent Variable</i> | <i>Dependent Variable</i> | | |
|--|---------------------------|------------------------|------------------------|
| | ETR_t | ETR_t | ETR_t |
| Intercept | -0.00 (0.045) | -0.00 (0.045) | -0.01 (0.045) |
| Canada | -0.03* (0.012) | | |
| Other Foreign | | 0.00 (0.013) | |
| Tax Haven | | | 0.04** (0.017) |
| Pre-tax Return on Sales _t | -0.05*** (0.005) | -0.05*** (0.005) | -0.05*** (0.005) |
| Log of Sales _t | -0.02*** (0.001) | -0.02*** (0.001) | -0.02*** (0.001) |
| Percentage of Foreign Sales _t | 0.05*** (0.008) | 0.05*** (0.008) | 0.05*** (0.008) |
| Other Controls | y | y | Y |
| Industry controls | y | y | Y |
| Year Controls | y | y | Y |
| N | 10,197 | 10,144 | 10,065 |
| R squared | 0.12 | 0.12 | 0.11 |

***,**, * - significant at the 1%, 5%, 10% level.
Standard errors in parentheses.
See Table 1 for variable descriptions.

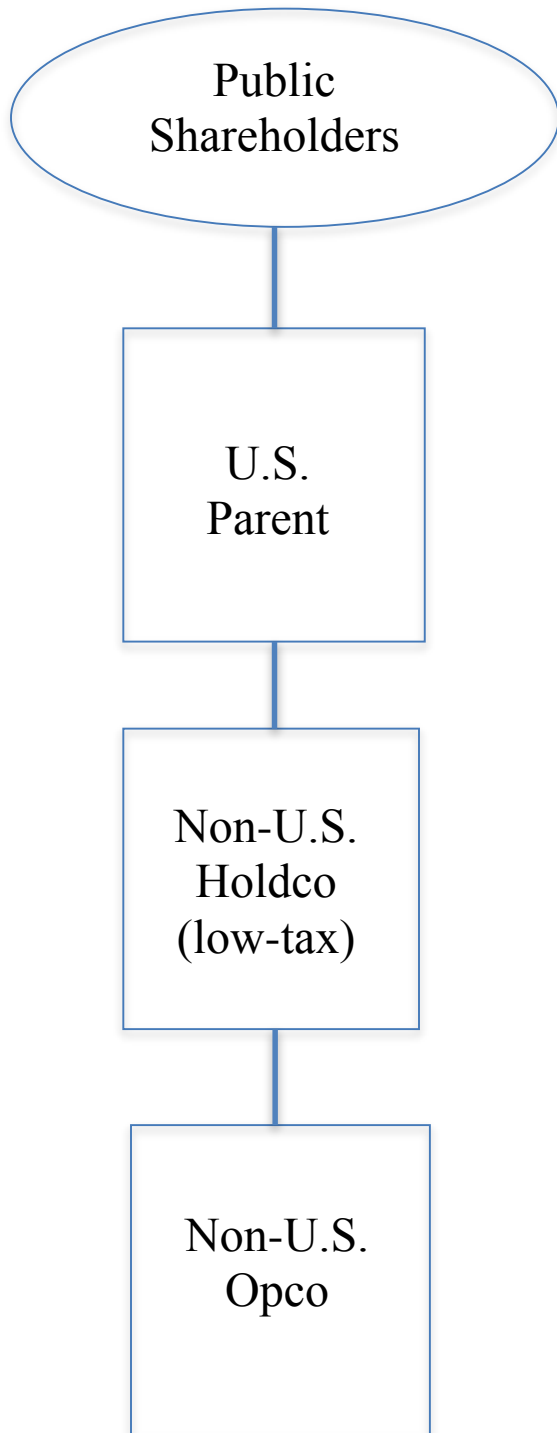
Table 10: OLS Regression of After-Tax Return on Sales on Firm Incorporation Location, Partitioned on Profit Firm Years and Loss Firm Years

| <i>Independent variable</i> | <i>Dependent Variable</i> | |
|-----------------------------|---|----------------------------|
| | After-Tax Return on Sales at t Profit Firm Years | Loss Firm Years |
| Canada | 0.013*** (0.004) | -0.08*** (0.025) |
| N | 21,016 | 10,206 |
| R squared | 0.14 | 0.44 |
| Other Foreign | 0.024*** (0.004) | 0.07** (0.027) |
| N | 21,017 | 10,153 |
| R squared | 0.14 | 0.43 |
| Tax Haven | 0.019*** (0.004) | -0.09** (0.034) |
| N | 20,976 | 10,074 |
| R squared | 0.14 | 0.44 |
| All other controls | yes | yes |

***, **, * - significant at the 1%, 5%, 10% level.
Standard errors in parentheses.
See Table 1 for variable descriptions.

Appendix 1: Diagrams of U.S.-Parented and Non-U.S.-Parented Structures

U.S.-Parented Structure



Non-U.S.-Parented Structure

