

# What Drives Corporate Inversions?

## International Evidence

*First Draft: November 18, 2015*

*This Draft: November 18, 2015*

### Abstract

Corporate inversions, whereby companies are able to change their country of incorporation without changing their physical headquarters and management, are neither a recent nor a US phenomenon. Yet, prior studies have usually focused on small samples of US firms. Using hand-collected data on 691 corporate inversions, we identify characteristics and drivers of inversion flows from 11 home countries into 45 host countries over the last two decades. Host countries that are geographically closer, have more bilateral trade, lower tax rates, and stronger governance standards are more likely to attract inversions while profitable and well-governed firms with high levels of cash and foreign revenues are more likely to invert. To address identification concerns, we exploit two natural experiments, namely bilateral Double Taxation Treaties (DTTs) providing additional tax incentives for inversion and bilateral Tax Information Exchange Agreements (TIEAs) increasing transparency of tax havens. We show that both lead to an increase in number and likelihood of inversions. These documented tax and governance motives suggest that inversions may be in shareholders' interest.

**Preliminary and Incomplete. Do not cite. Do not circulate.**

*JEL Classification: G34, H26*

*Keywords: Inversions, Tax havens, Tax avoidance, Cross-border flows*

---

## 1. Introduction

In 1982, a Louisiana-based construction firm, *McDermott International*, converted one of its cash-rich Panama-based subsidiaries into the new parent firm of McDermott International. The shareholders of the original Louisiana-based firm had their shares exchanged for shares in the Panamanian company, which paid very little income taxes due to the territorial tax system in Panama. This was the first so-called corporate inversion. Inversions allow companies to save taxes by changing their country of incorporation without changing physical headquarters, management, and ownership.<sup>1</sup>

Recently, inversions have enjoyed a surge in popularity among companies while at the same time gaining notoriety amongst policy makers and the media, particularly in the US. The debate has centered around whether companies are shirking their domestic tax obligations by engaging in corporate inversions in countries with lower tax rates.<sup>2</sup> While tax motives on their own may justify potentially costly inversions into low tax environments, any technique aimed at hiding income from tax authorities might complement the hiding of income from minority shareholders through their lack of transparency. Indeed, changes in incorporation country may make it more costly for shareholders to monitor firms' activities. If inversion destinations are chosen in shareholders' interest, one may expect that firms invert into well-governed countries so as to lower the cost of monitoring.<sup>3</sup> Of course, vice versa, if inversions occur against shareholders'

---

<sup>1</sup> In the US, the American Jobs Creation Act of 2004 (JOBS Act, P.L. 108-357) restricts firms' ability to save taxes through inversions without changing ownership. Specifically, under the provisions of the Act, inverted corporations are treated as US corporations for tax purposes if more than 80% of their shareholders are US-based.

<sup>2</sup> See OECD *Base Erosion and Profit Shifting* report (<http://www.oecd.org/ctp/beps-2014-deliverables-explanatory-statement.pdf>) according to which realigning taxation and economic activities has become a key priority of governments around the globe.

<sup>3</sup> In Russia, for instance, channels used to avoid taxes are also used to tunnel resources out of corporations into the pockets of controlling shareholders or managers. This comes at the cost of minority shareholders. Indeed, Desai, Dyck and Zingales (2007) show that increased tax enforcement in Russia leads to an increase in value of Russian oil

interests, one may expect that firms invert into poorly governed countries. Taken together, these considerations suggest a second determinant of inversion destinations that goes beyond pure tax saving considerations: in the interest of minority shareholders, inversions should be aimed at well-governed countries.

In this paper, we examine the country characteristics that determine cross-border inversion flows and characteristics of firms that are likely to engage in corporate inversions. We hand-collect data on 691 corporate inversions from 11 home countries into more than 40 host countries over the 1996-2013 period. Past studies have focused on firms that inverted out of the US for tax reasons.<sup>4</sup> However, our sample indicates that corporate inversions are not merely a US phenomenon. Indeed, less than one third of our inversion sample constitutes US firms. By using an international sample of inversions, we are able to provide a richer description of country and firm characteristics that drive inversion decisions.

We start by documenting factors affecting the likelihood that firms from a given country invert into other countries. Our preferred definition of an inversion requires a firm to change its country of incorporation.<sup>5</sup> Geography clearly matters; the shorter the distance between two countries, the more likely there are corporate inversions between two countries. In addition, inversions are more likely to occur between countries that trade more commonly with one another, presumably because these countries tend to share a common cultural background.

---

firms: Increased tax enforcement may reduce tax avoidance, but this negative effect on value is more than offset by the reduction in stealing.

<sup>4</sup> Desai and Hines (2002) study 26 corporate inversions of U.S. multinationals in the 1982–2002 period. Seida and Wempe (2004) examine the consequences of 12 inversions in the 1993-2002 period. Cloyd et al. (2003) analyze stock price reactions around the announcement and board of director approval dates of 20 U.S. inversions between 1983 and 2002. Cortes et al. (2014) investigate the consequences of U.S. corporate inversions over the 1996-2013 period.

<sup>5</sup> This definition broadly follows the literature. Cortes et al. (2014), who focus on inversions by US firms, for instance, define inversions as changes in incorporation country while remaining cross-listed in the US.

Consistent with US policy makers' concerns and popular belief, we find that inversions are more likely to occur between countries with high tax rate differentials, with firms inverting to the low tax countries. However, we find no evidence that firms invert to help controlling owners or managers to further their own interests. On the contrary, firms are more likely to invert to countries with stronger governance, measured by corruption levels, voice and accountability, political stability, government effectiveness, regulatory quality, and rule of law.<sup>6</sup>

Of course, static tax differentials and governance differences might be correlated with other country-pair differences. To alleviate this concern, we exploit two natural experiments in which our time series data enables us to explore the impact of changes in countries' institutional environment on inversion flows. First, we study the passage of bilateral Double Taxation Treaties (DTTs). DTTs ensure that taxes paid in one country can be used to offset taxes due in another country. DTTs by and large affect taxes on dividend gains. Importantly, inversions are not typically associated with changes in the shareholder base: existing shareholders will benefit from DTTs because DTTs bring dividend tax reductions. The passage of DTTs therefore increases the motive for tax-driven inversions. Indeed, we observe a noticeable and statistically significant increase in the number of inversions around and after passage of DTTs. Economically, when two countries sign a DTT, the number of inversions between these country pairs increases by 2.8%.

Second, we study passage of Tax Information Exchange Agreements (TIEAs). TIEAs are bilateral agreements between two territories, at least one of them a tax haven, allowing for the exchange of information relevant in tax investigations. They constitute an improvement in governance of tax havens through increasing transparency of tax havens: TIEAs improve the

---

<sup>6</sup> This is consistent with prior studies that find strong governance motives for cross-listings and cross-border M&As (See for example, Coffee (1999) and Rossi and Volpin (2004)).

ability of signatory countries to monitor each other and therefore increase incentives to invert if inversions are in shareholders interests. Indeed, we document an increase in the number of inversions between country pairs after bilateral TIEAs were signed. On average, the number of inversions to a tax haven increases by 5% upon signing a TIEA with the tax haven.

The US media and policy makers tend to portrait firms that invert as unpatriotic, poorly run firms.<sup>7</sup> Given our results that firms tend to invert into better governed countries, a natural question to ask is what are the characteristics of the firms that invert after controlling for country- and time-fixed effects. Indeed, we show that firms that conduct inversions are better governed, more profitable, cash-rich, and have more revenues outside of their home country. This evidence suggests that these firms are well-run and that managers are more likely to be acting in the best interest of the shareholders. Additionally, among firms that invert, those that are likely to benefit more from tax savings (with high debt ratios and high effective tax rates) choose tax havens over non-tax havens as their new country of domicile.

Taken together, our paper provides novel evidence on country- and firm-level determinants of corporate inversions. Using two natural experiments, we systematically document tax and governance motives. Corporate inversions might be in shareholders' interest: both tax savings and quality in governance would appear to serve investors. Our results shed light on important policy debates. From policy makers' perspective, our results suggest factors that attract firms – and factors that drive firms away.

---

<sup>7</sup> President Obama called these companies “corporate deserters” on Bloomberg News on July 24, 2014.

## **2. Data**

Following a description of our hand-collected sample of corporate cross-border inversions, we introduce country- and firm-level variables used throughout our analysis.

### ***2.1 Corporate Cross-Border Inversions***

We identify corporate inversion events through changes in the first two digits of the ISIN identifier, i.e. changes in the country code.<sup>8</sup> Data on changes in ISINs is obtained from SIX Financial Information, a Swiss-based data company that sources information directly from over 1,500 global exchanges, multilateral trading facilities, and institutional contributors. Because ISIN changes could also be related to changes in stock exchange listings, we first identify and drop investment trusts/funds and pension funds from our sample. Next, we obtain the effective dates and type of corporate actions that lead to changes in country of incorporation from the database. In order to isolate domicile changes, we focus on two sets of corporate actions: mergers and reorganizations.<sup>9</sup> A reorganization is defined as the formation of a new holding company, or a restructuring which results in change of the shareholder rights. Finally, we cross-check the validity of the dates and corporate actions for all North American firms in our sample by going through company filings available on SEC'S EDGAR database.

We explore corporate inversion of firms from 11 major OECD countries. Our sample countries are those that have been the most acquisitive countries over the 1990-2007 period (Erel, Liao and Weisbach (2012)). Thus, our sample includes firms from the following home

---

<sup>8</sup> ISIN assigns country codes according to the location of a company's head office (Source: <http://www.isin.org/isin/>).

<sup>9</sup> Overall set of corporate actions that lead to ISIN changes include merger, reorganization, demerger, name change, exchange/over-stamping, purchase/exchange offer, reinvestment, reverse split, rights issue, special rights issue, reverse split, spin-off, and stock distribution.

countries: Australia, Canada, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, U.K. and U.S.

Table 1 tabulates the number of inversions in years between 1995 and 2013 by home country, host country, as well as by country pairs. We have a total number of 691 inversions, 340 through mergers and 351 through reorganizations. The majority of inversion transactions are conducted by firms from Canada (284) and the US (218), followed by the UK (104). Host countries include 45 territories, 20 of them classified as tax havens based on Dharmapala and Hines' (2009) definition.<sup>10</sup>

On average, 38% of the inversion transactions involve a tax-haven country. Among host countries with the strongest inflows are the US (188) and Canada (86) but also tax havens such as Bermuda (66), the Cayman Islands (42), and the British Virgin Islands (58). More broadly, six of the top ten hosts are tax havens. Moreover, besides strong flows from Canada to the US (171) and vice versa (76), country-pair flows take place between a range of destinations rather than just one preferred destination. There is also significant variation across countries in the relative importance of mergers and reorganization as modes of inversion. For example, only 33% of all inversion deals from the UK are mergers whereas more than 90% of all inversion deals from France and Italy are mergers. In the US, mergers are a more popular mode of inversion. The significance of reorganizations as a mode of inversion becomes clear when we study host countries: For most of the tax-haven countries, inversions through mergers are much less likely than mergers through reorganizations, with the exception of Ireland, Marshall Islands, Panama, Singapore, and Switzerland.

---

<sup>10</sup> Tax Haven countries are: Bermuda, Virgin Islands, Cayman Islands, Ireland, Luxembourg, Switzerland, Singapore, Marshall Islands, Isle of Man, Anguilla, Bahamas, Antigua and Barbuda, Belize, Cyprus, Liechtenstein, Malta, Panama, Saint Kitts and Nevis.

--- Table 1 about here ---

Panel A of Figure 1 shows the evolution of corporate cross-border inversions between 1996 and 2013. We observe around 20 inversions between 1997 and 2007, and around 30 inversions per year thereafter. While Figure 1 documents some time variation in the number of inversions, it also alleviates concerns that inversions might be centered around a certain point in time, such as the financial crisis. Similarly, while there is some time variation in the number of mergers and reorganizations, there do not appear to be trends towards either of these types of inversion in any period of time.

--- Figure 1 about here ---

Panels B and C focus on the occurrence of inversions aimed at tax havens. Some interesting patterns emerge. Whereas mergers are a more popular mode of transition when we consider all inversions, reorganization become more popular when we consider only inversions into tax havens. The disparity between the two modes is especially large after 2007, which happens to be the onset of the global financial crisis when the volume of cross-border mergers also started to drop. Panel C depicts the inversions involving a tax haven country as a percentage of all inversions. Consistent with the pattern in Panel B, reorganizations are more likely to involve a tax-haven country than mergers.

## ***2.2 Country characteristics***

Country-pair variables such as double tax treaties and trade flows are obtained from UNCTAD and COMTRADE databases. Data on Tax Information Exchange Agreements and corporate tax rates are provided by the OECD. For the non-OECD countries we compile corporate tax rates using KPMG filings and country websites. Geographical distances between



country-pairs are calculated using the latitude and the longitude of capital cities of each country. We obtain country-level governance, economic and financial development variables from Worldbank database. Governance variables increase in the quality of country governance and include aspects such as Corruption, Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality and Rule of Law (See Kaufmann et al. (2009)). Market returns (in US dollars) and exchange rate returns (with Euro as the base currency) are calculated using the annual data on Datastream. Finally, we use quality index of merger laws (Bris et al. (2010)) to proxy for market competition.

We report the descriptive statistics for country variables in Panel A of Table 2, where time-series observations are averaged over the available years for each country. The statutory corporate tax rate range between 0-38%, with a mean of 22% (median of 26%). GDP per capita is lowest for Ghana (\$533) and highest for Liechtenstein (\$102,115) with an average around \$30,000. GDP growth ranges between 0.5-7.5% with a mean of 3%. Market capitalization is, on average, 76% of GDP and average market turnover is 62%. For governance variables, the minimum score is for Israel (high political instability) and the maximum score is for Finland (low corruption). Average annual market return and exchange rate return are 14.17% and 3.01%, respectively. Merger quality is static and range between 0 (highest) and 4 (lowest).

--- Table 2 about here ---

### ***2.3 Firm characteristics***

Our main data source for firm-level characteristics is Datastream/Worldscope, which provides financial data for public firms beginning in year 1985. We obtain firm-level data on all available firms in Worldscope. To minimize the potential influence of extreme observations as well as data reporting errors, we impose filters and winsorize all continuous variables at the 1st

and 99th percentiles of their respective distributions. We calculate fundamental financial ratios as percentage of total assets or total sales. Table A1 provides the details on the calculation of financial variables. Panel B of Table 2 reports summary statistics of firms in Worldscope population for years between 1985-2014. The mean (median) value of total assets of firms is \$1.8 billion (\$172 million). The difference between the mean and median illustrates that firm size is highly skewed. The average leverage ratio (defined as ratio of total liabilities to total assets) is around 51%, the median ROA is around 3% while the median Tobin's Q is 1.27. These numbers are consistent with studies that previously reported financial ratios based on Worldscope data (see for example, Daske et al. (2008)). The median current ratio is 52%, cash ratio is 12%, net cash flows constitute 5% of sales and net sales are 73% of total assets. Investments (measured by capital expenditures) are 5% (median of 4%) of total assets, R&D expenses are 4% (median of 0.7%) and intangible assets are 8% (median of 2%) of total assets. Dividend yield has a mean of 3.2% (median of 0.23%) and average effective tax rate is around 15%. Foreign sales are 23% of overall sales (median of 9.6%) and foreign income is 12% (median of zero) of the overall income. Insider ownership for Worldscope firms seems to be high on average, around 45%, and the average age of firms in the database is 20 years (median of 12 years). Number of employees per firm is also highly skewed with a mean of 4,070 and a median of 636 and average sales per employee is \$417, 750 (median of \$203, 410).

From this overall sample, we next identify our main sample firms that changed country of incorporation using their Old ISINs. At the outset, 46% of our sample firms have information available on Worldscope database. For the missing observations we use Capital IQ (CIQ) database and match remaining 52%, thus losing only 2% of firms in our main sample. Even though we identify 98% of our inversion firms, we lose 40% of our sample due to missing

financial information. We discuss the characteristics of inversion firms in detail in Section 4.

### **3. Country characteristics and corporate cross-border inversions**

In this section, we study country characteristics and the occurrence of corporate cross-border inversions. As outlined above, if inversions are in the interest of shareholders, we should observe that inversion activity is associated with tax motives. Similarly, we should also observe an association between governance in the host country and inversion activity. We start by analyzing correlations between country characteristics and inversions and then examine country-pair differences as potential drivers for inversions. Our strongest evidence is provided by changes in country-pair relations provided by bilateral Double Tax Treaties (DTTs) and Tax Information Exchange Agreements (TIEAs).

#### ***3.1 Correlations***

We start by documenting correlations between country characteristics and the occurrence of corporate cross-border inversions. One immediate caveat is that our sets of home countries and host countries is selected which is why we encourage caution when interpreting our results beyond non-sample countries.

--- Table 3 about here ---

In Table 3, we focus on characteristics of host countries and the number of inversions they attract. Again in line with inversions being tax-motivated, we document a weak negative correlation between corporate tax rates in the host country and the number of inversions; this correlation is driven by reorganizations. Our governance measures are positively correlated with the number of inversions; this is suggestive evidence that strong governance attracts inversions.

### ***3.2 Multivariate regressions***

We have so far established that tax- and governance motives correlate with the number of inversions at the home and host level. We now employ multivariate regressions to examine whether home country characteristics, host country characteristics, and the difference between home and host country characteristics explain flows of inversions out of home into host countries.

In Panel A of Table 4, our dependent variable of interest measures inversion flows between home and host countries. In Models (1)-(5) of Panel A, the dependent variable is the logarithm of one plus total number of inversion deals between 1995 and 2013 ( $X_{ij}$ ) in which the company comes from country  $i$  and changed its domicile to country  $j$  (where  $i \neq j$ ). Models (6) and (7) examine the ratio of the total number of inversion deals between 1995 and 2013 ( $X_{ij}$ ) scaled by sum of the number of all inversion deals into the host country  $j$ . Models (8) and (9) study the logarithm of one plus the total number of inversion deals between 1995 and 2013 ( $X_i$ ) in which the company comes from country  $i$ . Including different denominators in the dependent variables allows us to implicitly control for both home and host factors that will influence the volume of inversion deals. In Column 1, we focus on corporate taxes in the host country; we therefore include home fixed effects. In all other columns, we include host fixed effects and focus on home characteristics as well as country pair differences.

--- Table 4 about here ---

We find that tax motives may play a role in inversion flows. Indeed, after controlling for home fixed effects, host countries attract more corporate inversions when corporate tax rates are low (Column 1). Reversely, home countries are more likely to be the origination of inversions

when corporate taxes are high (Column 2). Taken together, and confirming that inversions are associated with tax motives, more inversions occur between country pairs where the host country provides a relative tax advantage as measured by the difference between home and host corporate tax rates (Column 3).

Next, we augment this analysis to other country characteristics. In order to test whether such other country characteristics explain inversion flows over and above the tax motive documented before, we still control for the difference between home and host tax rates. First, we conjecture that inversions may be associated with higher transaction costs when home and host are geographically apart. Indeed, we document fewer inversions as the distance between home and host country increases (Column 4). Second, we document a higher number of inversions out of economically more developed home countries. Third, and in line with our main prediction on country-level governance, we document lower inversion flows between well-governed home countries and poorly-governed host countries (Column 5).

Panel A then tests whether these results are robust to alternative measures of inversion flows. Specifically, we study whether the fraction of inversions aimed at a certain host (Columns 6 and 7) and the total number of inversions from certain home countries (Columns 8 and 9) are explained by home characteristics and country-pair differences. We confirm our previous results.

In Panel B of Table 4, we repeat our analysis using Probit regressions. In Columns (1) through to (5), the dependent variable of interest is a Dummy equal to 1 if a country pair experienced at least one inversion over the sample period. By and large, our previous evidence is confirmed though taxes in the host country are insignificantly related to the occurrence of at least one inversion. The last Columns of Table 4 focus on drivers of different types of inversions, notably reverse mergers (Columns 6-7) and reorganizations (Columns 8-9). Again, consistent

with the overall pattern, high tax differences and low differences in governance are associated with both types of inversions.

Note that Probit regressions treat all countries with inversions deals the same, unlike in Panel A where countries such as US and UK that have larger number of inversion deals will have a higher weight. Nonetheless, in unreported regressions, we test whether our results hold when we exclude the US/UK as home countries and all our results come through. We also test whether tax-haven countries are driving our results and we find that all of our results hold when we exclude tax havens as host countries.

### ***3.3 Experimental evidence***

We have so far documented that inversions are associated with high potential for tax savings and low governance differences between home and host countries. These country-pair differences however, are likely to be highly correlated with other omitted country-pair differences that explain inversion flows. To alleviate this concern, this sub-section provides experimental evidence of changes in country-pair characteristics and their impact on inversion activity.

One potential source of variation is changes in tax and governance at the home or host country level. However, one concern with such variation is that it is associated with other changes at the country level which is why we focus on bilateral variation in tax- and governance-characteristics.

First, we focus on the tax motive by studying the number of inversions around the passage of Double Tax Treaties (DTTs). DTTs are agreements between two countries, reciprocally agreeing on reduced withholding tax rates and even on a more lenient double tax relief regime. The

passage of such treaties constitutes a motive for inversions since the profitability of a tax inversion also depends on the dividend repatriation tax rates of the host as well as the double taxation reliefs between the home and the host countries. Notably, inversions are not typically associated with changes in the shareholder base.

Figure 2 shows the number of inversions between country pairs around years in which bilateral DTTs were signed in absolute terms (left) and relative to a set of control country pairs. Treated country pairs are pairs of countries that signed DTTs. Control country pairs are pairs of home countries and other countries that never signed a DTT around the time home countries signed a DTT. As is apparent from Figure 2, there is a noticeable increase in the number of inversions around the passage of DTTs and this increase is sustained in the years after passage.

--- Figure 2 about here ---

Second, we study passage of Tax Information Exchange Agreements (TIEAs). These are bilateral agreements between two territories, at least one of them a tax haven, allowing for the exchange of information relevant in tax investigations. TIEAs constitute an improvement in governance through increasing transparency of tax havens but may be used to re-assess corporate taxes. However, the literature has shown that the effect of TIEAs on transparency likely outweighs the effect of TIEAs on taxes (see e.g. Bennedsen and Zeume 2015).

If inversions are in shareholders' interests, improvements in country-pair governance likely increase the incentive for corporate inversions.

Figure 3 shows the number of inversions between country pairs around years in which bilateral TIEAs were signed in absolute terms (left) and relative to a set of control country pairs. Treated country pairs are pairs of countries that signed TIEAs. Control country pairs are pairs of

home countries and other countries that never signed a TIEAs around the time home countries signed a TIEA. Figure 3 documents a noticeable increase in the number of inversions around the passage of TIEAs; while this increase peaks in the year of passage and the year thereafter, the increase in inversions relative to control firms is sustained throughout years after passage.

--- Figure 3 about here ---

One might potentially argue that the signing of DTTs and TIEAs is associated with other changes in country-pair characteristics. We investigate this possibility further in Table 5. We estimate a specification in which the dependent variable is the logarithm of one plus total number of inversion deals between an ordered particular country pair in a given year between 1995 and 2013 ( $X_{ijt}$ ). Our sample consists of country pairs with one observations per year for each country pair, for a total of 9,196 observations.

We report these estimates in Panel A. We show that the number of inversions between country pairs increases after these country pairs sign a DTT (Column 1) or a TIEA (Column 2) even after including both home and host country and time fixed effects. We then include additional country-pair characteristics such as geographic distance and time-varying differences in economic development (Columns 3-4) and find that our results hold. In Columns 5 and 6, we additionally control for the volume of bilateral trade between the two countries, defined as the ratio of imports between home and host scaled by total amount of imports by home countries, the stock market turnover, and the merger quality index of the home country. These controls suggest even higher economic magnitude of double taxation treaties and TIEA on inversion flows. The number of inversions increase by 2.8% and 5% when two countries sign a double taxation treaty and TIEA, respectively.



To control for potential long-term trends between country-pairs that might affect inversion propensities, we include country-pair fixed effects in Columns 7 to 12. This specification allows us to exploit only time-series variation in the signing treaties between countries while controlling for cross-country differences. We again find consistent results as before.

Panel B presents probit regressions where the dependent variable is equal to one if there is any inversion deal between a given country pair in a given year and zero otherwise. In Columns 1 to 6, we include no fixed effects and in Columns 7 to 12, we include both home and host country and time fixed effects. The results are mostly consistent with what we find in Panel A except for Column 5 and 10. Note that one caveat of the Probit regressions is that all countries with any inversions deal are treated the same without regards to the number of deals unlike the flows used in Panel A. Of the controls, geographic distance clearly hinders inversion flows.

--- Table 5 about here ---

### ***3.4 Robustness***

To perform the analyses presented above, we had to make a number of choices about the specification. Table 6 contains estimates of equations similar to those reported in Tables 5 to examine the robustness of the results to alternative specifications.

In Panel A of Table 6, we estimate two additional measures of inversion flows: the ratio of the total number of inversion deals in a given year between 1995 and 2013 ( $X_{ijt}$ ) scaled by sum of the number of all inversion deals in the home country  $i$  ( $X_i$ ) and similarly by the total number of all inversion deals in both the home and host countries ( $X_i + X_j$ ). Using these alternative flows, the coefficients on both TIEA and DTT remain significant.

In Panel B of Table 6, we focus on drivers of different types of inversions, notably reverse mergers (Columns 1, 2, 5, and 6) and reorganizations (Columns 3, 4, 7, and 8). The dependent variable is equal to one if there is any merger or reorganization inversion deal between a given country pair in a given year and zero otherwise. Here, double taxation treaty is mostly insignificant to predict the propensity of these modes of inversion. However, TIEA remains significantly positive, especially for reorganization. This evidence is consistent with what we find before that reorganization is a more popular mode of inversion to tax haven countries, and especially those that have better governance through TIEA.

--- Table 6 about here ---

#### **4. Firm characteristics**

We have so far established country and country-pair characteristics that attract corporate cross-border inversions. A natural question to ask is what are the characteristics of the firms that invert after controlling for country and time fixed effects. To estimate the factors that affect the likelihood of an inversion, one would ideally like to consider every possible firm that could conceivably change their country of incorporation and estimate the likelihood that any of them actually does. We consider the sample of all publicly traded firms from worldscope, and estimate the characteristics of the firms that engaged in corporate inversions between 1995 and 2013 and firms that did not. In Table 7, we estimate a probit model for firm-level determinants of inversion deals (Columns 1 and 2), those using mergers (Columns 3 and 4) and reorganizations (Columns 5 and 6) respectively, and those that targeted tax havens (Columns 7 and 8). We control for industry-, country-, and year- fixed effects.

--- Table 7 about here ---

We find that firms that conduct inversions are more likely from countries with high tax rates, have much lower closely-held shares, more ADR listings, hold more cash, and have more revenues outside of their home country. High cash holdings are consistent with prior studies. Foley et al. (2015) show that US multinationals hold more cash abroad due to the high repatriation taxes. Additionally, firms that engage in corporate inversions are substantially smaller, more levered, and pay lower dividends. Low dividend payout ratios despite high cash holdings are also in line with tax concerns of dividend repatriation prior to inversions. These evidence suggest that these firms are well run and that managers are more likely to be acting in the best interests of the shareholders.

Among firms that invert, roughly 50% engage in reverse mergers as opposed to reorganizations. One in three inversions is aimed at tax havens. In Columns (3) to (8), we examine determinants of these specific types of inversions separately. We first examine whether firms that inverted through engaging in cross-border mergers are different from others (Models 3 and 4). Indeed firms that inverted through cross-border mergers are larger, hold more cash, and have higher investment-intensity and more intangibles. They are also more likely from countries with higher tax rates. Since tax avoidance strategies such as transfer pricing is facilitated by the use of intangible assets, these results are consistent with the tax motives. Models 5 and 6 present the results for firms that inverted through reorganization. Not surprisingly, these are smaller firms, with high level of debt and lower dividend payout. Interestingly, these firms have lower insider ownership and have higher effective tax rates.

Finally, we check how firms that invert to tax-havens differ from others. We find that those that are likely to benefit more from tax savings (with high debt ratios and high ETRs) choose tax havens over non-tax havens as their new country of domicile, consistent with the notion that tax

haven activities can serve as a substitute for the tax shield (Graham and Tucker, 2006). Overall, these firms are more similar to those that inverted through reorganization, consistent with our earlier finding that reorganization is a popular mode used for inversion when firms invert to tax-haven countries. Overall, these firms characteristics are consistent with prior studies which argue that majority of the artificial income shifting from high-tax to low-tax countries is due to transfers of intangibles and the allocation of debt. (See for example, Grubert (2003) and Seida and Wempe (2004)).

## **5. Conclusion**

In this paper, we have identified characteristics and drivers of inversion flows between 11 home countries and 45 host countries over the 1996-2013 period. We document that tax motives and governance motives are two key drivers of inversion flows. Additionally, our data reveals that inversions are neither merely a recent phenomenon nor merely a US phenomenon.

Overall, the presence of tax and governance motives suggests that inversions may be in shareholders' interest. Besides previously documented tax motives, controlling owners or managers do not seem to have a preference for weakly governed environments, suggesting that inversions are not a means of pursuing self-serving activities that hurt minority shareholders. In light of the many high-profile cases of recent inversions, our paper makes an important first step in understanding the drivers for these inversion flows.

## References

- Bailey, W. and Edith Liu, 2014, Incorporation in Offshore Financial Centers: Naughty or Nice?, SSRN Working Paper.
- Bennedsen, M. and S. Zeume, 2015, Corporate Tax Havens and Transparency. SSRN Working Paper.
- Bris, A., Cabolis, C., & Janowski, V. ,1990, The effect of merger laws on merger activity: international evidence. *Corporate Governance and Regulatory Impact on Mergers and Acquisitions: Research and Analysis on Activity Worldwide since*
- Cloyd, C.B., L. Mills, and C.Weaver, 2003, Firm valuation effects of the expatriation of U.S. corporations to tax-haven countries, *Journal of the American Taxation Association* 25, 87–109.
- Coffee Jr, J. C., 1998, Future as history: The prospects for global convergence in corporate governance and its implications. *Nw. UL Rev.*, 93, 641.
- Cortes, F., Gomes, A. R., & Gopalan, R. ,2014, Corporate Inversions and Americanizations: A Case of Having the Cake and Eating It Too?, Working Paper, Washington University in Saint Louis
- Dharmapala, D. and J.R. Hines, 2009, Which countries become tax havens?, *Journal of Public Economics* 93, 1058-1068.
- Desai, M., A. Dyck, and L. Zingales, 2007, Theft and Taxes, *Journal of Financial Economics* 84, 591-623.
- Desai, M. and J. R. Hines, 2002, Expectations and expatriations: Tracing the causes and consequences of corporate inversions, *National Tax Journal* 55, 409–441.
- Daske, H., Hail, L., Leuz, C., & Verdi, R., 2008, Mandatory IFRS reporting around the world: Early evidence on the economic consequences. *Journal of Accounting Research*, 46(5), 1085-1142.
- Djankov, S., McLiesh, C., & Shleifer, A., 2007, Private credit in 129 countries. *Journal of Financial Economics*, 84(2), 299-329.
- Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A.,2008, The law and economics of self-dealing. *Journal of Financial Economics*, 88(3), 430-465.
- Erel, I., Liao, R., Weisbach, M. , 2012, Determinants of cross-border mergers and acquisitions, *Journal of Finance* 67(3), 1045-1082.
- Foley, F., Hartzell, J., Titman, S., Twite, G., 2007, Why do firms hold so much cash? A tax-based explanation, *Journal of Financial Economics* 86, 579-607.

- Graham, J. R. and Tucker, A. L., 2006, Tax shelters and corporate debt policy, *Journal of Financial Economics*, 81 (3), 563-594.
- Grubert, H., 1998, Taxes and the division of foreign operating income among royalties, interest, dividends and retained earnings, *Journal of Public Economics* 68, 269-290.
- Hanlon, M., Lester, R., Verdi, R., 2015, The effect of repatriation tax costs on U.S. multinational investment, *Journal of Financial Economics* 116, 179-196.
- Huizinga, H.P and J. Voget, 2009, International taxation and the direction and volume of cross-border M&As, *Journal of Finance* 64, 1217-1249.
- Huizinga, H.P., J. Voget and W.Wagner, 2012, Who bears the burden of international taxation? Evidence from cross-border M&As, *Journal of International Economics* 88, 186-197.
- Kaufmann, D., Kraay, A., & Mastruzzi, M., 2009, Governance matters VIII: aggregate and individual governance indicators, 1996-2008. *World Bank Policy Research Working Paper* 4978.
- Rossi, S., and P. F. Volpin, 2004, Cross-country determinants of mergers and acquisitions, *Journal of Financial Economics* 74, 277-304.
- Seida, J., Wempe, W., 2004, Effective tax rate changes and earnings stripping following corporate inversions. *National Tax Journal* 57, 805–827.
- Voget, 2011, Relocation of headquarters and international taxation, *Journal of Public Economics* 95, 1067-1081.

**Table 1 Number of Inversions by Country Pair**

The table tabulates the number of corporate inversions by home and host country pairs. The data consists of firms from 11 OECD countries that changed domicile through mergers or reorganizations in years between 1995 and 2013. Total number of inversions and mergers (# and % of total) are also summarized by home and host country. Countries with \* are tax-haven countries based on Dharmapala and Hines (2009).

| Host Country      | Home Country |        |        |         |       |          |       |        |           |     |     | Total | Merg # | Merg % |
|-------------------|--------------|--------|--------|---------|-------|----------|-------|--------|-----------|-----|-----|-------|--------|--------|
|                   | Australi     | Canada | France | Germany | Italy | Netherl. | Spain | Sweden | Switzerl. | UK  | US  |       |        |        |
| Anguilla*         | 0            | 1      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 2   | 3     | 0      | 0%     |
| Antigua *         | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 1   | 1     | 0      | 0%     |
| Australia         | 0            | 13     | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 2   | 1   | 16    | 8      | 50%    |
| Austria           | 0            | 0      | 1      | 1       | 0     | 0        | 0     | 0      | 0         | 2   | 0   | 4     | 2      | 50%    |
| Bahamas*          | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 2   | 2     | 0      | 0%     |
| Belgium           | 0            | 0      | 1      | 0       | 0     | 1        | 0     | 0      | 0         | 0   | 3   | 5     | 3      | 60%    |
| Belize*           | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 1   | 0   | 1     | 0      | 0%     |
| Bermuda*          | 6            | 16     | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 14  | 30  | 66    | 28     | 42%    |
| Brazil            | 0            | 1      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 0   | 1     | 1      | 100%   |
| Canada            | 8            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 2   | 76  | 86    | 60     | 70%    |
| Cayman Islands*   | 2            | 14     | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 3   | 23  | 42    | 13     | 31%    |
| Curaçao           | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 1   | 1     | 1      | 100%   |
| Cyprus*           | 0            | 1      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 0   | 1     | 0      | 0%     |
| Falkland Islands  | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 1   | 0   | 1     | 1      | 100%   |
| Finland           | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 4      | 0         | 0   | 0   | 4     | 4      | 100%   |
| France            | 0            | 1      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 6   | 0   | 7     | 6      | 86%    |
| Germany           | 0            | 2      | 0      | 0       | 1     | 0        | 0     | 0      | 0         | 1   | 1   | 5     | 5      | 100%   |
| Ghana             | 0            | 1      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 0   | 1     | 1      | 100%   |
| Greece            | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 1   | 0   | 1     | 0      | 0%     |
| Guernsey          | 0            | 3      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 5   | 1   | 9     | 2      | 22%    |
| Ireland*          | 0            | 4      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 21  | 5   | 30    | 25     | 83%    |
| Isle of Man*      | 1            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 4   | 0   | 5     | 0      | 0%     |
| Israel            | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 6   | 6     | 6      | 100%   |
| Italy             | 0            | 0      | 0      | 1       | 0     | 0        | 1     | 0      | 0         | 0   | 0   | 2     | 2      | 100%   |
| Jersey            | 1            | 9      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 14  | 1   | 25    | 3      | 12%    |
| Liechtenstein*    | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 1         | 0   | 0   | 1     | 0      | 0%     |
| Luxembourg*       | 0            | 2      | 13     | 0       | 0     | 10       | 0     | 1      | 0         | 3   | 0   | 29    | 23     | 79%    |
| Malaysia          | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 1   | 1     | 0      | 0%     |
| Malta*            | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 1   | 0   | 1     | 0      | 0%     |
| Marshall Islands* | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 6   | 6     | 5      | 83%    |
| Netherlands       | 0            | 1      | 1      | 0       | 2     | 0        | 0     | 1      | 0         | 2   | 3   | 10    | 8      | 80%    |
| New Zealand       | 1            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 0   | 1     | 0      | 0%     |
| Norway            | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 1      | 0         | 0   | 0   | 1     | 1      | 100%   |
| Panama*           | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 1         | 0   | 0   | 1     | 1      | 100%   |
| Papua New Guinea  | 2            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 0   | 2     | 2      | 100%   |
| Philippines       | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 1   | 1     | 0      | 0%     |
| Puerto Rico       | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 2   | 2     | 0      | 0%     |
| Saint Kitts *     | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 0   | 1   | 1     | 0      | 0%     |
| Singapore*        | 0            | 1      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 1   | 5   | 7     | 4      | 57%    |
| Spain             | 0            | 0      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 1   | 0   | 1     | 0      | 0%     |
| Sweden            | 0            | 3      | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 1   | 0   | 4     | 2      | 50%    |
| Switzerland*      | 0            | 2      | 0      | 1       | 0     | 0        | 0     | 2      | 0         | 2   | 5   | 12    | 6      | 50%    |
| UK                | 7            | 11     | 0      | 1       | 1     | 1        | 0     | 2      | 3         | 0   | 13  | 39    | 28     | 72%    |
| US                | 2            | 171    | 0      | 0       | 2     | 0        | 0     | 0      | 0         | 13  | 0   | 188   | 78     | 41%    |
| Virgin Islands *  | 0            | 27     | 0      | 0       | 0     | 0        | 0     | 0      | 0         | 3   | 28  | 58    | 11     | 19%    |
| Total             | 30           | 284    | 16     | 4       | 6     | 12       | 1     | 11     | 5         | 104 | 218 | 691   | 340    | 49%    |
| % Tax Haven       | 30%          | 24%    | 81%    | 25%     | 0%    | 83%      | 0%    | 27%    | 50%       | 50% | 49% | 38%   | -      | -      |
| Merger (#)        | 19           | 121    | 15     | 3       | 6     | 7        | 1     | 9      | 3         | 34  | 122 | 340   | -      | -      |
| Merger (%)        | 63%          | 43%    | 94%    | 75%     | 100%  | 58%      | 100%  | 82%    | 60%       | 33% | 56% | 49%   | -      | -      |

**Table 2 Sample Characteristics**

The table summarizes country (Panel A) and firm characteristics (Panel B). Panel A reports means, medians, minimums, maximums, standard deviations of country variables for home and host countries in our sample. The countries are listed in Table 1. Time-series variables are averaged over the available years for each country. Refer to Table A1 for variable definitions. Panel B summarizes characteristics of firms from Worldscope population for years between 1985-2014. All variables are winsorized at 1% level and time-series variables are averaged over the available years for each firm. The means, medians, 25<sup>th</sup> percentile, 75<sup>th</sup> percentile, standard deviations and total number of firms are reported. Refer to Table A1 for the definition of variables.

**Panel A: Country characteristics**

| <b>Country Variables</b> | <b>Mean</b> | <b>Median</b> | <b>Min</b> | <b>Max</b> | <b>Std Dev</b> | <b>N</b> |
|--------------------------|-------------|---------------|------------|------------|----------------|----------|
| Corporate Taxes (%)      | 22.03       | 26.00         | 0.00       | 38.26      | 12.52          | 45       |
| GDP per Capita (\$)      | 30,191      | 30,411        | 532.50     | 102,115    | 22,545         | 37       |
| GDP Growth (%)           | 2.95        | 2.47          | 0.59       | 7.46       | 1.62           | 37       |
| Market Cap/GDP (%)       | 76.31       | 62.29         | 5.874      | 204.47     | 48.76          | 31       |
| Turnover (%)             | 61.70       | 54.05         | 0.177      | 174.87     | 47.84          | 31       |
| Exchange Rate Return (%) | 3.01        | 0.14          | -1.29      | 42.81      | 9.18           | 26       |
| Annual Market Return (%) | 14.17       | 12.33         | 10.42      | 34.67      | 5.16           | 25       |
| Corruption               | 1.16        | 1.33          | -0.95      | 2.39       | 0.92           | 39       |
| Voice and Accountability | 1.05        | 1.20          | -0.34      | 1.62       | 0.52           | 39       |
| Political Stability      | 0.71        | 0.98          | -1.27      | 1.47       | 0.69           | 39       |
| Government Effectiveness | 1.18        | 1.46          | -1.11      | 2.14       | 0.82           | 39       |
| Regulatory Quality       | 1.07        | 1.23          | -0.83      | 1.98       | 0.70           | 39       |
| Rule of Law              | 1.10        | 1.35          | -0.89      | 1.93       | 0.77           | 39       |
| Merger Quality Index     | 2.13        | 2.00          | 0.00       | 4.00       | 1.01           | 23       |

**Panel B: Firm characteristics**

| <b>Firm-Variables</b>    | <b>Mean</b> | <b>Median</b> | <b>P25</b> | <b>P75</b> | <b>Std Dev</b> | <b>N</b> |
|--------------------------|-------------|---------------|------------|------------|----------------|----------|
| Total Assets (in\$ mil)  | 1,753.21    | 171.77        | 47.44      | 672.35     | 6,491.16       | 35,540   |
| Total Debt Ratio         | 0.510       | 0.513         | 0.349      | 0.667      | 0.227          | 35,540   |
| Interest Expense         | 0.117       | 0.077         | 0.006      | 0.198      | 0.193          | 35,134   |
| Current Ratio            | 0.517       | 0.525         | 0.359      | 0.677      | 0.221          | 30,984   |
| Cash                     | 0.172       | 0.124         | 0.058      | 0.231      | 0.159          | 35,538   |
| Cash Flows               | -0.328      | 0.054         | -0.003     | 0.125      | 2.639          | 33,990   |
| Sales                    | 0.833       | 0.725         | 0.296      | 1.167      | 0.693          | 35,501   |
| MTB                      | 2.649       | 1.759         | 1.103      | 3.040      | 2.886          | 34,709   |
| Dividend Yield (%)       | 3.210       | 0.228         | 0.000      | 1.631      | 8.972          | 34,755   |
| ROA(%)                   | -0.054      | 3.237         | -0.197     | 6.599      | 15.218         | 35,403   |
| Q                        | 1.629       | 1.265         | 1.014      | 1.833      | 1.164          | 34,724   |
| R&D Expense              | 0.035       | 0.007         | 0.000      | 0.033      | 0.072          | 19,075   |
| Investment               | 0.052       | 0.040         | 0.016      | 0.071      | 0.049          | 35,382   |
| Intangible Assets        | 0.083       | 0.021         | 0.003      | 0.102      | 0.133          | 35,142   |
| Insider Ownership (%)    | 44.702      | 45.041        | 26.742     | 62.075     | 22.808         | 31,807   |
| Foreign Sales            | 0.234       | 0.096         | 0.000      | 0.4083     | 0.291          | 26,247   |
| Foreign Income           | 0.119       | 0.000         | 0.000      | 0.116      | 0.269          | 20,812   |
| ETR                      | 0.153       | 0.146         | 0.041      | 0.247      | 0.151          | 35,325   |
| Age                      | 19.660      | 12.117        | 8.000      | 22.000     | 20.631         | 14,233   |
| Sales/Employee (in 000s) | 417.75      | 203.41        | 102.74     | 412.31     | 695.02         | 32,636   |
| Employees                | 4,070.80    | 636           | 159        | 2,446      | 11,924.61      | 22,379   |



**Table 3: Country characteristics and inversion activity**

This table reports pairwise correlations between inversion activity and host country characteristics. Inversion activity is measured by the natural logarithm of the number of inversions, reverse mergers, and reorganizations attracted by host countries. Refer to Table A1 for the definition of variables.

|                          | LN(1+#Inversions) | LN(1+#Mergers) | LN(1+#Reorgs) | # Observations |
|--------------------------|-------------------|----------------|---------------|----------------|
| Corporate Taxes          | -0.27             | 0.09           | -0.4          | 45             |
| GDP per Capita           | 0.44              | 0.29           | 0.27          | 37             |
| GDP Growth               | -0.12             | -0.09          | 0.08          | 37             |
| Market Cap / GDP         | 0.35              | 0.23           | -0.05         | 31             |
| Turnover                 | 0.19              | 0.01           | -0.07         | 31             |
| Exchange Rate Return     | -0.28             | -0.07          | -0.11         | 26             |
| Annual Market Return     | -0.26             | -0.06          | 0.07          | 25             |
| Corruption               | 0.44              | 0.27           | 0.12          | 39             |
| Voice and Accountability | 0.36              | 0.25           | 0.12          | 39             |
| Political Stability      | 0.28              | 0.28           | 0.13          | 39             |
| Government Effectiveness | 0.41              | 0.24           | 0.09          | 39             |
| Regulatory Quality       | 0.45              | 0.25           | 0.14          | 39             |
| Rule of Law              | 0.45              | 0.29           | 0.15          | 39             |
| Quality Index            | 0.33              | 0.25           | -0.05         | 23             |

**Table 4 Cross-sectional Analysis of the Determinants of Corporate Inversions**

This table presents estimates of cross-sectional OLS (Panel A) and Probit (Panel B) regressions of cross-border corporate inversion in country pairs. In Models (1)-(5) of Panel A, the dependent variable is the logarithm of one plus total number of inversion deals between 1995 and 2013 ( $X_{ij}$ ) in which the company comes from country  $i$  and changed its domicile to country  $j$  (where  $i \neq j$ ). Models (6) and (7) examine the ratio of the total number of inversion deals between 1995 and 2013 ( $X_{ij}$ ) scaled by sum of the number of all inversion deals into the (Host) country  $j$ . Models (8) and (9) study the logarithm of one plus the total number of inversion deals between 1995 and 2013 ( $X_i$ ) in which the company comes from country  $i$ . In Panel B, Models (1)-(5) explain a dummy equal to one if there is any inversion deal between a given country pair and zero otherwise. Models 6 and 7 (8 and 9) explain a dummy equal to one if there is any inversion deal through reverse merger (reorganization) between a given country pair. Refer to Table A1 for the definition of control variables. In both panels, host country ( $j$ ) fixed effects are included in all models except (1) where home country ( $i$ ) fixed effects are included. Heteroscedasticity corrected standard errors are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5% and 10% levels, respectively.

**Panel A: OLS Regressions**

|                            | (1)              | (2)              | (3)              | (4)              | (5)              | (6)           | (7)           | (8)           | (9)           |
|----------------------------|------------------|------------------|------------------|------------------|------------------|---------------|---------------|---------------|---------------|
|                            | $\ln(1+ X_{ij})$ | $\ln(1+ X_{ij})$ | $\ln(1+ X_{ij})$ | $\ln(1+ X_{ij})$ | $\ln(1+ X_{ij})$ | $X_{ij}/ X_j$ | $X_{ij}/ X_j$ | $\ln(1+ X_i)$ | $\ln(1+ X_i)$ |
| % Tax (Host)               | -0.005*          |                  |                  |                  |                  |               |               |               |               |
|                            | (0.0027)         |                  |                  |                  |                  |               |               |               |               |
| % Tax (Home)               |                  | 0.011*           |                  |                  |                  |               |               |               |               |
|                            |                  | (0.0058)         |                  |                  |                  |               |               |               |               |
| % Tax Home less Host       |                  |                  | 0.011*           | 0.028***         | 0.073***         | 0.013***      | 0.022***      | 0.111***      | 0.413***      |
|                            |                  |                  | (0.0058)         | (0.0090)         | (0.0113)         | (0.0039)      | (0.0048)      | (0.0121)      | (0.0077)      |
| Geographic Distance        |                  |                  |                  | -0.072***        | -0.081***        | -0.031***     | -0.034***     | -0.046*       | -0.101***     |
|                            |                  |                  |                  | (0.0176)         | (0.0205)         | (0.0064)      | (0.0077)      | (0.0266)      | (0.0291)      |
| Log(GDP per capita (Home)) |                  |                  |                  | 0.012**          | 0.013**          | 0.007***      | 0.007***      | 0.070***      | 0.081***      |
|                            |                  |                  |                  | (0.0059)         | (0.0060)         | (0.0025)      | (0.0026)      | (0.0120)      | (0.0050)      |
| GDP Growth (Home)          |                  |                  |                  | 0.341***         | 0.626***         | 0.124***      | 0.216***      | 1.236***      | 2.077***      |
|                            |                  |                  |                  | (0.0525)         | (0.1023)         | (0.0199)      | (0.0355)      | (0.0781)      | (0.1314)      |
| Rule of Law Home less Host |                  |                  |                  |                  | -0.613***        |               | -0.212***     |               | -1.371***     |
|                            |                  |                  |                  |                  | (0.1712)         |               | (0.0547)      |               | (0.2062)      |
| % Turnover (Home)          |                  |                  |                  |                  | -0.014***        |               | -0.004***     |               | -0.077***     |
|                            |                  |                  |                  |                  | (0.0022)         |               | (0.0008)      |               | (0.0023)      |
| Quality Index (Home)       |                  |                  |                  |                  | 0.498***         |               | 0.139***      |               | 2.195***      |
|                            |                  |                  |                  |                  | (0.0804)         |               | (0.0323)      |               | (0.0829)      |
| Fixed Effects              | Home             | Host             | Host             | Host             | Host             | Host          | Host          | Host          | Host          |
| Observations               | 484              | 484              | 484              | 484              | 418              | 484           | 418           | 484           | 418           |
| R-squared                  | 0.209            | 0.189            | 0.189            | 0.299            | 0.400            | 0.158         | 0.232         | 0.342         | 0.831         |

**Panel B: Probit Regressions**

|                            | (1)                | (2)                 | (3)                 | (4)                   | (5)                   | (6)                   | (7)                   | (8)                   | (9)                   |
|----------------------------|--------------------|---------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| % Tax (Host)               | -0.001<br>(0.0053) |                     |                     |                       |                       |                       |                       |                       |                       |
| % Tax (Home)               |                    | 0.025**<br>(0.0125) |                     |                       |                       |                       |                       |                       |                       |
| % Tax Home less Host       |                    |                     | 0.025**<br>(0.0125) | 0.057***<br>(0.0150)  | 0.229***<br>(0.0505)  | 0.046**<br>(0.0188)   | 0.156***<br>(0.0446)  | 0.054***<br>(0.0169)  | 0.483**<br>(0.2400)   |
| Geographic Distance        |                    |                     |                     | -0.168***<br>(0.0333) | -0.214***<br>(0.0407) | -0.132***<br>(0.0381) | -0.171***<br>(0.0483) | -0.201***<br>(0.0405) | -0.207***<br>(0.0448) |
| Log(GDP per capita (Home)) |                    |                     |                     | 0.030***<br>(0.0110)  | 0.053**<br>(0.0241)   | 0.018<br>(0.0135)     | 0.042*<br>(0.0250)    | 0.037***<br>(0.0120)  | 0.176<br>(0.1278)     |
| GDP Growth (Home)          |                    |                     |                     | 0.963***<br>(0.1472)  | 1.778***<br>(0.3068)  | 0.818***<br>(0.1758)  | 1.442***<br>(0.3582)  | 1.364***<br>(0.1916)  | 2.421***<br>(0.5743)  |
| Rule of Law Home less Host |                    |                     |                     |                       | -1.799**<br>(0.7089)  |                       | -1.612**<br>(0.8139)  |                       | -2.213*<br>(1.2331)   |
| % Turnover (Home)          |                    |                     |                     |                       | -0.047***<br>(0.0083) |                       | -0.032***<br>(0.0075) |                       | -0.098**<br>(0.0434)  |
| Quality Index (Home)       |                    |                     |                     |                       | 1.532***<br>(0.2383)  |                       | 0.895***<br>(0.2381)  |                       | 2.645***<br>(0.5290)  |
| Fixed Effects              | Home               | Host                | Host                | Host                  | Host                  | Host                  | Host                  | Host                  | Host                  |
| Observations               | 484                | 484                 | 484                 | 484                   | 418                   | 331                   | 287                   | 365                   | 321                   |

**Table 5 Panel Analysis of the Determinants of Corporate Inversions**

This table presents estimates of pooled time-series and cross sectional regressions of cross-border corporate inversion in country pairs. Panel A presents OLS regressions where the dependent variable is the logarithm of one plus total number of inversion deals in a given year between 1995 and 2013 ( $X_{ijt}$ ) in which the company comes from country  $i$  and changed its domicile to country  $j$  (where  $i \neq j$ ) in year  $t$ . Panel B presents probit regressions where the dependent variable is equal to one if there is any inversion deal between a given country pair in a given year and zero otherwise. Refer to Table A1 for the definition of variables. Heteroskedasticity corrected t-statistics are in parentheses. The symbols \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5% and 10% levels.

**Panel A: OLS Regressions**

|                            | (1)               | (2)               | (3)               | (4)               | (5)               | (6)               | (7)          | (8)          | (9)          | (10)         | (11)         | (12)         |
|----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Double Taxation            | 0.022***          |                   | 0.019***          |                   | 0.028***          |                   | 0.041***     |              | 0.016        |              | 0.021*       |              |
| Treaty                     | (0.0066)          |                   | (0.0067)          |                   | (0.0071)          |                   | (0.0100)     |              | (0.0105)     |              | (0.0109)     |              |
| TIEA                       |                   | 0.045***          |                   | 0.037**           |                   | 0.050***          |              | 0.062***     |              | 0.042***     |              | 0.055***     |
|                            |                   | (0.0160)          |                   | (0.0158)          |                   | (0.0176)          |              | (0.0123)     |              | (0.0125)     |              | (0.0142)     |
| Geographic Distance        |                   |                   | -0.015***         | -0.015***         | -0.004***         | -0.004***         |              |              |              |              |              |              |
|                            |                   |                   | (0.0018)          | (0.0018)          | (0.0014)          | (0.0014)          |              |              |              |              |              |              |
| Log(GDP per capita (Home)) |                   |                   | 0.003***          | 0.003**           | 0.005***          | 0.004***          |              |              | 0.004***     | 0.004***     | 0.003***     | 0.003***     |
|                            |                   |                   | (0.0012)          | (0.0012)          | (0.0011)          | (0.0012)          |              |              | (0.0005)     | (0.0005)     | (0.0006)     | (0.0006)     |
| GDP Growth (Home)          |                   |                   | -0.003*           | -0.003            | -0.004**          | -0.004**          |              |              | -0.002**     | -0.001*      | -0.001       | -0.001       |
|                            |                   |                   | (0.0018)          | (0.0018)          | (0.0017)          | (0.0017)          |              |              | (0.0009)     | (0.0008)     | (0.0009)     | (0.0008)     |
| Import Ratio               |                   |                   |                   |                   | 4.970***          | 4.958***          |              |              |              |              | -3.071**     | -3.044**     |
|                            |                   |                   |                   |                   | (0.6476)          | (0.6473)          |              |              |              |              | (1.2556)     | (1.2564)     |
| % Turnover (Home)          |                   |                   |                   |                   | 0.239***          | 0.234***          |              |              |              |              | 0.164***     | 0.185***     |
|                            |                   |                   |                   |                   | (0.0833)          | (0.0828)          |              |              |              |              | (0.0572)     | (0.0583)     |
| Quality Index (Home)       |                   |                   |                   |                   | 0.005             | 0.008             |              |              |              |              |              |              |
|                            |                   |                   |                   |                   | (0.0088)          | (0.0088)          |              |              |              |              |              |              |
| Fixed Effects              | Home, Host & time | Home, Host & time | Home, Host & time | Home, Host & time | Home, Host & time | Home, Host & time | Country Pair | Country Pair | Country Pair | Country Pair | Country Pair | Country Pair |
| Observations               | 9,196             | 9,196             | 9,196             | 9,196             | 8,712             | 8,712             | 9,196        | 9,196        | 9,196        | 9,196        | 8,712        | 8,712        |
| R-squared                  | 0.130             | 0.131             | 0.148             | 0.149             | 0.281             | 0.281             | 0.471        | 0.473        | 0.476        | 0.477        | 0.497        | 0.499        |

**Panel B: Probit Regressions**

|                            | (1)      | (2)      | (3)       | (4)       | (5)      | (6)      | (7)   | (8)      | (9)       | (10)      | (11)      | (12)      |
|----------------------------|----------|----------|-----------|-----------|----------|----------|---|----------|-----------|-----------|-----------|-----------|
| Double Taxation Treaty     | 0.131**  |          | 0.110**   |           | -0.062   |          | 0.367**   |          | 0.443**   |           | 0.459**   |           |
|                            | (0.0510) |          | (0.0529)  |           | (0.0590) |          | (0.1735)  |          | (0.1902)  |           | (0.1867)  |           |
| TIEA                       |          | 0.626*** |           | 0.581***  |          | 0.781*** |   | 0.209*   |           | 0.143     |           | 0.257*    |
|                            |          | (0.0847) |           | (0.0861)  |          | (0.0942) |   | (0.1254) |           | (0.1332)  |           | (0.1404)  |
| Geographic Distance        |          |          | -0.051*** | -0.051*** | -0.023** | -0.018*  |   |          | -0.167*** | -0.163*** | -0.136*** | -0.132*** |
|                            |          |          | (0.0100)  | (0.0102)  | (0.0105) | (0.0107) |   |          | (0.0179)  | (0.0176)  | (0.0194)  | (0.0195)  |
| Log(GDP per capita (Home)) |          |          | 0.016***  | 0.014***  | 0.012*** | 0.009*** |   |          | 0.045     | 0.045     | 0.052     | 0.050     |
|                            |          |          | (0.0020)  | (0.0021)  | (0.0025) | (0.0026) |   |          | (0.0465)  | (0.0467)  | (0.0481)  | (0.0482)  |
| GDP Growth (Home)          |          |          | 0.014     | 0.022     | 0.019    | 0.029**  |   |          | -0.038    | -0.039    | -0.024    | -0.023    |
|                            |          |          | (0.0131)  | (0.0135)  | (0.0142) | (0.0147) |   |          | (0.0354)  | (0.0355)  | (0.0373)  | (0.0373)  |
| Import Ratio               |          |          |           |           | 8.958*** | 9.477*** |   |          |           |           | 7.714***  | 7.504***  |
|                            |          |          |           |           | (0.8522) | (0.8772) |   |          |           |           | (2.0039)  | (1.9375)  |
| % Turnover (Home)          |          |          |           |           | 2.608*** | 2.413*** |   |          |           |           | 0.919     | 0.864     |
|                            |          |          |           |           | (0.4651) | (0.4765) |   |          |           |           | (0.9032)  | (0.8950)  |
| Quality Index (Home)       |          |          |           |           | 0.051    | 0.067    |   |          |           |           | -0.159    | -0.143    |
|                            |          |          |           |           | (0.0436) | (0.0434) |   |          |           |           | (0.2464)  | (0.2462)  |
| Fixed Effects              | No       | No       | No        | No        | No       | No       | Home, Host Home, Host Home, Host Home, Host Home, Host Home, Host | & time   | & time    | & time    | & time    | & time    |
| Observations               | 9,196    | 9,196    | 9,196     | 9,196     | 8,712    | 8,712    | 9,196   | 9,196    | 9,196     | 9,196     | 8,118     | 8,118     |

**Table 6 Panel Analysis of the Determinants of Corporate Inversions: Robustness**

This table presents estimates of pooled time-series and cross sectional regressions of cross-border corporate inversion in country pairs. Panel A presents OLS regressions where we examine two measures of inversion flows: the ratio of the total number of inversion deals in a given year between 1995 and 2013 ( $X_{ijt}$ ) scaled by sum of the number of all inversion deals in the home country  $i$  ( $X_i$ ) and similarly by the total number of all inversion deals in both the home and host countries ( $X_i + X_j$ ). Panel B presents probit regressions. Models 1,2,5,6 (3,4,7,8) employ a dependent variable equals to one if there is any inversion deal through mergers and acquisitions (reorganizations) between a given country pair in a given year. Refer to Table A1 for the definition of variables. Heteroskedasticity corrected t-statistics are in parentheses. The symbols \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5% and 10% levels.

**Panel A: OLS regressions with Alternative Proxies for Inversion Flows**

|                            | (1)                  | (2)                  | (3)                  | (4)                  | (5)                 | (6)                 | (7)                 | (8)                  |
|----------------------------|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|---------------------|----------------------|
|                            | $X_{ijt}/X_i$        | $X_{ijt}/X_i$        | $X_{ijt}/(X_i+X_j)$  | $X_{ijt}/(X_i+X_j)$  | $X_{ijt}/X_i$       | $X_{ijt}/X_i$       | $X_{ijt}/(X_i+X_j)$ | $X_{ijt}/(X_i+X_j)$  |
| Double Taxation Treaty     | 0.001***<br>(0.0004) |                      | 0.000**<br>(0.0002)  |                      | 0.002**<br>(0.0007) |                     | 0.001**<br>(0.0003) |                      |
| TIEA                       |                      | 0.001*<br>(0.0005)   |                      | 0.001**<br>(0.0002)  |                     | 0.001**<br>(0.0005) |                     | 0.001***<br>(0.0002) |
| Geographic Distance        | -0.000**<br>(0.0001) | -0.000**<br>(0.0001) | -0.000**<br>(0.0000) | -0.000**<br>(0.0000) |                     |                     |                     |                      |
| Log(GDP per capita (Home)) | 0.000*<br>(0.0001)   | 0.000<br>(0.0001)    | 0.000<br>(0.0001)    | 0.000<br>(0.0001)    | 0.000<br>(0.0001)   | 0.000<br>(0.0001)   | 0.000<br>(0.0000)   | 0.000<br>(0.0000)    |
| GDP Growth (Home)          | -0.000<br>(0.0001)   | -0.000<br>(0.0001)   | -0.000<br>(0.0001)   | -0.000<br>(0.0001)   | 0.000<br>(0.0001)   | 0.000<br>(0.0001)   | 0.000<br>(0.0000)   | 0.000<br>(0.0000)    |
| Import Ratio               | 0.083***<br>(0.0184) | 0.083***<br>(0.0183) | 0.056***<br>(0.0105) | 0.055***<br>(0.0105) | -0.148<br>(0.1078)  | -0.146<br>(0.1073)  | -0.066*<br>(0.0382) | -0.065*<br>(0.0381)  |
| % Turnover (Home)          | 0.012<br>(0.0083)    | 0.012<br>(0.0083)    | 0.005*<br>(0.0029)   | 0.005*<br>(0.0029)   | 0.009<br>(0.0057)   | 0.009<br>(0.0058)   | 0.004**<br>(0.0021) | 0.005**<br>(0.0021)  |
| Quality Index (Home)       | -0.002**<br>(0.0008) | -0.002**<br>(0.0007) | -0.001*<br>(0.0003)  | -0.001<br>(0.0003)   |                     |                     |                     |                      |
| Fixed Effects              | Home, Host & time    | Home, Host & time    | Home, Host & time    | Home, Host & time    | Country Pair        | Country Pair        | Country Pair        | Country Pair         |
| Observations               | 8,712                | 8,712                | 8,712                | 8,712                | 8,712               | 8,712               | 8,712               | 8,712                |
| R-squared                  | 0.025                | 0.024                | 0.039                | 0.039                | 0.090               | 0.090               | 0.114               | 0.114                |

**Panel B: Probit Regressions for Inversions through Mergers and Reorganizations**

|                            | (1)                   | (2)                   | (3)                   | (4)                  | (5)                   | (6)                   | (7)                   | (8)                   |
|----------------------------|-----------------------|-----------------------|-----------------------|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
|                            | merger                | merger                | reorg                 | reorg                | merger                | merger                | reorg                 | reorg                 |
| Double Taxation Treaty     | 0.044<br>(0.0709)     |                       | -0.230***<br>(0.0766) |                      | 0.256<br>(0.1927)     |                       | 0.350<br>(0.2859)     |                       |
| TIEA                       |                       | 0.285*<br>(0.1479)    |                       | 1.005***<br>(0.1026) |                       | -0.349<br>(0.2177)    |                       | 0.381**<br>(0.1631)   |
| Geographic Distance        | -0.009<br>(0.0118)    | -0.007<br>(0.0119)    | -0.040***<br>(0.0154) | -0.033**<br>(0.0155) | -0.100***<br>(0.0221) | -0.106***<br>(0.0224) | -0.152***<br>(0.0278) | -0.147***<br>(0.0276) |
| Log(GDP per capita (Home)) | 0.016***<br>(0.0030)  | 0.015***<br>(0.0031)  | 0.006**<br>(0.0028)   | 0.001<br>(0.0031)    | 0.053<br>(0.0535)     | 0.057<br>(0.0542)     | -0.000<br>(0.0825)    | 0.004<br>(0.0832)     |
| GDP Growth (Home)          | 0.055***<br>(0.0191)  | 0.057***<br>(0.0193)  | -0.007<br>(0.0167)    | 0.010<br>(0.0178)    | 0.009<br>(0.0441)     | 0.008<br>(0.0441)     | -0.021<br>(0.0526)    | -0.017<br>(0.0529)    |
| Import Ratio               | 10.327***<br>(0.9365) | 10.693***<br>(0.9491) | 9.120***<br>(0.9170)  | 9.255***<br>(0.9452) | 10.057***<br>(1.9494) | 9.803***<br>(1.8823)  | 7.375***<br>(1.8665)  | 7.214***<br>(1.8706)  |
| % Turnover (Home)          | 2.869***<br>(0.5638)  | 2.843***<br>(0.5675)  | 1.931***<br>(0.5703)  | 1.547***<br>(0.5999) | 0.548<br>(1.1217)     | 0.552<br>(1.1132)     | 0.279<br>(1.2421)     | 0.251<br>(1.2357)     |
| Quality Index (Home)       | -0.037<br>(0.0506)    | -0.034<br>(0.0511)    | 0.147**<br>(0.0571)   | 0.169***<br>(0.0555) | -0.063<br>(0.2785)    | -0.079<br>(0.2823)    | -0.010<br>(0.3935)    | -0.028<br>(0.3946)    |
| Fixed Effects              | No                    | No                    | No                    | No                   | Home, Host & time     | Home, Host & time     | Home, Host & time     | Home, Host & time     |
| Observations               | 8,712                 | 8,712                 | 8,712                 | 8,712                | 5,760                 | 5,760                 | 3,906                 | 3,906                 |

**Table 7 Firm-level Determinants of Corporate Inversion**

This table reports Probit estimates for firm-level determinants of corporate inversions. Dependent variable: (i) equals to one if the firm engaged in corporate inversions between 1995-2013 and 0 otherwise (ii) equals to one if the firm engaged in corporate inversions via merger between 1995-2013 and 0 otherwise (iii) equals to one if the firm engaged in corporate inversions via reorganization between 1995-2013 and 0 otherwise (iv) equals to one if the firm inverted to a tax-haven country between 1995-2013 and 0 otherwise. The sample is based on all publicly traded firms in Worldscope. Refer to Table A1 for the definition of variables.

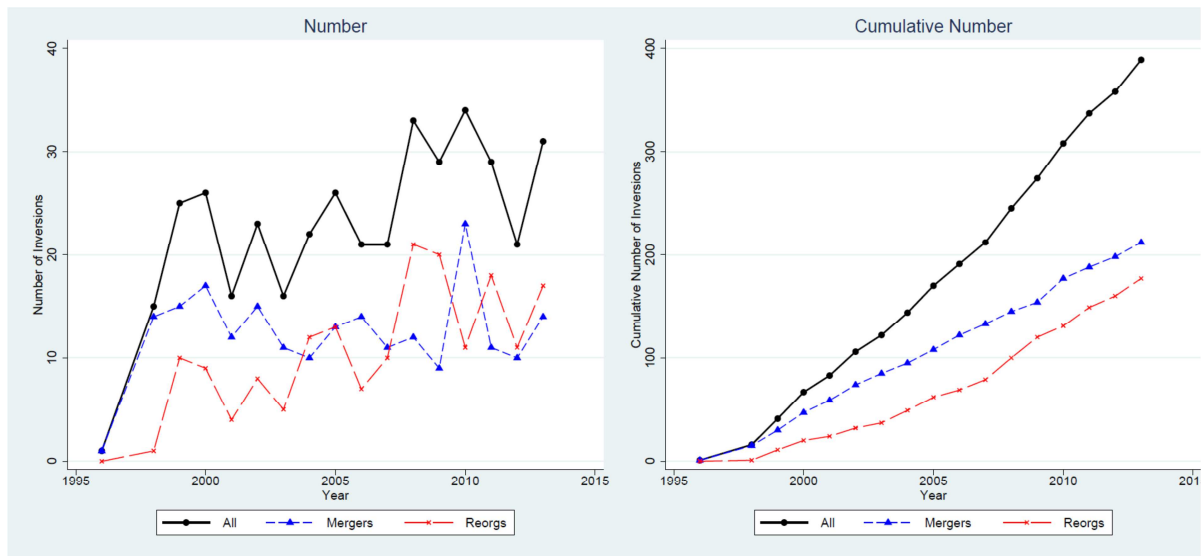
|                   | (1)<br>1 if inverted;<br>0 otherwise | (2)                   | (3)<br>1 if inverted via merger;<br>0 otherwise | (4)                   | (5)<br>1 if inverted via reorg;<br>0 otherwise | (6)                   | (7)<br>1 if inverted to tax-haven;<br>0 otherwise | (8)                   |
|-------------------|--------------------------------------|-----------------------|---|-----------------------|--|-----------------------|---|-----------------------|
| Ln(\$TA)          | -0.021<br>(0.0126)                   | -0.025**<br>(0.0118)  | 0.046***<br>(0.0121)                            | 0.051***<br>(0.0109)  | -0.157***<br>(0.0292)                          | -0.192***<br>(0.0254) | -0.073***<br>(0.0223)                             | -0.084***<br>(0.0214) |
| Total Debt Ratio  | 0.234**<br>(0.0923)                  | 0.171*<br>(0.0896)    | 0.091<br>(0.1066)                               | -0.027<br>(0.1029)    | 0.471**<br>(0.2070)                            | 0.534***<br>(0.1638)  | 0.844***<br>(0.1467)                              | 0.737***<br>(0.1401)  |
| Interest Expense  | 0.082<br>(0.0548)                    | 0.074<br>(0.0492)     | 0.039<br>(0.0650)                               | 0.052<br>(0.0602)     | 0.182**<br>(0.0926)                            | 0.138*<br>(0.0737)    | 0.090<br>(0.0809)                                 | 0.069<br>(0.0747)     |
| Cash              | 0.336***<br>(0.1186)                 | 0.354***<br>(0.1170)  | 0.856***<br>(0.1406)                            | 0.872***<br>(0.1371)  | -0.222<br>(0.2662)                             | -0.253<br>(0.2456)    | -0.173<br>(0.1771)                                | -0.202<br>(0.1776)    |
| Cash Flow         | -0.015**<br>(0.0074)                 | -0.011<br>(0.0076)    | -0.009<br>(0.0086)                              | -0.001<br>(0.0085)    | -0.015<br>(0.0114)                             | -0.021*<br>(0.0111)   | -0.016*<br>(0.0095)                               | -0.017*<br>(0.0100)   |
| Sales             | -0.126***<br>(0.0408)                | -0.102***<br>(0.0383) | 0.054<br>(0.0405)                               | 0.069*<br>(0.0376)    | -0.403***<br>(0.1067)                          | -0.409***<br>(0.1020) | -0.290***<br>(0.0640)                             | -0.269***<br>(0.0606) |
| Q                 | -0.001<br>(0.0043)                   | -0.001<br>(0.0042)    | 0.003<br>(0.0045)                               | 0.004<br>(0.0044)     | -0.014<br>(0.0132)                             | -0.014<br>(0.0125)    | -0.020**<br>(0.0087)                              | -0.015*<br>(0.0085)   |
| Dividend Yield(%) | -0.029<br>(0.0189)                   | -0.038**<br>(0.0166)  | -0.008<br>(0.0079)                              | -0.027*<br>(0.0162)   | -0.148***<br>(0.0539)                          | -0.057***<br>(0.0190) | -0.420***<br>(0.1115)                             | -0.305***<br>(0.0932) |
| ROA               | 0.001<br>(0.0010)                    | 0.001<br>(0.0010)     | -0.002<br>(0.0011)                              | -0.002**<br>(0.0011)  | 0.006**<br>(0.0024)                            | 0.007***<br>(0.0023)  | 0.001<br>(0.0017)                                 | 0.002<br>(0.0017)     |
| Fixed Assets      | 0.095<br>(0.1061)                    | 0.212**<br>(0.1016)   | 0.369***<br>(0.1344)                            | 0.538***<br>(0.1261)  | 0.275<br>(0.2376)                              | 0.192<br>(0.1643)     | 0.161<br>(0.1289)                                 | 0.112<br>(0.1286)     |
| Intangible        | 0.161<br>(0.1210)                    | 0.304***<br>(0.1167)  | 0.705***<br>(0.1450)                            | 0.785***<br>(0.1393)  | -0.352<br>(0.2620)                             | -0.122<br>(0.2140)    | 0.067<br>(0.1812)                                 | 0.173<br>(0.1731)     |
| Insider %         | -0.002*<br>(0.0008)                  | -0.005***<br>(0.0008) | -0.000<br>(0.0009)                              | -0.003***<br>(0.0009) | -0.003*<br>(0.0021)                            | -0.007***<br>(0.0018) | -0.006***<br>(0.0018)                             | -0.008***<br>(0.0017) |
| ADR               | 0.265***<br>(0.0703)                 | 0.113*<br>(0.0650)    | -0.025<br>(0.0936)                              | -0.266***<br>(0.0890) | 0.945***<br>(0.1385)                           | 0.944***<br>(0.1080)  | 0.392***<br>(0.1251)                              | 0.305***<br>(0.1090)  |
| ETR               | 0.025<br>(0.0742)                    |                       | -0.094<br>(0.0817)                              |                       | 0.440***<br>(0.1116)                           |                       | 0.227**<br>(0.1052)                               |                       |
| % Tax (OD)        |                                      | 0.005**<br>(0.0019)   |   | 0.009***<br>(0.0026)  |  | -0.007***<br>(0.0020) |   | 0.008**<br>(0.0032)   |
| Sector FEs        | Yes                                  | Yes                   | Yes   | Yes                   | Yes  | Yes                   | Yes   | Yes                   |
| Year FEs          | Yes                                  | Yes                   | Yes   | Yes                   | Yes  | Yes                   | Yes   | Yes                   |
| Country FEs       | Yes                                  | No                    | Yes   | No                    | Yes  | No                    | Yes   | No                    |
| Observations      | 79,557                               | 99,079                | 76,596  | 95,979                | 18,416   | 63,912                | 42,420  | 60,980                |



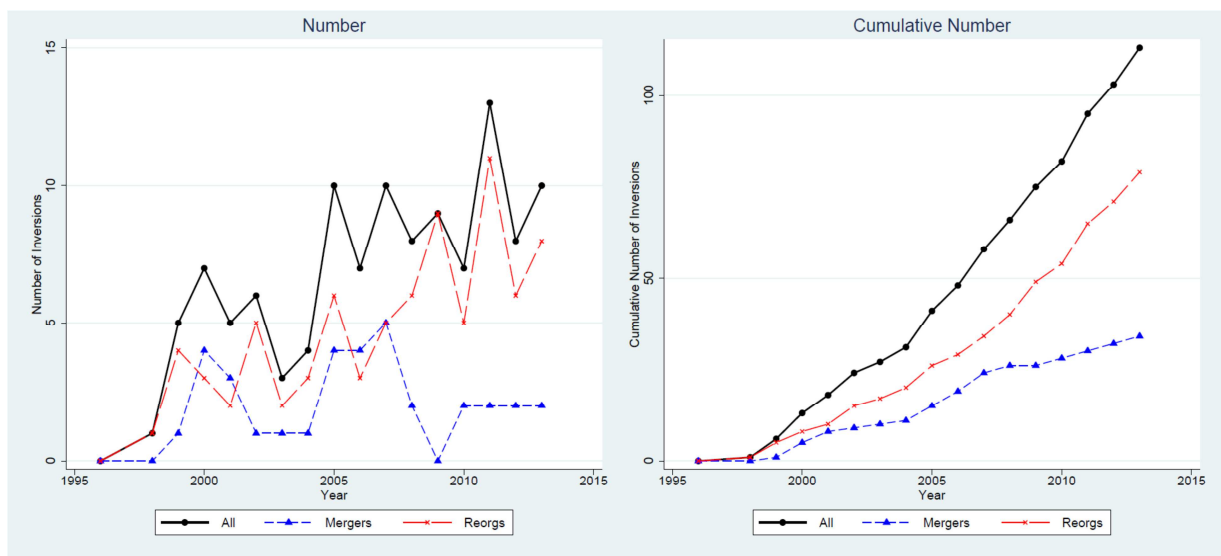
**Figure 1: Number of Corporate Cross-Border Inversions over time**

This figure shows the evolution of cross-border corporate inversions between 1996 and 2013. Panel A focuses on the full sample of inversions. Panel B focuses on the subset of firms for which the (Host) is a tax haven where tax havens are territories listed in Desai et al. (2009). Panel C shows inversions into tax havens as a percentage of all inversions. In each Panel, yearly observations are depicted on the left; cumulative observations are depicted on the right.

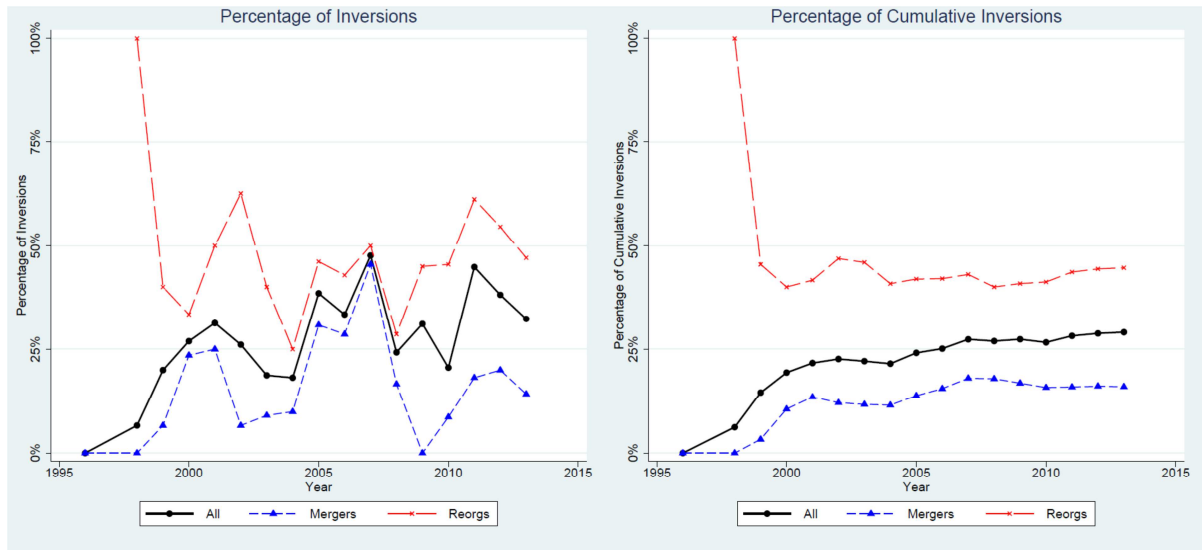
**Panel A: Inversions over Time**



**Panel B: Inversions into Tax Havens**

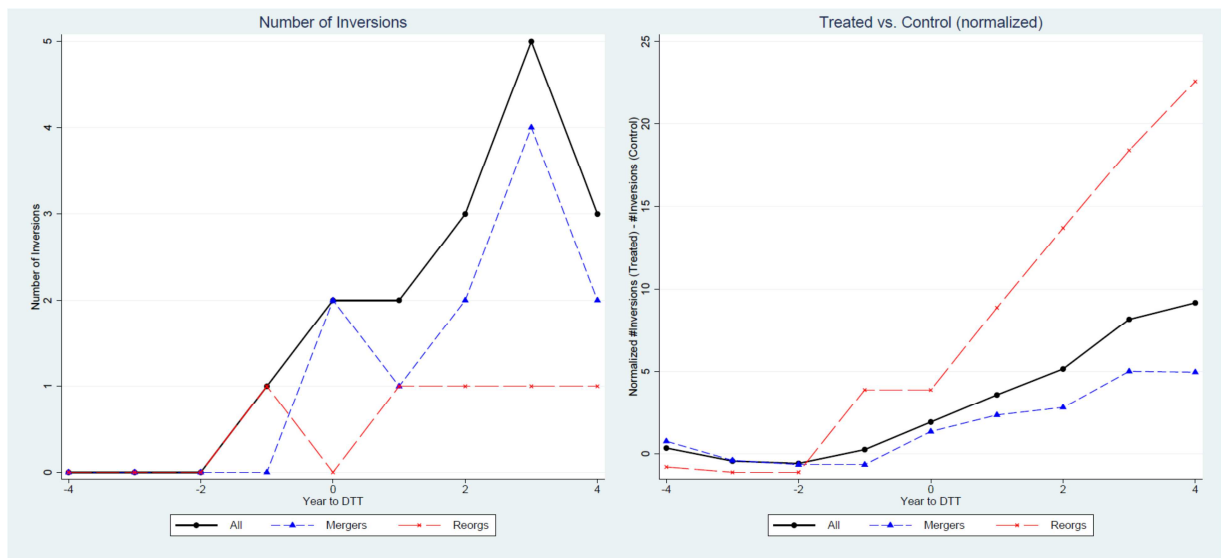


### Panel C: Percentage of Tax-Haven Inversions



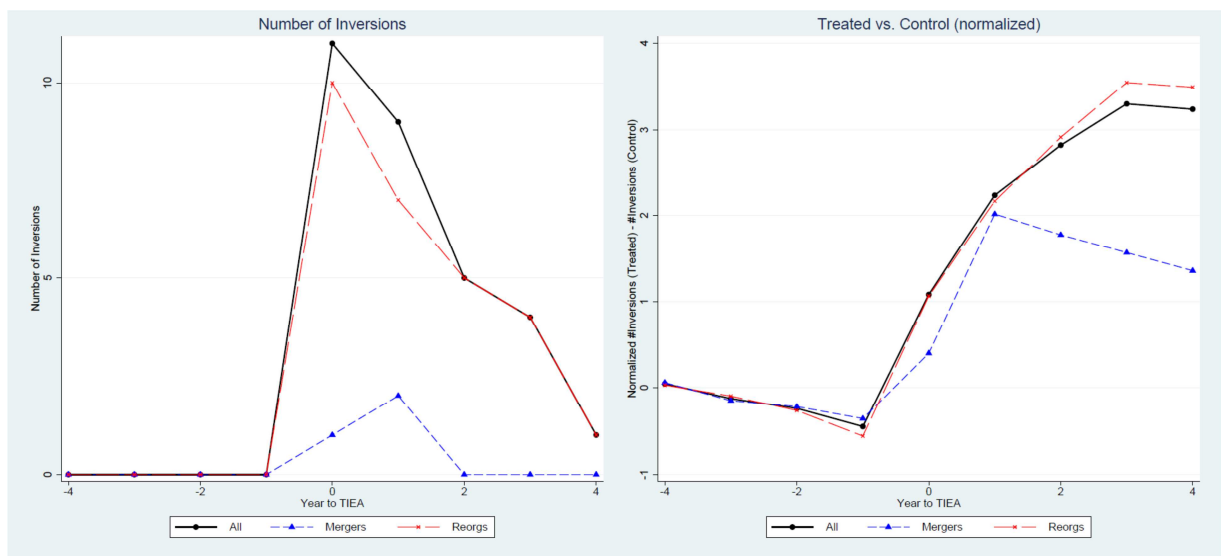
**Figure 2: Number of Inversions around passage of Double Taxation Treaties (DTTs)**

This figure shows the evolution of corporate cross-border inversions around passage of Double Taxation Treaties (DTTs). The list of bilateral DTTs is obtained from the United Nations Conference on Trade and Development (UNCTAD). The left panel depicts the number of inversions between two signatory countries in the years prior and after signing a DTT. The right panel compares the evolution of inversions between country pairs affect by DTTs (*treated*) and country pairs unaffected by DTTs (*control*). Treated pairs are pairs of countries that signed DTTs. Control pairs are pairs of (Home) countries and other countries that never signed a DTT.



**Figure 3: Number of Inversions around passage of Tax Information Exchange Agreements (TIEAs)**

This figure shows the evolution of corporate cross-border inversions around passage of Tax Information Exchange Agreements (TIEAs). The list of bilateral TIEAs is obtained from the OECD. The left panel depicts the number of inversions between one signatory country (non-tax haven) and another signatory country (tax haven) in the years prior and after signing a TIEA. The right panel compares the evolution of inversions between country pairs affect by TIEAs (*treated*) and country pairs unaffected by TIEAs (*control*). Treated country pairs are those pairs of countries that signed a TIEA. Control pairs are pairs of countries where one country is a non-haven that signed a TIEA and the other country is a haven with whom no TIEA was signed. The number of inversions in the treated and control sample are normalized by the average number of inversions prior to passage of TIEAs.



## Appendix A.

**Table A1. Variable definitions and sources**

| Variable                   | Definition   | Source  |
|----------------------------|--|---|
| <b>Dependent Variables</b> |  |   |
| Inversion (Dummy)          | Dummy equals 1 if nobs (number of reincorporations) is greater than zero, zero otherwise   | SIX Financial   |
| nobs_tod                   | Number of reincorporations in a year divided by total reincorps from (Home) (tod)  | SIX Financial   |
| nobs_tnd                   | Number of reincorporations in a year divided by total reincorps into (Host) (tnd)  | SIX Financial   |
| nobs_todnd                 | Number of reincorporations in a year divided by total reincorps involving either one of the country-pair (tod+tnd)   | SIX Financial   |
| dum_merger                 | Dummy equals 1 if nobs_merger (number of mergers) is greater than zero, zero otherwise   | SIX Financial   |
| dum_reorg                  | Dummy equals 1 if nobs (number of reorganisations) is greater than zero, zero otherwise  | SIX Financial   |
| <b>Country-level</b>       |  |   |
| DTT (Dummy)                | Dummy equals 1 if a double tax treaty exists between the country pair, zero otherwise  | UNCTAD  |
| TIEA (Dummy)               | Dummy equals 1 if a Tax Information Exchange Agreement exists between the country pair, zero otherwise   | OECD  |
| Import Ratio               | Ratio of imports between OD and ND to total imports by OD  | COMTRADE  |
| Export Ratio               | Ratio of exports between OD and ND to total imports by OD  | COMTRADE  |
| Geographic Distance        | The Great Circle Distance between the capitals of countries i and j. We obtain latitude and longitude of capital cities of each country. We then apply the standard formula: $3963.0 * \arccos [\sin(\text{lat1}) * \sin(\text{lat2}) + \cos(\text{lat1}) * \cos(\text{lat2}) * \cos(\text{lon2} - \text{lon1})]$ , where lon and lat are the longitudes and latitudes of the acquirer country ("1" suffix) and the target country ("2" suffix) locations, respectively. | <a href="http://www.mapsofworld.com/utilities/world-latitude-longitude.htm">http://www.mapsofworld.com/utilities/world-latitude-longitude.htm</a> |
| Corruption                 | Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.   | WGI, Worldbank (Kaufmann et al.(2009))  |

|                          |  |  |
|--------------------------|--|--|
| Voice and Accountability | Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.  | WGI, Worldbank (Kaufmann et al.(2009)) |
| Political Stability      | Reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.  | WGI, Worldbank (Kaufmann et al.(2009)) |
| Government Effectiveness | Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.   | WGI, Worldbank (Kaufmann et al.(2009)) |
| Regulatory Quality       | Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.  | WGI, Worldbank (Kaufmann et al.(2009)) |
| Rule of Law              | Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.  | WGI, Worldbank (Kaufmann et al.(2009)) |
| GDP per capita           | Gross domestic product per capita measured in 2007 U.S. dollars. Data frequency is annual.   | WDI, Worldbank                         |
| GDP growth               | Average annual real growth rate of the gross domestic product in 2007 U.S. dollars. Data frequency is annual.  | WDI, Worldbank                         |
| % Market Capitalization  | Calculated as the share price times the number of shares outstanding scaled by GDP. Data frequency is annual.  | WDI, Worldbank                         |
| % Turnover               | Annual stock market turnover defined as trading volume divided by number of float shares.  | WDI, Worldbank                         |
| Anti-self dealing Index  | An index of anti-self-dealing is formed by taking the average of ex ante and ex post private control of self-dealing indices. The index of ex ante control of self-dealing transactions is an average of approval by disinterested shareholders and ex ante disclosure. The index of ex post control of self-dealing transactions is an average of disclosures in periodic filings and ease of proving wrongdoing. | Djankov et al. (2008)                  |

|                        |  |   |
|------------------------|--|---|
| Creditor rights        | An index aggregating creditor rights. A score of 1 is assigned when each of the following rights of secured lenders are defined in laws and regulations: (1) there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization; (2) secured creditors are able to seize their collateral after the reorganization petition is approved, i.e., there is no automatic stay or asset freeze; (3) secured creditors are paid first out of the proceeds of liquidating a bankrupt firm, as opposed to other creditors such as government or workers; and (4) management does not retain administration of its property pending the resolution of the reorganization. This index ranges from 0 (weak creditor rights) to 4 (strong creditor rights) | Bankruptcy and reorganization laws, Djankov et al. (2007)   |
| Merger Quality Index   | Assigns a value of 1 to a country with: pre-merger notification requirements, post-merger notification requirements, mandatory nature of the pre-merger notification and penalties imposed for lack of notification.   | Bris et al. (2010), White and Case 2003-2004 Edition of the Worldwide Antitrust Merger Notification Requirements, Cicero (2001), National Regulators, and ISSA Handbook |
| Antitrust Law (Dummy)  | Dummy equals 1 if antitrust laws are in place, zero otherwise  | Bris et al. (2010), White and Case 2003-2004 Edition of the Worldwide Antitrust Merger Notification Requirements, Cicero (2001), National Regulators, and ISSA Handbook |
| Merger Law (Dummy)     | Dummy equals 1 if merger laws are in place, zero otherwise   | Bris et al. (2010), White and Case 2003-2004 Edition of the Worldwide Antitrust Merger Notification Requirements, Cicero (2001), National Regulators, and ISSA Handbook |
| Exchange Rate Return   | Annual change in exchange rates where base currency is the Euro.   | Datastream  |
| Market Return          | Calculated as the average annual dollar return (in %) on the MSCI country index  | Datastream  |
| Tax Old (New) Domicile | Corporate Tax in Old (New) Domicile  | KPMG, OECD and various websites   |
| ND Tax Haven           | Dummy equals 1 if (Host) is a tax haven, zero otherwise  | Desai Dharmapala (2009)   |
| <b>Firm-level</b>      |  |   |
| Total Assets           | \$ Millions- measured in logs  | Worldscope, Capital IQ  |
| Total Debt Ratio       | Total liabilities divided by total assets  | Worldscope, Capital IQ  |
| Interest Expense       | Interest expense divided by EBIT   | Worldscope, Capital IQ  |
| Current Ratio          | Current assets divided by total assets   | Worldscope, Capital IQ  |
| Cash                   | Cash divided by total assets   | Worldscope, Capital IQ  |
| Cash Flows             | Cash flows divided by sales  | Worldscope, Capital IQ  |
| Sales                  | Sales divided by total assets  | Worldscope, Capital IQ  |
| MTB                    | Price divided by book value per share  | Worldscope, Capital IQ  |
| Dividend Yield         | Dividend divided by price  | Worldscope, Capital IQ  |
| EPS                    | Net income divided by shares outstanding   | Worldscope, Capital IQ  |
| ROA                    | Net income divided by total assets   | Worldscope, Capital IQ  |
| ROE                    | Net income divided by total equity   | Worldscope, Capital IQ  |

|                       |  |                        |
|-----------------------|--|------------------------|
| Tobin's Q             | Market value of equity plus total assets minus Book value of equity, all divided by total assets   | Worldscope, Capital IQ |
| R&D Expense           | Research and development expense divided by total assets   | Worldscope, Capital IQ |
| Net Fixed Assets      | Property, plant and equity divided by total assets   | Worldscope, Capital IQ |
| Investment            | Capital expenditures divided by total assets   | Worldscope, Capital IQ |
| Intangible Assets     | Intangible assets divided by total assets  | Worldscope, Capital IQ |
| Insider Ownership (%) | It represents shares held by insiders. It includes but is not restricted to: shares held by officers, directors, and their immediate families; shares held in trust; shares of the company held by any other corporation; shares held by pension/benefit plans; shares held by individuals who hold 5% or more of the outstanding shares. It excludes: shares under option exercisable within 60 days; shares held in a fiduciary capacity; preferred stock or debentures that are convertible into common shares. For Japanese firms, it represents the holdings of the 10 largest shareholders. For companies with more than one class of common stock, closely held shares for each class are added together. | Worldscope, Capital IQ |
| Foreign Sales         | Sales from foreign operations divided by total sales   | Worldscope, Capital IQ |
| Foreign Income        | Income from foreign operations divided by total income   | Worldscope, Capital IQ |
| ETR                   | Effective tax rate-total income tax expense divided by income before taxes   | Worldscope, Capital IQ |
| Age                   | Number of years since it was founded. If foundation year is missing number of years since base year.   | Worldscope, Capital IQ |
| Sales per Employee    | Sales divided by number of employees   | Worldscope, Capital IQ |
| Employees             | Number of employees  | Worldscope, Capital IQ |