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WU International Taxation Research Paper Series

No. 2016 - 06

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Research Papers

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Abstract:

This paper empirically tests a theory laid out in Scholes et al. (2015, p. 315) that the U.S. worldwide tax system reduces the incentive of U.S. parent companies to be tax aggressive in their foreign subsidiaries. Investors subject to a worldwide tax system pay taxes on their worldwide income, regardless of the origin thereof. Therefore, a U.S. investor pays the difference between the effective tax payment abroad and the higher U.S. statutory tax when profits are repatriated. In contrast, investors subject to territorial tax systems gain the full tax savings from being tax aggressive abroad. Our results show that U.S.-owned foreign subsidiaries have a by 1.2 percentage point higher average GAAP effective tax rate (ETR) compared to subsidiaries owned by foreign investors from countries with a territorial system. We contribute to the literature by showing a mechanism, other than cross-country profit shifting, why U.S. multinational companies have higher GAAP ETRs than multinationals subject to territorial tax systems.

Keywords: *Foreign subsidiaries; Tax aggressiveness; Tax avoidance; Territorial tax system; Worldwide tax system*

JEL classification: H25, H26, H32

1 Introduction

It is well documented that multinationals shift income across jurisdictions (Dischinger and Riedel 2011; Dyreng and Lindsey 2009; Klassen and Laplante 2012; Newberry and Dhaliwal 2001, among others). Markle (2016) shows that parent companies subject to worldwide tax systems shift income to a lesser extent than parent companies subject to territorial systems. Under a worldwide system with deferral (as implemented in the United States), firms pay taxes on their worldwide income when dividends are repatriated regardless of the origin thereof, whereas countries with a territorial system exempt foreign-source income from taxation.[1] To avoid double taxation, tax authorities in worldwide tax systems grant a credit for taxes paid in a foreign jurisdiction (foreign tax credit). Less income shifting by parent companies subject to worldwide tax systems can be interpreted as being less tax aggressive *across* jurisdictions. However, the reduced incentive to be less tax aggressive across jurisdictions, as documented by Markle (2016), is not the only incentive arising from worldwide tax systems.

We test whether U.S. multinationals are less tax aggressive *within* jurisdictions where their foreign subsidiaries are located, when the statutory tax rate in a subsidiary's home country is lower than the U.S. statutory tax rate. This theory was laid out in Scholes et al. (2015, p. 315). The rationale is that a U.S. investor pays the difference between the tax payment abroad and the U.S. statutory tax rate when profits are repatriated, whereas investors located in countries with territorial tax systems gain the full tax savings from being tax aggressive abroad. Thus, the benefit of tax aggressiveness of foreign U.S.-owned subsidiaries is absent or reduced. We focus

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[1] Some countries technically apply a worldwide system, but are usually classified as applying a territorial system, as the majority of foreign dividends are exempted from taxation (e.g. Germany taxes 5% of foreign dividends at the statutory tax rate).

our analyses on U.S.-owned foreign subsidiaries, as, currently, the United States is the only member of the G8 that has a worldwide tax system.

Our research question implies that we focus on the tax positions taken by multinationals' foreign affiliates. Thus, we are interested in differences in the tax aggressiveness of foreign affiliates. Tax aggressiveness is a broad concept that is influenced by international tax minimization strategies, such as income shifting, and by pursuing domestic tax minimization strategies, such as claiming bonus depreciation or choosing a domestic location for a foreign affiliate that minimizes regional taxes and surcharges. While there is no doubt that multinationals shift income to jurisdictions with low tax rates, all income (including the shifted income) will eventually be taxed, although the tax rate in tax havens might be close to zero. However, due to constraints on income shifting (e.g. the arm's length principle, CFC rules), most foreign subsidiaries still pay tax in the jurisdiction where they are located, and anecdotal evidence of multinationals not paying any taxes is rather the exception than the rule.[2] Thus, we investigate whether multinationals' foreign subsidiaries have different outcomes of tax aggressiveness incentivized by their parents' being subject to either a worldwide tax system or a territorial tax system. We choose GAAP effective tax rates (ETRs) as our measure to quantify ex post the extent of aggressive tax positions taken by foreign affiliates.[3]

It is not obvious that U.S. multinationals are less tax aggressive in their foreign subsidiaries because the U.S. worldwide tax system offers the possibility to defer additional home country taxation until dividends are repatriated. There is a political debate as to whether

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[2] Dyreng, Lindsey, Markle, and Shackelford (2015) show that tax considerations affect the location of foreign equity affiliates, as firms minimize the tax burden along the equity supply chain. The authors argue that firms would not bear the additional costs associated with setting up tax-efficient equity supply chains if profit shifting were as effective as indicated by anecdotal evidence in the press (Dyreng et al. 2015). In line with that, we observe that U.S.-owned subsidiaries are slightly more profitable than German firms without the possibility to shift income across jurisdictions (German stand-alone firms).

[3] We cannot use cash effective tax rates, as European firms are not required to publish cash flow statements for their unconsolidated statements.

U.S. multinationals act as if they were subject to a territorial system because there is the possibility to defer taxation until repatriation, and in that way multinationals can wait for another tax holiday to circumvent repatriation taxes. Recent media attention on tax avoidance strategies of, for example, Apple, Amazon, Google, and Starbucks which build up large amounts of cash overseas, corroborates the notion that multinationals do not intend to repatriate unless another tax holiday arises.[4] For these highly profitable multinationals this is a superior strategy, as their costs of issuing debt to refinance their activities within the United States are historically low – and lower than the repatriation taxes (Dyreng and Markle 2015). This suggests that we should not be able to see any (or at least only very small) differences in the tax aggressiveness of U.S.- and non-U.S.-owned subsidiaries.

To study whether U.S.-owned subsidiaries are less tax aggressive than other foreign subsidiaries, we use *unconsolidated financial* statements of European private firms owned by foreign shareholders. We start with a detailed analysis of U.S.-owned subsidiaries in Germany,[5] and our results suggest that subsidiaries of U.S. investors have approximately a 1.2 percentage point higher average GAAP effective tax rate (ETR) compared to subsidiaries of foreign investors located in countries with a territorial system. Furthermore, the higher ETR is driven by subsidiaries where both the ultimate and the immediate parent are incorporated in the United States.

We verify that the German finding holds in other European countries. In a sample of seven European countries with sufficient data and tax burden (domestic statutory tax rate plus

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[4] In line with that, U.S. multinationals use the locked-out cash for foreign acquisitions that are not necessarily value-enhancing (Hanlon, Lester, and Verdi 2015; Edwards, Kravet, and Wilson 2016).

[5] Choosing Germany as our main setting is particularly useful as (i) there is a high book-tax alignment for unconsolidated financial statements, (ii) Germany is not considered a tax haven, (iii) private firm data with a high degree of detail are available, and (iv) U.S. investors (worldwide tax system) face a higher domestic tax rate than the German effective tax rate.

withholding tax according to income tax treaties) below the U.S. statutory tax rate of 35% (Austria, Denmark, Finland, Germany, Ireland, Italy, and Sweden), we find in each country that U.S.-owned subsidiaries are less tax aggressive compared to other foreign subsidiaries.

Belgium, France, Norway, and Spain have a statutory tax burden for U.S.-owned subsidiaries exceeding the U.S. statutory tax rate. In this case, U.S.-owned subsidiaries are expected to be less tax aggressive only if their average foreign effective tax rate exceeds the U.S. statutory tax rate, as the U.S. tax system features an overall limitation on the foreign tax credit. However, U.S.-owned subsidiaries are *less likely* to pay additional taxes upon repatriation in these countries, and we expect to find U.S.-owned subsidiaries to be as tax aggressive as other foreign-owned subsidiaries. In fact, we find in two countries (Belgium and France) that U.S. investors are as tax aggressive as all other investors. In Norway and Spain, we find the same results as in the countries with a statutory tax rate below 35%. This indicates that, on average, U.S. parents investing in Belgium and France have an average foreign effective tax rate exceeding 35%.

Next, we investigate U.S. parent companies that have investments in Belgium and/or France (>35%) and an investment in a country with a statutory tax rate below 35%. For these multinationals, the average foreign tax rate is likely to be below 35%, and we find that subsidiaries owned by these U.S. investors are less tax aggressive in Belgium and France than subsidiaries owned by other foreign investors. Conversely, when U.S. investors have a subsidiary only in Belgium or France, they are statistically significantly *more* tax aggressive. Thus, U.S. investors respond to their foreign average effective tax rate – which is in line with the overall limitation on foreign tax credits under the U.S. worldwide tax system.

In further results and robustness tests, we find similar results for subsidiaries from the United Kingdom and Japan prior 2009 when both countries had a worldwide tax system in place.

Furthermore, we show that the results are not affected by different thresholds for the definition of a foreign U.S. subsidiary (e.g. 75% instead of 100% ownership), the use of long-run ETRs, characteristics of the parent companies, the existence of tax-loss carryforwards, or when we compare U.S.-owned subsidiaries only to Canadian-owned subsidiaries.

Our results are economically meaningful. The "excess" tax payments of U.S.-owned subsidiaries account, on average, for a reduction in return on equity of 0.5 percentage points per annum, neglecting potential costs of tax aggressiveness. Thus, U.S. investments into foreign subsidiaries are disadvantaged compared to investments from countries with a territorial tax system. We contribute to the literature in three ways. First, our results suggest that the tax system to which the parent company is subject and its interplay with foreign tax systems shapes tax-relevant decisions of multinationals and their subsidiaries. In line with the theory provided by Scholes et al. (2015), we show that a worldwide tax system not only affects income shifting (Atwood, Drake, Myers, and Myers 2012; Markle 2016), but also provides incentives for those subsidiaries operating abroad to be less tax aggressive.

Second, our findings contradict the assertions seen in the political debate that U.S. multinationals act as if they were in a territorial system because they can defer home country taxation by declaring profits earned abroad as permanently reinvested. If this were the case, subsidiaries with U.S. investors should be as tax aggressive as subsidiaries with investors from any other country.

Finally, our paper contributes to the academic, political, and public media discussion revolving around the costs and benefits of a worldwide versus territorial tax system. On the one hand, some studies document benefits of a worldwide tax system, such as decreased incidence of income shifting *across* jurisdictions (Atwood et al. 2012; Markle 2016). On the other hand, the worldwide tax system with deferral triggered unintended consequences since multinationals

accumulate large amounts of cash overseas waiting for being repatriated when another U.S. tax holiday comes (Fleischer 2012; Kocieniewski 2011; Linebaugh 2012). We show that U.S.-owned subsidiaries are less tax aggressive *within* jurisdictions as indicated by higher ETRs in foreign jurisdiction. In turn this reduces the amount the U.S. tax authority gains when profits are repatriated. Thus, the reduced tax aggressiveness of subsidiaries is a windfall profit for the tax authorities of the subsidiary's home country.

This paper is organized as follows. Section 2 explains the institutional setting and develops the hypothesis. Section 3 (4) explains the research design and findings on the German (European) sample and section 5 contains robustness tests and further results. Section 6 concludes.

2   Institutional Setting and Hypothesis Development

In cross-border economic activities, three layers of taxation apply to the profit transfer from a foreign subsidiary to a parent company. First, the foreign country levies corporate income tax on the profit of the subsidiary (t_{sub}). Second, in case that the subsidiary distributes dividends, the foreign tax authority levies withholding taxes on the dividend distribution (t_{wth}). Third, the home country of the parent can tax the dividends and grants a credit for taxes paid abroad (worldwide system, t_{par}) or exempts the dividends from tax (territorial system). Thus, in case that a worldwide country grants a credit for the taxes paid by the subsidiary and the withholding taxes, the tax burden is characterized by the following expression:

$$\max\{t_{sub} + (1 - t_{sub}) * t_{wth} ; t_{par}\}. \tag{1}$$

In case of a territorial system the tax burden on dividend distributions amounts to:

$$t_{sub} + (1 - t_{sub}) * t_{wth}. \tag{2}$$

As can be seen from the two equations, the tax burden of the two alternatives differs when the tax rate in the parent's home country is higher than the corporate income tax rate in the subsidiary's home country plus withholding tax on dividend distributions. In this case, additional home country taxation occurs when dividends are repatriated which provides a disincentive to repatriate profits earned abroad. This is often the case if a firm is owned by U.S. investors since (i) the U.S. is the only G8 member with a worldwide tax system and (ii) the U.S. statutory tax rate of 35% is higher than tax rates in most other countries.

A few studies address the impact of foreign tax credits on multinationals' behavior. Collins and Shackelford (1992) find that more stringent foreign tax credit limitations and interest allocation rules after the Tax Reform Act 1986 are associated with more preferred stock for U.S. multinationals. Collins, Kemsley, and Lang (1998) investigate income shifting behavior of U.S. multinationals in response to the average tax rates these multinationals face abroad. While their results indicate that there is little evidence of income shifting out of the U.S., they find that multinationals with average foreign tax rates exceeding the U.S. tax rate shift approximately $25-30 million of income per company into the U.S. per year.

The U.S. worldwide tax system defers taxation of foreign profits until repatriation and the concept of permanently reinvested earnings allows for not recognizing deferred tax liabilities for *financial accounting purposes*. Thus, foreign tax credits are only applicable if a U.S. multinational's subsidiary abroad distributes dividends. Desai, Foley, and Hines (2007) identify taxation of dividend income, domestic financing and investment needs, and agency problems as the three factors that shape dividend policy within the multinational firm. The U.S. worldwide tax system with a high corporate income tax provides an incentive not to repatriate dividends. The incentive increases if firms are less financially constrained and more technology intensive (Albring, Mills, and Newberry 2011; Foley, Hartzell, and Titman 2007). Another consequence is

high cash holdings abroad of U.S. multinationals. Hanlon et al. (2015) show that locked-out cash is associated with foreign acquisitions.

Blouin and Krull (2009) document that in case of no or low tax costs associated with dividend repatriation, multinationals with lower investment opportunities and higher free cash flows repatriate dividends. The repatriating multinationals use the cash for share repurchases. Graham, Hanlon, and Shevlin (2010) report that more than 60% of the funds repatriated at the reduced rate introduced by the American Jobs Creation Act 2004 were obtained from cash holdings abroad. Dharmapala, Foley, and Forbes (2011) suggest that the increased repatriations are only associated with additional shareholder payouts for multinationals with strong corporate governance. Finally, Desai, Foley, and Hines (2001) compare incorporated and non-incorporated affiliates. Their results suggest that aggregate dividend payouts would increase by 12.8% if the U.S. adopted a territorial tax system. Summing up, the literature so far is concerned with dividend policies within multinational groups but not with impact of the worldwide tax system in the parent's home country on the tax planning behavior of the subsidiaries operating abroad. We aim at closing this gap by comparing U.S.-owned subsidiaries with subsidiaries owned by investors from other countries.

Because of the worldwide tax system and the high U.S. tax rate we argue that U.S.-owned subsidiaries are less tax aggressive than subsidiaries from countries with a territorial system. The rationale for this is that if U.S. investors repatriate foreign earnings, they will pay the higher U.S. tax rate eventually.[6] Generally, the decision to engage in aggressive tax strategies depends on the

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[6] As the United States applies an overall limitation, the foreign tax credit rules allow a balancing of profits obtained from countries with higher and lower tax rates than the U.S. tax rate. Thus, the weighted average tax rate of all foreign operations is relevant to determine whether a U.S.-owned subsidiary is supposed to be less tax aggressive than non U.S.-owned subsidiaries. The above-described scenario, however, is applicable only to active income. Passive income (e.g. from rental activities or businesses in which the taxpayer does not materially participate) can be balanced only with other passive income.

costs and benefits for the involved parties. Tax savings lead to rent extraction for shareholders and to higher salaries/bonuses for managers if the interests of both groups are aligned. Whereas the benefits are obvious, the costs of tax avoidance can be direct or indirect. Direct costs are, for example, the costs of establishing complex tax structures within the group, as well as payments for tax advisors. Indirect costs are, for example, the increased likelihood of sanctions from the tax authorities and reputational costs. Assuming that multinationals have scarce resources and the benefit of tax aggressiveness of subsidiaries owned by U.S. investors is reduced, these investors might have fewer incentives to avoid taxes in the foreign subsidiary. However, the U.S. worldwide tax system offers the possibility to defer additional home country taxation until dividends are repatriated and in that way multinationals can wait for another tax holiday to circumvent repatriation taxes. Thus, it is an empirical question as to whether U.S.-owned subsidiaries are less tax aggressive. We state our hypothesis as follows.

> **H**: U.S.-owned subsidiaries abroad are less tax aggressive than subsidiaries owned by investors from a country with a territorial system if the U.S. tax rate is above the foreign tax rate.

## 3	German Sample

Sample and Research Design

In theory, the average tax rate of all foreign operations is the correct comparison for the U.S. tax rate to decide upon being tax aggressive abroad. However, given the tax rate cuts in many countries, it is unlikely that U.S. multinationals face weighted average tax rates over all their foreign activities above the U.S. statutory tax rate. Thus, we are confident that a country by country analysis is feasible even though the U.S. foreign tax credit is computed using the overall limitation.

Data is gathered from Hoppenstedt and Orbis. We obtain financial statement data from the Hoppenstedt Database and shareholder data from the Orbis Database. As the data sets available to the authors do not have a common identifier, we match both data sets using the German Commercial Register Number (GCRN).

We use German unconsolidated financial statements until 2009, as private firm data are available and Germany features a high book-tax alignment for that time period (Pfaff and Schröer 1996). In 2010, new German GAAP was introduced and the book-tax conformity was reduced. We do not include data before 2005 since there is no shareholder information available to us. Thus, our sample period is 2005 – 2009.[7] Although there was a tax cut in Germany effective in 2008, the *average effective tax rate* of the sample is below 35% in all years.

We limit the shareholder data to shareholdings from corporations. We delete subsidiaries with negative pretax income in order to calculate the effective tax rates. Furthermore, we delete observations with missing data on total assets, net income, and tax expense. The final sample consists of 4,199 firm-year observations of subsidiaries that are wholly-owned by foreign investors.

In Germany, unconsolidated statements are the basis for determining taxable profit. Thus, the unconsolidated financial statement captures the income generated in Germany that will be taxed by the tax authorities. However, differences between financial accounting and tax accounting arise from specific tax rules (Pfaff and Schröer 1996). Tax avoiding strategies are, for example, choosing the location of a subsidiary within Germany such that regionally variant taxes (local business taxes) are minimized, and minimizing non-tax deductible expenses. While it is hard to say which strategies the subsidiaries in our sample actually apply, tax audit statistics

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[7] Some missing shareholder-years were filled with information from the previous year. For example, if we observe the same shareholder in 2007 and in 2009, while 2008 is missing, we assume that the shareholder in 2008 is the same as in 2007. Thus, as soon as shareholder data are updated, we use the updated data.

published by the German Federal Ministry of Finance show that additional tax revenue of around €17.2 billion was raised in 2013 due to tax audits. This suggests that German firms take some aggressive tax positions which are not approved by the tax authorities. Therefore, our measure of tax aggressiveness is the result of all tax minimization strategies taken by the foreign subsidiary *within* the respective jurisdiction and thus a measure of the subsidiaries' tax aggressiveness. We cannot use cash-based tax avoidance measures, as European firms are not required to publish cash flow statements for their unconsolidated statements. Therefore, the effective tax rate is then computed as income tax plus deferred tax deflated by pretax income.[8]

$$ETR = (Income\ Tax + Deferred\ Tax)\,/\,PRETAX \tag{3}$$

The dependent variable is *ETR* and our main variable of interest is an indicator variable that takes on the value of one if a subsidiary is wholly owned by U.S. shareholders (*US100*). Furthermore, the models use the following control variables: return on assets (*ROA*), debt ratio (*DEBT*), intangible assets (*INTANG*), size measured as the logarithm of total assets (*SIZE)*, the ratio of property, plant and equipment over total assets (*PPE),* and *BIG5* is coded one if the respective company is audited by one of the five top auditors in Germany (BDO, Deloitte, EY, KPMG, PWC).[9] We do not control for application of International Financial Reporting Standards (IFRS) since German firms are required to use local GAAP for the unconsolidated statements.[10]

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[8] The German tax authorities make certain amendments to the profits of the unconsolidated statement. One of the most significant is that only 5% of the dividends are subject to taxation. Furthermore, the depreciation of shares in affiliated companies is not tax-deductible. To make sure that our measure of tax avoidance picks up *tax planning* and is not predominantly driven by systematic differences that result in permanent book-tax differences by default, we correct for both positions. Furthermore, ETRs are a meaningful measure of tax avoidance, only if the denominator is derived from financial accounting. If the denominator were the "true" taxable income, the effective tax rate would equal the statutory tax rate. Thus, we do not aim at computing the true taxable income, but correct only for positions which by default create permanent differences between financial and tax accounting, and thus cannot be classified as tax planning.

[9] In addition to the BIG4 auditing companies, BDO is often considered as among the top auditors in Germany.

[10] De Simone (2016) shows that the introduction of IFRS for unconsolidated statements in some European countries affected tax-motivated income shifting.

$$ETR_t = \beta_0 + \beta_1 * US100 + \sum_{i=2}^{X} \beta_i * controls + \varepsilon \qquad (4)$$

Panel A of Table 1 displays the descriptive statistics of our sample. 12.8% of the sample

is wholly-owned by U.S. investors (537 firm-year observations). The average tax rate is 31%.

Approximately 20% of the sample is audited by one of the Big5 auditing firms. As the sample is

limited to subsidiaries with pretax profits in order to compute tax rates, subsidiaries are on

average highly profitable. The average return on assets is 9.6%. Property, plant and equipment

account on average for 16.0% of total assets and intangible assets amount on average to

approximately 2%. Panel B and Panel C contain the descriptive statistics separately for U.S.- and

non-U.S.-owned subsidiaries. In line with our hypothesis, the average tax rate of U.S.-owned

subsidiaries is higher than the average tax rate of the control sample (31.7% vs. 30.8%). Pearson

and Spearman correlations are shown in Table 2. *US100* is positively but statistically

insignificantly correlated with *ETR*. *ETR* is significantly negatively correlated with profitability

(*ROA*).

Insert Table 1 and Table 2 here

Findings: Germany

The main results of the German sample are shown in Table 3. Standard errors are

clustered at the investor home country. In line with our hypothesis, Model 1 shows that fully

U.S.-owned subsidiaries have a statistically significant 1.2 percentage point higher tax rate than

subsidiaries from countries with a territorial system.[11] In Model 2 we control for other

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[11] Germany exhibited a corporate income tax rate cut of 10 percentage points in 2008 which we control for by using year fixed effects. Furthermore, we control for differences between legal forms because our sample of foreign-owned subsidiaries consists of *Gesellschaften mit beschränkter Haftung* (GmbH) – which are comparable to S corporations, and *Aktiengesellschaften* (AG) – which are comparable to C corporations. Both legal forms, however, entail limited liability.

determinants of tax aggressiveness and we include *NON_EU* which is coded one if the investor is located in a non-EU country, and zero otherwise. As U.S.-owned subsidiaries form part of the non-EU countries, the coefficient of *US100* can now be interpreted as the additional effect of the U.S. investor over and above the average effect of all non-EU countries. Thereby, we rule out that our results are driven by geographical distance or institutional knowledge assuming that investors from other non-EU countries have a similar knowledge of the German tax system.

The coefficient of 0.012 means that U.S.-owned subsidiaries pay 1.2 Euro-Cent (€0.012) more taxes on each Euro earned compared to other non-German subsidiaries. To give an economic magnitude, we calculate the reduction in return on equity due to the reduced tax aggressiveness of wholly U.S.-owned subsidiaries. We divide the "excess" tax payments of wholly U.S.-owned subsidiaries by the level of equity of these subsidiaries. Neglecting potential costs of tax planning, U.S.-owned subsidiaries lose, on average, 0.5 percentage points return on equity (*ROE*) per annum.

Insert Table 3 here

Models 3 and 4 contain cross-sectional tests. In Model 3 we include an indicator variable *IMM* that is coded one when the ultimate and immediate owner are located in the same country, and zero otherwise.[12] Foreign investors with a less complex group structure abroad might have fewer investment and refinancing opportunities, and are thus more likely to repatriate in a timely manner. Thus, it is less likely that these firms will wait for a tax holiday to avoid repatriation taxes, and that these subsidiaries will have a reduced incentive to be tax aggressive abroad. We

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[12] Unfortunately, we do not observe the full group structure. However, for approximately half of our observations we can control for whether the immediate owner is located in the same country as the ultimate owner. We have a subgroup of 257 U.S. subsidiaries where the ultimate owner and the immediate owner are incorporated in the United States.

expect and find higher ETRs within this subgroup where the immediate owner is located in the same country as the ultimate owner (see interaction *US100 * IMM*).

In Model 4, we include the variable *DIV*. The incentive of foreign subsidiaries to be less tax aggressive exists only if the subsidiaries actually pay out dividends. *DIV* is defined as the ratio of dividends to net income. We do not observe actual dividend payments, but we compute dividends as the net income of the current year minus the change in equity of the following year. This procedure reduces the sample size to 2,325 firm-year observations. Subsidiaries that pay dividends have a reduced incentive to avoid taxes because it is less likely that they will wait for a tax holiday. The interaction of *US100* and *DIV* has the expected sign, but the significance level is only close to conventional levels (P-Value: 0.148).

In Model 5, we match each U.S.-owned subsidiary based on all covariates with a subsidiary owned by investors from a country with a territorial system. Thus, we compare subsidiaries that are similar across all covariates and their only difference is the parent company's home country.[13] The matching algorithm reduces the sample to 361 U.S. firm-year observations and 361 control firms. Non-tabulated t-tests show that there are no statistical differences between the two groups. The findings are in line with the previous models.[14] Overall, the results of Table 3 show that U.S.-owned subsidiaries have a higher tax rate than subsidiaries that are owned by investors from countries with a territorial system.

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[13] We match without replacement and use a caliper of 5 percentage points for continuous variables and an exact matching for indicator variables. We find similar results if we use a propensity score matching design where the first stage models the likelihood of being a U.S. parent.
[14] We do not match the dependent variable, but match U.S. and non U.S. subsidiaries based on all covariates. Thus, the covariates still have variation and explanatory power for the dependent variable (for example, if profitability is negatively associated with the ETR in both the treatment and control groups).

Influence of the Parent

Parent company characteristics (e.g. firm size) may influence tax aggressiveness of subsidiaries abroad. Therefore, we use the shareholder identification number to include those characteristics. We obtain this information for 1,809 firm-year observations. Model 1 of Table 4 includes *US100* and tests whether U.S.-owned subsidiaries are less tax aggressive. We further control for the characteristics of the subsidiaries ("Sub Control: Yes"), and the displayed control variables are based on the parent companies, denoted by the subscript "p". Model 2 furthermore includes industry, legal form, and year fixed effects. The results show that the characteristics of the parent companies have only limited explanatory power, and the coefficient of *US100* remains positive and significant in all specifications.

Insert Table 4 here

4   European Sample

Sample and Research Design

We extend our analyses to other European countries. The time frame is in line with the German analysis (2005 to 2009). We limit the European sample to those countries where we have sufficient firm-level and shareholder data. This provides us with 85,348 firm-year observations for 11 countries. Similar to the German setting, we use unconsolidated financial statements in our European sample, as in Europe taxation is usually tied to unconsolidated financial statements. The sample includes only wholly-owned foreign subsidiaries in the respective countries.

Panel A of Table 5 reports summary statistics for the variables of the European sample. *ROA* and *SIZE* (measured as log of total assets) show a mean of 0.094 and 15.889, respectively. This indicates that foreign subsidiaries in all European countries of our sample are about as

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profitable as the German subsidiaries, but smaller. Similar to Table 1, Panel B and Panel C of Table 5 show that U.S.-owned subsidiaries have a higher average tax rate compared to the control sample (33.4% vs. 32.4%). Panel D of Table 5 reports the statutory corporate income tax rate plus regionally invariant surcharges and withholding taxes (column STR), and effective tax rates for the European sample. It shows that Belgium, France, Norway, and Spain have a statutory total tax burden exceeding the U.S. statutory tax rate of 35%.[15]

We observe an unusually high effective tax rate for Italy of 50.1%, while the statutory tax rate in Italy amounted to 33% from 2005 to 2007 and was reduced as from 2008 to 27.5%. Adding withholding taxes, the total tax burden amounts to 31.1%. This is significantly lower than the effective tax rate of 50.1% because Italian firms classify social security costs paid by the firm as income taxes. Thus, the effective tax rate of 50.1% is overstated and the real tax burden is below the U.S. 35% statutory tax rate.

Insert Table 5 here

Findings: Less than 35%

Next, we repeat our analysis in different European countries. We split the countries for this analysis based on whether the statutory tax burden exceeds 35%. For countries with a total tax burden below 35% (domestic tax plus withholding tax according to income tax treaties), we expect to find the same results as in the German sample. The regression design is the same as in Equation 5. Due to limited data availability, we control for only *ROA* and *SIZE*.[16] *ROA* is defined as pretax book income over total assets, and *SIZE* is defined as the natural logarithm of total

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[15] Countries with insufficient data on either financial statements or shareholder data are dropped (e.g. for the Netherlands, we observe only 40 firm-year observations with foreign shareholders).
[16] In the European sample, we find similar effects for German firms as in the German sample with all controls. Thus, we are confident that controlling for only *ROA* and *SIZE* does not influence the results.

assets. Table 6 shows the multivariate regression results for European countries with effective tax rates less than 35%.

Column ALL shows that for these countries the effective tax rate is 2.1 percentage points higher if a firm is owned by a U.S. investor. Thus, the effect is stronger compared to the German sample. If we test our hypothesis individually for each country, the coefficient for *US100* is always positive and statistically significant in five out of seven countries. In the remaining two countries, the level of significance is only close to conventional levels (P-values for Austria: 0.155, and Italy: 0.126). The magnitude ranges from 1.9 percentage points (Germany[17] and Sweden) to 3.6 percentage points (Finland).[18]

Insert Table 6 here

Findings: Greater than 35%

U.S. multinationals can balance the repatriation tax burden across dividend payments from countries with tax rates above and below 35%. If the average effective tax rates of foreign subsidiaries exceed the U.S. statutory tax rate of 35%, the U.S. tax authorities grant no credit for the taxes paid in excess of 35%. Thus, we do not expect to find the effect documented in the previous sections. Conversely, we expect subsidiaries owned by U.S. parent companies to be as tax aggressive as subsidiaries owned by non-U.S. investors. Therefore, we repeat our analyses for Belgium, France, Norway, and Spain where the statutory tax rate (domestic tax plus withholding tax according to double tax treaties) exceeds 35%. While we cannot be certain that the U.S.

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[17] Using the Orbis data, we have many more observations in Germany compared to the prior analysis. This is because we (i) need less information in Table 6 due to the limited control variables and (ii) we do not have to merge the data using the German Commercial Register Number. However, the results show that, in this case, the effect seems to be stronger (1.9 percentage points).

[18] In Italy, the coefficient of the intercept is relatively high (0.832). This implies that a company would have an effective tax rate of 83.2 percent if all other variables were zero. However, the sample is limited to firm-year observations with positive pretax income and the coefficient of *ROA* is highly negative. Furthermore, all other coefficients are also negative and the respective variables are non-negative. Thus, all variables have a negative slope, and consequently ETRs are lower than 83.2 percent.

average foreign tax rate also exceeds 35%, we consider it more likely in this sample for two reasons. First, pushing the average tax rate across all countries below 35% is not easy, as many developed countries have a corporate income tax rate around 30%. Second, balancing a high repatriation tax burden with a low one is allowed only for active income (earned through regular, continuous, and substantial operations which are not classified as rental activity), and tax havens usually have low economic power to engage in real operations.

In Table 7 we find a non-significant and slightly negative coefficient across the four countries. When testing each country separately, we find non-statistically significant coefficients of -0.002 and -0.003 for *US100* in Belgium and France, respectively. Thus, in these two countries U.S. investors are as tax aggressive as all other investors, indicating that they face an average foreign tax rate above 35%. In Norway and Spain, *US100* yields a positive parameter estimate of 0.033 and 0.015, respectively. This indicates that the typical U.S. investor faces an average worldwide tax rate below 35%, and being tax aggressive does not pay off. We investigate these differences in the next section in more detail.

Insert Table 7

Cross-Sectional Tests: Belgium and France

We conclude in the previous section that U.S. investors in Belgium and France are as tax aggressive as all other foreign investors in both countries, based on a null result. To strengthen our line of argumentation, we run two additional tests on Belgium and France. First, we limit our sample to foreign investors that are shareholders in Belgium or France *and* in a country with a total tax burden below 35%. In this sample (*Belgium/France & <35%*), we expect U.S. shareholders to be less tax aggressive than other foreign shareholders because the weighted average foreign tax rate is likely below 35%. Second, we use a sample where foreign

shareholders do not have any shareholdings in countries apart from Belgium and France.[19] In this sample the foreign tax rate is above 35% and we expect U.S. shareholders to be as tax aggressive as other foreign shareholders.

Table 8 reports the results for the common shareholders sample in Model 1 and Model 2 (*Belgium/France & <35%*) and the results for the no-common-shareholder sample in Models 3 and 4 (*Belgium/France only*). The results are in line with our expectation. Thus, in Model 1 and Model 2, U.S. shareholders are less tax aggressive than other foreign shareholders, as indicated by positive and statistically significant coefficients of around 0.015. In the second sample where foreign shareholders have their only foreign business activities in Belgium or France, U.S. shareholders are more tax aggressive than the other shareholders.

A potential concern of this paper is that less tax aggressive U.S. groups may self-select into specific countries. Table 8 addresses this concern. If self-selection were an issue, we would observe only one group of subsidiaries in the Belgium/France sample, either less tax aggressive subsidiaries or more tax aggressive subsidiaries. However, we find that U.S.-owned subsidiaries behave *less* tax aggressive if their average foreign tax rate is below 35% and *more* tax aggressive if their average foreign tax rate is above 35%. Thus, self-selection is less of a concern.

<div align="center">**Insert Table 8**</div>

Japan and the United Kingdom

Japan and the United Kingdom had a worldwide tax system in place until 2009. Similar to U.S.-owned subsidiaries, we compare U.K.- and Japanese-owned subsidiaries to other foreign-owned subsidiaries in jurisdictions where the average effective tax rates are below and above the

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[19] This is based on our sample of European shareholdings. We cannot rule out that these groups have active income in other low-tax countries. However, it is at least more likely that, based on the mentioned sample split, these firms have higher foreign average tax rates.

Japanese and U.K. statutory tax rates, respectively.[20] Thus, we expect to find that U.K. and Japanese subsidiaries are less tax aggressive in countries where the average ETR is below the Japanese and U.K. statutory tax rates, and no effect in countries where the average ETR is above.

The statutory tax rate between 2005 and 2009 was 42% in Japan and 30% in the United Kingdom. Therefore, we first test whether subsidiaries owned by investors from the United States, the United Kingdom and Japan are less tax aggressive than subsidiaries owned by investors from other countries in a sample of countries with a statutory tax rate below 30%. This test is similar to Table 7, with the exception that observations from Germany (average STR 33.3%) and Italy (average STR 31.1%) are not included. The first column of Table 9 shows that subsidiaries owned by U.K. and Japanese investors are statistically significantly less tax aggressive. While the economic magnitude is very high for Japanese subsidiaries (4.7 percentage points), it is much lower for U.K. subsidiaries (0.3 percentage points).

Column 2 of Table 9 (> 35%) shows that subsidiaries owned by U.K. investors are not less tax aggressive when the statutory tax rate is above 35%. In this case, these subsidiaries have the same incentive to be tax aggressive. We could not conduct this test for Japanese-owned subsidiaries, as only Belgium has a higher tax rate than Japan and we observe only 26 Japanese-owned subsidiaries in Belgium. Overall, using U.K.- and Japanese-owned subsidiaries as treatment countries corroborates our finding that multinationals from countries with worldwide tax regimes are less tax aggressive in their foreign subsidiaries.

Insert Table 9

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[20] Ideally, we could do a pre-post comparison (difference-in-difference design). However, we do not have sufficient ownership data available for U.K. and Japanese firms after 2009.

5   Robustness Tests and Further Results

Different Thresholds

In Table 10 we repeat our analyses from Table 3 (German sample) with five different thresholds (0, 25, 50, 75, and 100% U.S. ownership). The first threshold is *US0* which equals one if the respective firm has at least one U.S. investor, and zero otherwise. If investors hold more than 25%, they can prevent other investors from changing the bylaws or liquidating the firm. *US25* equals one if more than 25% of the investors are from the United States, and zero otherwise. If investors hold more than 50% of the votes, they can determine the strategy of the firm, as they hold a majority in the supervisory board. *US50* equals one if more than 50% of the investors are from the United States, and zero otherwise. If investors control at least 75% of the votes, they are able to change the bylaws (§ 262 Abs. 1 Nr. 2 AktG) or even liquidate the respective company (§ 179 Abs. 2 AktG). *US75* equals one if at least 75% of the investors are from the United States, and zero otherwise. Lastly, *US100* equals one if the firm is wholly-owned by a U.S. investor, and zero otherwise.

The control sample is defined accordingly. For example, when we investigate firms with more than 25% U.S. investors, the control sample consists of firms that have at least 25% investors from one other non-German country. The results are statistically significant across all models. As one would expect, the coefficient increases with the degree of U.S. investors.

Insert Table 10 here

Long-Run ETR

Our sample does not contain subsidiaries with negative pretax income. This sample selection could potentially affect our results. As tax rates of firm-years with negative pretax income are not meaningful, we cannot simply include them in our sample. However, we can

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compute long-run effective tax rates over several years and exclude only those subsidiaries where the sum of the pretax income is negative. This has several advantages. First, the sample selection problem is reduced, as we are able to include firm-years with negative pretax income. Second, this approach reduces the problem of tax loss offsetting. And third, Dyreng, Hanlon, and Maydew (2008) show that annual tax rates are not necessarily predictive of the long-run tax avoidance strategy.

In Table 11 (German sample), we include subsidiaries with at least 3 years of observations, instead of including every subsidiary with at least 1 year of data. The dependent variable is the average tax rate, and – in line with Gallemore and Labro (2015) – we compute our control variables as averages over time. In Model 1, we include the main variable of interest, *US100*, and fixed effects, and find a significantly positive coefficient of 0.016. When including further controls, the coefficient increases to 0.026. Thus, we still find that U.S.-owned subsidiaries are less tax aggressive.

Insert Table 11 here

Tax Loss Carryforwards

In our multivariate regressions, we do not control for the existence of tax loss carryforwards (TLCFs), as firms are not required to publish their amount of TLCF. This could potentially influence our results if U.S.-owned subsidiaries were more profitable and would thus show less TLCFs than non-U.S.-owned subsidiaries. We address this concern by limiting our sample to subsidiaries with more than one consecutive year of positive pretax income, and then delete the first observation of each firm. Such a reduced sample is less prone to the influence of TLCF, as firms would offset (at least partly) TLCFs in the first profitable year after the tax loss. For the reduced sample, we find that U.S.-owned subsidiaries have higher ETRs than the control

sample (Table 12, German sample). The effect is even greater than in our main analysis in Table 3. Thus, we conclude that differences in the profitability of subsidiaries and the existence of TLCFs do not explain our findings.

<div align="center">**Insert Table 12 here**</div>

United States versus Canada

So far, we include a non-EU dummy to rule out that our results are driven by geographical distance or institutional knowledge about a country's tax system. However, compared to other non-EU countries, the U.S. culture is close to that of Europe. To rule out that our results are driven by geographical or cultural differences between the investors' home countries, we compare U.S.-owned subsidiaries with Canadian-owned subsidiaries.[21] Table 13 shows that U.S.-owned subsidiaries have a more than 2.7 percentage points higher tax rate compared to Canadian-owned subsidiaries. However, this results should be interpreted with caution, as the sample contains only 62 Canadian firm-year observations (35 different subsidiaries).

<div align="center">**Insert Table 13 here**</div>

6   Conclusion

This paper investigates the impact of a worldwide tax system at the level of a parent company on the tax aggressiveness of its subsidiaries abroad. We find that subsidiaries owned by U.S. investors show a by 1.2 percentage point higher ETR compared to subsidiaries owned by investors from a country with a territorial tax system. We argue that this is due to the high U.S. tax rate that is levied on dividend distributions of a subsidiary when profits are repatriated.

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[21] We are aware that the Canadian culture is not the same as the U.S. culture. However, we believe that the Canadian culture is the closest one.

An alternative explanation for our findings could be cultural differences across countries, such as reputational concern. However, we are not aware why especially U.S. investors should face higher reputational costs than other investors.[22] In a similar vein, the costs associated with tax avoidance should also be constant across foreign investors, as all foreign investors face the same litigation risk in the foreign jurisdiction in case of tax fraud. Nevertheless, geographical distance or similarity in the tax systems could have an effect on the costs of tax avoidance. We rule this out by testing the incremental effect of U.S.-owned subsidiaries over and above other non-EU countries, and comparing U.S.-owned subsidiaries with Canadian-owned subsidiaries. The variable for being U.S. owned remains qualitatively the same and statistically significant.

Our study contributes to the existing literature by showing why U.S. multinationals are less tax aggressive in their foreign subsidiaries. Markle (2016) documents that parent companies in countries which apply a worldwide tax system, shift less income across jurisdictions into their foreign subsidiaries than parent companies in countries that apply a territorial tax system. Furthermore, we document that subsidiaries owned by investors from country that applies a worldwide tax system have no incentive to take aggressive tax positions in foreign jurisdictions when the domestic tax rate does not exceed the U.S. statutory tax rate. Taxing multinationals based on their worldwide profits leads to a reduction in profitability of their foreign subsidiaries, and can lead to a wealth transfer from the residence state of the parent to the residence state of the subsidiary. This wealth transfer takes place at the cost of the parent's shareholders, who receive a lower after-tax return.

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[22] Gallemore, Maydew, and Thornock (2014) do not find a reputational effect of U.S. firms that engage in tax sheltering.

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Table 1: Descriptive Statistics: Germany
Panel A: Full Sample

Variable	N	Mean	Sd	Min	P25	P50	P75	Max
US100	4,199	0.128	0.334	0.000	0.000	0.000	0.000	1.000
ETR	4,199	0.310	0.149	0.003	0.238	0.317	0.391	0.814
ROA	4,199	0.096	0.091	0.000	0.031	0.069	0.131	0.464
DEBT	4,199	0.590	0.242	0.025	0.426	0.606	0.771	1.136
PPE	4,199	0.160	0.210	0.000	0.013	0.066	0.234	0.918
INTANG	4,199	0.019	0.057	0.000	0.000	0.002	0.008	0.384
SIZE	4,199	16.809	1.592	11.285	15.880	16.729	17.695	21.349
BIG5	4,199	0.201	0.401	0.000	0.000	0.000	0.000	1.000

Panel B: *US100* = 0

Variable	N	Mean	Sd	Min	P25	P50	P75	Max
ETR	3,662	0.308	0.149	0.003	0.233	0.317	0.391	0.814
ROA	3,662	0.095	0.091	0.000	0.031	0.067	0.130	0.464
DEBT	3,662	0.599	0.238	0.025	0.441	0.615	0.775	1.136
PPE	3,662	0.162	0.211	0.000	0.012	0.067	0.238	0.918
INTANG	3,662	0.020	0.058	0.000	0.000	0.001	0.008	0.384
SIZE	3,662	16.809	1.627	11.285	15.882	16.729	17.704	21.349
BIG5	3,662	0.206	0.404	0.000	0.000	0.000	0.000	1.000

Panel C: *US100* = 1

Variable	N	Mean	Sd	Min	P25	P50	P75	Max
ETR	537	0.317	0.149	0.003	0.263	0.314	0.390	0.464
ROA	537	0.101	0.088	0.000	0.036	0.081	0.136	1.136
DEBT	537	0.528	0.259	0.025	0.323	0.525	0.728	0.918
PPE	537	0.148	0.199	0.000	0.017	0.062	0.190	0.384
INTANG	537	0.016	0.048	0.000	0.000	0.002	0.008	21.349
SIZE	537	16.805	1.336	11.285	15.871	16.729	17.627	1.000
BIG5	537	0.168	0.374	0.000	0.000	0.000	0.000	0.000

This table provides descriptive statistics for the German sample. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *ETR* is the effective tax rate and calculated as total tax expense (including deferred taxes) divided by pretax income. *ROA* is pretax income divided by total assets. *DEBT*, *PPE*, and *INTANG* are total debt, PPE, and intangible assets deflated by total assets. *SIZE* is the logarithm of total assets. *BIG5* is coded one if the respective company is audited by one of the top auditors in Germany (BDO, Deloitte, EY, KPMG, PwC). All non-dichotomous data are winsorized at the 1% and 99% level.

Table 2: Pearson and Spearman Correlations Germany

Variable	US100	ETR	ROA	DEBT	PPE	INTANG	SIZE	BIG5
US100		0.02	0.02	-0.10***	-0.02	-0.02	0.00	-0.03**
ETR	0.01		-0.17***	0.02	-0.07***	0.05***	-0.02	0.01
ROA	0.04**	-0.18***		-0.27***	-0.04***	-0.05***	-0.13***	-0.06***
DEBT	-0.10***	0.05***	-0.35***		-0.12***	0.01	0.13***	0.01
PPE	0.00	-0.05***	0.05***	-0.11***		-0.05***	0.09***	-0.03*
INTANG	0.01	0.03	0.02	0.02	0.17***		0.04***	-0.03
SIZE	0.00	-0.04**	-0.14***	0.09***	0.05***	0.07***		0.47***
BIG5	-0.03**	0.00	-0.05***	0.01	0.01	0.08***	0.48***	

This table provides Spearman correlations below the diagonal and Pearson correlations above the diagonal. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *ETR* is the effective tax rate and calculated as total tax expense (including deferred taxes) divided by pretax income. *ROA* is pretax income divided by total assets. *DEBT*, *PPE*, and *INTANG* are total debt, PPE, and intangible assets deflated by total assets. *SIZE* is the logarithm of total assets. *BIG5* is coded one if the respective company is audited by one of the top auditors in Germany (BDO, Deloitte, EY, KPMG, PwC). All non-dichotomous data are winsorized at the 1% and 99% level. ***/**/* mark significance at the 1/5/10% level.

Table 3: Regressions - Germany

ETR	Model 1	Model 2	Model 3 IMM	Model 4 DIV	Model 5 Match
Constant	0.330***	0.427***	0.424***	0.354***	0.311***
	(0.019)	(0.032)	(0.032)	(0.038)	(0.061)
US100	**0.012***	**0.012***	**-0.007**	**0.029***	**0.028***
	(0.003)	**(0.006)**	**(0.007)**	**(0.008)**	**(0.016)**
PARTITION			0.007*	0.029***	
(*IMM* or *DIV*)			(0.004)	(0.008)	
*US * PARTITION*			**0.037***	**0.006**	
			(0.004)	**(0.004)**	
NON_EU		0.000	0.000	-0.017**	0.037**
		(0.006)	(0.006)	(0.008)	(0.018)
ROA		-0.286***	-0.287***	-0.250***	-0.272**
		(0.035)	(0.035)	(0.033)	(0.113)
DEBT		-0.025**	-0.024**	0.012	-0.052**
		(0.010)	(0.010)	(0.016)	(0.022)
PPE		-0.044***	-0.043***	-0.057***	-0.080**
		(0.013)	(0.013)	(0.019)	(0.030)
INTANG		0.119	0.118	0.115	0.343***
		(0.076)	(0.075)	(0.089)	(0.108)
SIZE		-0.003	-0.003	0.001	0.003
		(0.002)	(0.002)	(0.003)	(0.005)
BIG5		0.009	0.008	-0.014*	0.040***
		(0.007)	(0.007)	(0.007)	(0.009)
Year FE	Yes	Yes	Yes	Yes	Yes
Legal Form FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.040	0.073	0.076	0.084	0.138
N	4199	4199	4199	2325	722

This table shows OLS regression results. The dependent variable is *ETR* which is the effective tax rate. It is calculated as total tax expense (including deferred taxes) divided by pretax income. In Model 3, the conditioning variable (*PARTITION*) is *IMM* and in Model 4 it is *DIV*. *IMM* is a dummy variable which is coded one if the ultimate owner is equal to the immediate owner. *DIV* is the ratio of dividends to net income. Model 5 contains the results of a matched subsample. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *NON_EU* is coded one if the parent company is located in a non-EU country, and zero otherwise. *ROA* is pretax income divided by total assets. *DEBT*, *PPE* and *INTANG* are total debt, PPE, and intangible assets deflated by total assets. *SIZE* is the logarithm of total assets. *BIG5* is coded one if the respective company is audited by one of the top auditors in Germany (BDO, Deloitte, EY, KPMG, PwC). All non-dichotomous data are winsorized at the 1% and 99% level. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. ***/**/* marks significance at the 1/5/10% level.

Table 4: Regressions - Germany, Parent Controls

ETR	Model 1	Model 2
Constant	0.316***	0.446***
	(0.033)	(0.046)
US100	**0.028***	**0.035***
	(0.009)	**(0.011)**
ETR_p	0.006	0.004
	(0.009)	(0.010)
ROA_p	0.079*	0.059
	(0.039)	(0.044)
$LOSS_p$	0.001	0.002
	(0.012)	(0.013)
$DEBT_p$	0.017	0.014
	(0.017)	(0.019)
PPE_p	-0.007	-0.003
	(0.018)	(0.018)
$INTANG_p$	-0.056*	-0.049
	(0.031)	(0.032)
$SIZE_p$	0.001	0.000
	(0.003)	(0.003)
Subsidiary Controls	Yes	Yes
Time FE (of subsidiary)	No	Yes
Legal Form FE (of subsidiary)	No	Yes
Industry FE (of subsidiary)	No	Yes
R-squared	0.055	0.080
N	1809	1809

This table shows OLS regression results where the control variables are based on data of the parent company. The dependent variable is *ETR*, which is the effective tax rate calculated as total tax expense (including deferred taxes) divided by pretax income. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. All control variables are based on the parent of the respective subsidiary. *ROA* is pretax income divided by total assets. *DEBT*, *PPE*, and *INTANG* are total debt, PPE, and intangible assets deflated by total assets. *SIZE* is the logarithm of total assets. All non-dichotomous data are winsorized at the 1% and 99% level. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. ***/**/* marks significance at the 1/5/10% level.

Table 5: Descriptive Statistics – Europe

Panel A: Full Sample

Variable	N	Mean	Sd	Min	P25	P50	P75	Max
US100	85,348	0.046	0.209	0.000	0.000	0.000	0.000	1.000
ETR	85,348	0.325	0.194	0.003	0.213	0.313	0.401	0.953
ROA	85,348	0.094	0.105	0.000	0.024	0.060	0.124	0.581
SIZE	85,348	15.889	2.011	10.859	14.638	15.935	17.132	21.577

Panel B: *US100* = 0

Variable	N	Mean	Sd	Min	P25	P50	P75	Max
ETR	81,451	0.324	0.194	0.003	0.211	0.312	0.401	0.953
ROA	81,451	0.094	0.105	0.000	0.024	0.060	0.124	0.581
SIZE	81,451	15.871	2.018	10.859	14.619	15.921	17.115	21.577

Panel C: *US100* = 1

	N	Mean	Sd	Min	P25	P50	P75	Max
ETR	3,897	0.334	0.185	0.003	0.252	0.330	0.407	0.953
ROA	3,897	0.099	0.099	0.000	0.033	0.071	0.128	0.581
SIZE	3,897	9.358	1.816	10.859	15.052	16.236	17.392	21.577

Panel D: Tax Rates by Country

STR < 0.35	N	*ETR*	STR	*STR* > 0.35	N	*ETR*	STR
Austria	835	0.221	0.288	Belgium	3,694	0.321	0.439
Denmark	3,656	0.269	0.288	France	20,790	0.363	0.366
Finland	1,986	0.306	0.297	Norway	4,193	0.295	0.352
Germany	37,657	0.306	0.333	Spain	5,596	0.301	0.370
Ireland	618	0.164	0.169				
Italy	3,797	0.501	0.311				
Sweden	2,526	0.290	0.263				
Sum	51,075			Sum	34,273		

Panel A of this table provides descriptive statistics of the European sample. Panels B and C report descriptive statistics split along U.S. ownership (*US100*=1). *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *ETR* is the effective tax rate and calculated as total tax expense (including deferred taxes) divided by pretax income. *ROA* is pretax income divided by total assets. *SIZE* is the logarithm of total assets. Panel D divides the sample into countries where the statutory tax burden computed as corporate income tax plus withholding tax on dividend distributions (column STR) is below (exceeds) 35%.

Table 6: Regressions – Europe per Country, ETR < 35%

ETR	ALL	Austria	Denmark	Finland	Germany	Ireland	Italy	Sweden
Constant	0.352***	0.175***	0.429***	0.275***	0.422***	0.238***	0.831***	0.451***
	(0.008)	(0.036)	(0.015)	(0.032)	(0.399)	(0.024)	(0.019)	(0.021)
US100	**0.021*****	**0.036**	**0.023*****	**0.036*****	**0.019****	**0.039****	**0.034**	**0.019*****
	(0.005)	**(0.025)**	**(0.005)**	**(0.008)**	**(0.013)**	**(0.018)**	**(0.022)**	**(0.006)**
NON_EU	-0.002	0.003	-0.004	-0.056***	0.001	-0.028	0.001	0.008
	(0.005)	(0.026)	(0.006)	(0.011)	-(0.015)	(0.019)	(0.023)	(0.007)
ROA	-0.490***	-0.142*	-0.261***	-0.381***	-0.511***	-0.208***	-1.160***	-0.361***
	(0.030)	(0.072)	(0.015)	(0.041)	-(0.291)	(0.050)	(0.057)	(0.038)
Size	-0.007***	0.006	-0.010***	0.010***	-0.006***	-0.006**	-0.024***	-0.012***
	(0.001)	(0.004)	(0.001)	(0.002)	-(0.012)	(0.002)	(0.002)	(0.002)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	No	No	No	No	No	No	No
R-squared	0.146	0.025	0.093	0.107	0.070	0.106	0.246	0.123
N	51,075	835	3,656	1,986	37,657	618	3,797	2,526
N, US = 1	1,492	42	297	71	792	33	176	81
N, US = 0	49,583	793	3,359	1,915	36,865	585	3,621	2,445

This table shows OLS regression results for European countries in which the tax rate is below 35% (domestic tax plus withholding tax according to income tax treaties). The dependent variable is *ETR*, which is the effective tax rate. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *NON_EU* is coded one if the parent company is located in a non-EU country, and zero otherwise. *ROA* is pretax income divided by total assets. *SIZE* is the logarithm of total assets. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. All non-dichotomous data are winsorized at the 1% and 99% level. ***/**/* marks significance at the 1/5/10% level.

Table 7: Regressions – Europe per Country, ETR > 35%

ETR	ALL	Belgium	France	Norway	Spain
Constant	0.423***	0.596***	0.453***	0.348***	0.368***
	(0.013)	(0.025)	(0.013)	(0.026)	(0.016)
US100	**-0.002**	**-0.003**	**-0.008**	**0.033*****	**0.015**
	(0.009)	**(0.014)**	**(0.013)**	**(0.010)**	**(0.012)**
NON_EU	-0.003	-0.002	0.001	-0.011	-0.016
	(0.010)	(0.016)	(0.014)	(0.011)	(0.012)
ROA	-0.459***	-0.338***	-0.631***	-0.196***	-0.242***
	(0.034)	(0.040)	(0.031)	(0.024)	(0.019)
Size	-0.006***	-0.024***	-0.005***	-0.001	-0.002***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	No	No	No	No
R-squared	0.093	0.099	0.090	0.068	0.054
N	34,273	3,694	20,790	4,193	5,596
N, US = 1	2,405	143	1,740	149	373
N, US = 0	31,868	3,551	19,050	4,044	5,223

This table shows OLS regression results for European countries in which the tax rate is above 35% (domestic tax plus withholding tax according to income tax treaties). The dependent variable is *ETR*, which is the effective tax rate. It is calculated as total tax expense (including deferred taxes) divided by pretax income. *ETR* is the effective tax rate and calculated as total tax expense (including deferred taxes) divided by pretax income. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *NON_EU* is coded one if the parent company is located in a non-EU country, and zero otherwise. *ROA* is pretax income divided by total assets. *SIZE* is the logarithm of total assets. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. All non-dichotomous data are winsorized at the 1% and 99% level. ***/**/* marks significance at the 1/5/10% level.

Table 8: Regressions – Belgium and France

ETR	Belgium/France & <35%		Belgium/France only	
	Model 1	Model 2	Model 3	Model 4
Constant	0.377***	0.534***	0.364***	0.475***
	(0.020)	(0.028)	(0.007)	(0.018)
US100	**0.011**	**0.016***	**-0.018***	**-0.010***
	(0.007)	**(0.005)**	**(0.003)**	**(0.003)**
ROA		-0.585***		-0.591***
		(0.051)		(0.036)
SIZE		-0.012***		-0.008***
		(0.003)		(0.002)
Year FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
R-squared	0.010	0.091	0.007	0.088
N	6,860	6,860	17,624	17,624
N, US = 1	6,530	6,530	16,071	16,071
N, US = 0	330	330	1,553	1,553

This table shows OLS regression results for Belgium and France. The sample in Model 1 and Model 2 is limited to shareholders that have at least one observation in Belgium/France and one in the <35% sample. Conversely, Model 3 and Model 4 are limited to shareholders that have at least one observation in Belgium/France, but no observations in the <35% sample. The dependent variable in Model 1 through Model 6 is *ETR*, which is the effective tax rate. It is calculated as total tax expense (including deferred taxes) divided by pretax income. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *ROA* is pretax income divided by total assets. *SIZE* is the logarithm of total assets. All non-dichotomous data are winsorized at the 1% and 99% level. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. ***/**/* marks significance at the 1/5/10% level.

Table 9: Regressions – Japan and United Kingdom

ETR	STR< 30%	STR> 35%
Constant	0.318***	0.423***
	(0.017)	(0.013)
US_100	**0.025***	-0.002
	(0.003)	(0.009)
GB_100	**0.003**	**0.002**
	(0.001)	**(0.003)**
JP_100	**0.047***	
	(0.004)	
NON_EU	-0.008**	-0.003
	(0.004)	(0.010)
ROA	-0.303***	-0.459***
	(0.016)	(0.034)
SIZE	-0.006***	-0.006***
	(0.002)	(0.001)
Time FE	Yes	Yes
Country FE	Yes	Yes
R-squared	0.139	0.093
N	9,621	34,273

This table shows OLS regression results for Japan and the United Kingdom. The dependent variable is *ETR*, which is the effective tax rate. It is calculated as total tax expense (including deferred taxes) divided by pretax income. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *GB100* equals one if the firm is wholly-owned by investors from the United Kingdom, and zero otherwise. *JP100* equals one if the firm is wholly-owned by Japanese investors, and zero otherwise. *ROA* is pretax income divided by total assets. *SIZE* is the logarithm of total assets. All non-dichotomous data are winsorized at the 1% and 99% level. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. ***/**/* marks significance at the 1/5/10% level.

Table 10: Regressions – Different Thresholds

ETR	US0	US25	US50	US75	US100
Constant	0.412***	0.386***	0.392***	0.402***	0.427***
	(0.028)	(0.027)	(0.029)	(0.027)	(0.032)
USX	**0.006***	**0.006***	**0.008****	**0.011****	**0.011****
	(0.003)	**(0.002)**	**(0.003)**	**(0.003)**	**(0.003)**
ROA	-0.254***	-0.254***	-0.250***	-0.256***	-0.285***
	(0.034)	(0.032)	(0.032)	(0.035)	(0.035)
DEBT	-0.016**	-0.022**	-0.025***	-0.022**	-0.025**
	(0.008)	(0.010)	(0.009)	(0.010)	(0.010)
PPE	-0.043***	-0.040***	-0.042***	-0.045***	-0.044***
	(0.014)	(0.013)	(0.014)	(0.013)	(0.013)
INTANG	0.074	0.086	0.109*	0.119	0.119
	(0.058)	(0.062)	(0.064)	(0.072)	(0.075)
SIZE	-0.004**	-0.003*	-0.003*	-0.003*	-0.003
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
BIG5	0.001	0.001	0.001	0.003	0.009
	(0.007)	(0.006)	(0.006)	(0.006)	(0.007)
Year FE	Yes	Yes	Yes	Yes	Yes
Legal Form FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
R-squared	0.063	0.069	0.068	0.068	0.073
N	6,038	5,245	5,179	4,648	4,199
N, US = 1	740	671	624	592	537
N, US = 0	5,298	4,574	4,555	4,056	3,662

This table shows OLS regression results for the German sample. The dependent variable is *ETR*, which is the effective tax rate. It is calculated as total tax expense (including deferred taxes) divided by pretax income. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *US75* equals one if at least 75% of the investors are from the United States, and zero otherwise. *US50* equals one if more than 50% of the investors are from the United States, and zero otherwise. *US25* equals one if more than 25% of the investors are from the United States, and zero otherwise. *US0* equals one if the respective firm has at least one U.S. investor, and zero otherwise. *ROA* is pretax income divided by total assets. *DEBT*, *PPE*, and *INTANG* are total debt, PPE, and intangible assets deflated by total assets. *SIZE* is the logarithm of total assets. *BIG5* is coded one if the respective company is audited by one of the top auditors in Germany (BDO, Deloitte, EY, KPMG, PwC). All non-dichotomous data are winsorized at the 1% and 99% level. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. ***/**/* marks significance at the 1/5/10% level.

Table 11: Regressions – Long-Run ETR

Long-run ETR	Model 1	Model 2
Constant	0.349***	0.397***
	(0.024)	(0.050)
US100	**0.016***	**0.026***
	(0.005)	**(0.009)**
NON_EU		-0.010
		(0.009)
mean(*ROA*)		-0.146***
		(0.047)
mean(*DEBT*)		0.028*
		(0.014)
mean(*PPE*)		-0.037*
		(0.021)
mean(*INTANG*)		0.168*
		(0.087)
mean(*SIZE*)		-0.003
		(0.003)
mean(*BIG5*)		-0.005
		(0.011)
Year FE	Yes	Yes
Legal Form FE	Yes	Yes
Industry FE	Yes	Yes
R-squared	0.054	0.090
N	575	575
N, US = 1	74	74
N, US = 0	501	501

This table shows OLS regression results for the German sample. In contrast to all other tables, firm-years with negative pretax income are not deleted. The sample includes only subsidiaries with more than two firm-year observations. All variables are calculated as the mean of all observations per firm over the sample period. Subsidiaries with a negative *average* pretax income are deleted from the sample. The independent variable is the long-run *ETR*, which is the average of tax payments summed over all firm-years per firm, divided by sum of pretax income summed up over all firm-years per firm. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *NON_EU* is coded one if the parent company is located in a non-EU country, and zero otherwise. *ROA* is pretax income divided by total assets. *DEBT*, *PPE*, and *INTANG* are total debt, PPE, and intangible assets deflated by total assets. *SIZE* is the logarithm of total assets. *BIG5* is coded one if the respective company is audited by one of the top auditors in Germany (BDO, Deloitte, EY, KPMG, PwC). All non-dichotomous data are winsorized at the 1% and 99% level. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. ***/**/* marks significance at the 1/5/10% level.

Table 12: Regressions – TAXRATE, controlling for TLCF

ETR	Model 1	Model 2
Constant	0.320***	0.382***
	(0.025)	(0.044)
US100	**0.014***	**0.020***
	(0.004)	**(0.007)**
NON_EU		-0.006
		(0.008)
ROA		-0.267***
		(0.040)
DEBT		0.012
		(0.013)
PPE		-0.051***
		(0.016)
INTANG		0.120
		(0.079)
SIZE		-0.002
		(0.003)
BIG5		0.000
		(0.006)
Year FE	Yes	Yes
Legal Form FE	Yes	Yes
Industry FE	Yes	Yes
R-squared	0.063	0.103
N	2195	2195
N, US = 1	291	291
N, US = 0	1,904	1,904

This table shows OLS regression results. The sample includes only subsidiaries with more than one observation; the first observation is deleted. The dependent variable is *ETR*, which is the effective tax rate. It is calculated as total tax expense (including deferred taxes) divided by pretax income. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *NON_EU* is coded one if the parent company is located in a non-EU country, and zero otherwise. *ROA* is pretax income divided by total assets. *DEBT*, *PPE*, and *INTANG* are total debt, PPE, and intangible assets deflated by total assets. *SIZE* is the logarithm of total assets. *BIG5* is coded one if the respective company is audited by one of the top auditors in Germany (BDO, Deloitte, EY, KPMG, PwC). All non-dichotomous data are winsorized at the 1% and 99% level. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. ***/**/* marks significance at the 1/5/10% level.

Table 13: Regressions – United States vs. Canada

ETR	Model 1	Model 2
Constant	0.263***	0.375***
	(0.002)	(0.000)
US100	**0.018****	**0.027****
	(0.003)	**(0.003)**
ROA		-0.457***
		(0.015)
SIZE		-0.008***
		(0.000)
Year FE	Yes	Yes
Country FE	Yes	Yes
R-squared	0.179	0.243
N	1,554	1,554
N, US = 1	1,492	1,492
N, US = 0	62	62

This table shows OLS regression results for European countries in which ETR is below 35%. The sample is limited to U.S. and Canadian shareholders. The dependent variable is *ETR*, which is the effective tax rate. It is calculated as total tax expense (including deferred taxes) divided by pretax income. *US100* equals one if the firm is wholly-owned by U.S. investors, and zero otherwise. *NON_EU* is coded one if the parent company is located in a non-EU country, and zero otherwise. *ROA* is pretax income divided by total assets. *SIZE* is the logarithm of total assets. All non-dichotomous data are winsorized at the 1% and 99% level. Standard errors are clustered at the home country of the investor and are provided within the brackets below the coefficients. ***/**/* marks significance at the 1/5/10% level