Conforming tax planning in multinational and domestic entity firms

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Abstract:

We present an alternative approach to estimate the existence and magnitude of conforming tax planning. Existing studies exploit tax effects on accruals and shifted income components around single tax rate events or variations in cash taxes paid that is not explained by book-tax differences. This paper exploits how variations in corporate tax rates affect the reported profitability in unconsolidated financial statements. Using firm-level data of European firms over the period 2005-2013, we provide broad multinational evidence on conforming tax planning. We find a semi-elasticity of reported financial accounting profits with respect to statutory tax rates of approximately -0.6. We further find that the negative association of reported profitability to tax rates holds true for domestic firms as well as firms of MNEs that do not have tax haven affiliates, but not for firms of MNEs with tax haven affiliates. Moreover, our results suggest, that some MNEs seem to be 'income shifters' and others 'conforming tax planners'.

Keywords: Tax avoidance, conforming tax planning, profit shifting, tax-motivated earnings management

JEL Classification: H25, H26

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1 Introduction

Current tax accounting research typically concentrates on *nonconforming tax planning*. Corresponding strategies reduce the tax accounting profit and the tax liability of the firm without affecting the pre-tax financial accounting profit. Studies that investigate nonconforming tax planning are typically based on financial accounting measures that reflect the differences between financial accounting and tax accounting, like effective tax rates and book-tax differences (e.g.., Desai and Dharmapala, 2006; Dyreng et al., 2008; Frank et al., 2009).

But even if firms cannot or do not want to engage in nonconforming tax planning, this does not mean that firms generally less engage in tax avoidance. Firms may rather rely on *conforming tax planning*, which does not only reduce the tax accounting profit, but also the financial accounting profit. Prior research finds that conforming tax planning is increasing in management or private ownership (Penno and Simon, 1986; Cloyd et al., 1996; Badertscher et al., 2015), while nonconforming tax planning is decreasing with private ownership (Mills and Newberry, 2001; Chen et al., 2010; Badertscher et al., 2013). Prior research further finds that nonconforming tax planning is positively associated with debt levels (Mills and Newberry, 2001), whereas other studies find evidence that conforming tax planning less occurs if firms exhibit high debt levels (Guenther, 1994). Increasing book-tax differences further may increase the scrutiny of tax authorities (Mills, 1998). Contrary, firms are more likely to engage in conforming tax planning if the probability to succeed in defending the tax position increases (Cloyd et al., 1996).

Although several incentives for conforming tax planning exist, this area of tax planning is still less surveyed. However, a comprehensive understanding of tax planning strategies and possible interactions to financial accounting is important for policymakers when designing tax rules. An awareness of tax impacts on financial accounting profits is also important for investors and other interested parties in interpreting financial accounting figures. We analyze, whether and to what extent tax planning strategies affect financial accounting profits. Further, we investigate for which types of firms conforming strategies are of particular interest.

Earlier studies on conforming tax planning basically rely on an analysis of accruals or shifted income components (e.g., gross margin, selling, general and administrative expenses) before or after tax rate changes. The results confirm a deferral of financial accounting profits or acceleration of losses in times of declining tax rates (Scholes et al., 1992; Guenther, 1994; Maydew, 1997; Roubi and Richardson, 1998) or an acceleration of profits in case of increasing tax rates (Lin, 2006). However, these studies are limited. First, they focus on single, one country tax rate change events, and second, lack to examine a general incentive to defer taxes, even if tax rates remain constant. By contrast, Badertscher et al. (2015) proxy conforming tax planning utilizing the variation in the ratio cash taxes paid to lagged total assets that cannot be explained by total book-tax differences (i.e., nonconforming tax planning). This approach though focuses on the tax outcome rather than income effects.

We adapt an estimation approach developed to investigate profit shifting activities of multinational entities (e.g., Grubert and Mutti, 1991; Hines and Rice, 1994; Huizinga and Laeven, 2008). We measure the impact of tax rate variations on a firm's reported book income. Moreover, we provide elasticity estimates for reported financial accounting profits with respect to taxes and thus quantify the impact of conforming tax planning on reported profits. We employ this estimation strategy on a broad panel of 566,963 firm-year observations from 25 European countries for the period of 2005 to 2013. Our results indicate a general semi-elasticity of reported financial accounting profits with respect to taxes of approximately -0.6.

Our analysis further differentiates for domestic firms and multinational firms. The available set of tax planning strategies that affect financial accounting profits differs depending on whether the firm is part of a multinational entity (MNE) or not. Besides conforming tax planning, affiliates of MNEs may also engage in cross-jurisdictional *profit shifting*. This tax planning strategy involves a profit reallocation between affiliates of an MNE from high-tax to low-tax jurisdictions. Even though profit shifting cannot affect an entity's consolidated financial accounting profits, prior research confirms that profit shifting has an impact on unconsolidated financial accounting profits of MNE firms (e.g., Huizinga and Laeven, 2008; Dischinger et al., 2014; Loretz and Mokkas, 2015). Further, Dyreng et al. (2012) find that internationally active U.S. firms with extensive tax haven subsidiaries manage earnings more, especially foreign earnings due to only little tax effects in tax havens. On the

other hand, Prencipe (2012) finds that MNEs manage earnings less than domestic companies. Thus, prior research provides evidence that accounting choices and tax incentives depend on the type of firms. Our findings indeed suggest that tax impacts differ between types. Whereas our tests indicate a significant relationship of reported profits and tax rates for domestic firms as well as firms that are part of MNEs without tax haven affiliates (Non-Haven MNE), we cannot find a significant tax rate effect on reported profits for affiliates that are part of Haven MNEs. In a supplementary analysis, we additionally control for tax rate differences between multinational subsidiaries and its parent firm in order to separate incentives for conforming tax planning and profit shifting. Our results suggest that for Non-Haven MNEs statutory tax rates of the subsidiary host country are significant only, but not tax rate differences to parent firms, whereas for Haven MNEs tax rate differences are significant only.

Our research contributes to the literature in several ways. First, we present an alternative identification strategy for conforming tax planning. With this approach, we are able to estimate the elasticity of financial accounting profits to tax rates. Second, we first and one provide evidence for conforming tax planning, which is not only based on one or few selected countries, but provide broad international evidence. Furthermore, we add further insights into the tax planning activities of MNEs.

The remainder of this paper is structured as follows: In section 2, we provide a simplified model of conforming tax planning and develop our hypotheses. Section 3 describes the identification strategy and variables used. Section 4 provides information about the sample selection and data used. Results are presented and discussed in section 5. Section 6 concludes.

2 Background and hypothesis development

We define conforming tax planning as a tax-motivated simultaneous reallocation of financial accounting profits (book income) and tax accounting profits (taxable income) between accounting periods. In the first part of this section, we provide a highly stylized model of conforming tax planning. Based on that model, we develop our hypotheses regarding the general tax effects on profit reporting due to conforming tax planning. The second part sets out further suggestions on the tax planning of multinational firms.

2.1 A simple model of conforming tax planning

We assume that a firm is able to reallocate some part of income (R) from the actual period to some future period T in order to realize tax benefits. R might be either positive (deferral of income) or negative (acceleration of income). The income decreasing or increasing effect in the actual period will reverse in future and will result in a future tax payment (or reduction of tax payments in case of an acceleration of income) at the future tax rate $\tau + \delta$. Tax rates may increase ($\delta > 0$), remain constant ($\delta = 0$) or decrease ($\delta < 0$) in future. The benefit B from a reallocation of income then is the present value of tax payment changes due to the reallocation

$$B(R) = \tau R - \frac{(\tau + \delta)R}{(1 + i)^T},$$
(1)

which is the tax payment change from the reallocated (deferred or accelerated) income multiplied by the current tax rate (τR), less the reversal in period T at the future tax rate, $-\frac{(\tau+\delta)R}{(1+i)^T}$.[1]

Tax planning comes at some cost (i.e., planning costs, nontax costs arising from decreased financial profits). The true cost function is not known, but following prior literature, we assume that the costs of tax planning are positive and increasing with each additional unit of income reallocated, i.e. $\frac{\gamma}{2}R^2$ ($\gamma > 0$). The net benefit from tax planning then is the benefit less the costs of tax planning:

$$NB(R) = \tau R - \frac{(\tau + \delta)R}{(1 + i)^T} - \frac{\gamma}{2}R^2.$$
(2)

We further assume that firms optimize the net benefit from tax planning by choosing the optimal direction and amount of reallocation. Tax rates as well as interest rates are assumed to be exogenous. Thus, the optimal tax planning is described by

$$\tau R - \frac{\tau R}{(1 + i)^T} - \frac{\delta R}{(1 + i)^T} - \gamma R = 0.$$
(3)

The optimal tax planning level then is

$$R^* = \gamma \left[\tau - \frac{\tau}{(1 + i)^T} - \frac{\delta}{(1 + i)^T} \right] \gtrless 0.$$
(4)

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[1] The reversal effect could of course be expanded by the assumption that the reversal is distributed over more than one future period. However, the general implication would remain the same.

In equation (4), $\tau - \frac{\tau}{(1+i)^T}$ denotes the timing effect from delayed tax payments, which is positive for positive interest rates. $-\frac{\delta}{(1+i)^T}$ denotes the effect from real tax savings due to tax rate changes. This term is zero if tax rates are constant ($\delta = 0$) and is positive if tax rates decrease ($\delta < 0$), meaning that R^* becomes positive for $\delta \leq 0$ (deferral of income). In case of a tax rate increase ($\delta > 0$), firms have an incentive to accelerate income as long as the tax rate effect overcompensates the disadvantage of the earlier timing of the tax payment:

$$\tau - \frac{\tau}{(1+i)^T} < \frac{\delta}{(1+i)^T}, \tag{5}$$

which is the case if $(1+i)^T - 1 < \delta/\tau$.[2]

Differentiating the optimal amount of reallocation R^* in equation (4) with respect to the current period's tax rate gives

$$\frac{\partial R^*}{\partial \tau} = \gamma \cdot \left[1 - \frac{1}{(1-i)^T} \right], \tag{6}$$

which is positive as long as interest rates are positive, indicating that the optimal level of deferred income is the higher the higher the level of taxes is.

Since true profits as well as the managed portion of profits cannot be observed, we need to proxy the unmanaged true profits. We assume that the reported pre-tax profit in the current period, P^r, is the unmanaged "true" profit P less the reallocated income R. Assuming that a firm's true output follows a Cobb-Douglas production function with the main input factors capital and labor, true profits can be seen as a function of the input factors. Reported profits thus can be described by

$$P^r = P(C, L) - R. \tag{7}$$

If the optimal tax planning level is chosen, tax optimal reported profits are

$$P^r = P(C, L) - \gamma \left[\tau - \frac{\tau}{(1+i)^T} - \frac{\delta}{(1+i)^T} \right], \tag{8}$$

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[2] For example, if it is considered to accelerate income from the immediately following to the present period, this simplifies to $i < \delta/\tau$, which means that firms should accelerate income unless the change in tax rates in percent is higher than the interest rate.

which are negatively related to tax rates when optimal levels of tax planning are chosen and as long as interest rates are positive as described.

Beyond that, MNEs have tax planning opportunities with impact on financial accounting profits that domestic entities do not have. They may exploit tax arbitrage opportunities between affiliates in low-tax and high-tax jurisdictions and shift income to the affiliate that is located in the relatively low-tax country (profit shifting). Those activities do not affect the consolidated statement of a multinational group, but the unconsolidated statements of affiliates, as prior findings confirm.[3] In consequence, tax rates may differently affect reported financial accounting profits of domestic firms and multinational firms in unconsolidated statements. But even if multinationals have the additional opportunity to engage in profit shifting, it is not clear whether they always do so. Prior findings suggest that firms engaging in profits shifting are more likely to have tax haven affiliates (Richardson and Taylor, 2015). Reasoning from this, we divide the group of MNE firms into those that are part of MNEs with tax haven affiliates (Haven MNEs), which we assume to be more likely to engage in profit shifting, and affiliates of all other MNEs (Non-Haven MNEs) on the other hand, which are assumed to be less likely to engage in profit shifting. Thus, we will investigate tax rate effects on reported profitability separately for the different types of firms in our sample and modify our first hypothesis to

H1a: Reported pre-tax profits of domestic firms are decreasing in tax rates.

H1b: Reported pre-tax profits of Non-Haven MNE firms are decreasing in tax rates.

H1c: Reported pre-tax profits of Haven MNE firms are decreasing in tax rates.

2.2 Tax planning within MNEs

As discussed in the previous section, MNEs can pursue two main strategies of tax planning that influence financial accounting profits, conforming tax planning and profit shifting. Conforming tax planning incentives are driven by the statutory tax rate of the firm's residence country. By contrast, a firm's profit shifting incentive is driven by tax rate differences within the corporate group, rather than the home country's statutory tax rates only. For example, assume a corporate group consisting of a parent firm P, faced with a tax rate τ_P, and a foreign affiliate A, faced with a tax rate τ_A. If the

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[3] Dharmapala (2014) provides an overview of the research and findings for profit shifting.

affiliate is located in the high-tax country ($\tau_A - \tau_P > 0$), the incentive is to shift income from the affiliate to the parent company, which decreases the affiliate's reported profits. If the affiliate is located in the low-tax country ($\tau_A - \tau_P > 0$) the group benefits from shifting profits to the low-tax affiliate, which increases the affiliate's reported profits, and vice versa. The benefit of profit shifting is the higher the higher the difference in tax rates, $\tau_A - \tau_P$, is (e.g., Huizinga et al., 2008; Heckemeyer and Overesch, 2013).

Technically, conforming tax planning and profit shifting do not exclude each other, but can be utilized simultaneously within the same firm. If this is the case, both strategies are strategic complements and the apportionment of tax planning efforts depends on the cost structure of the available tax planning activities. On the other hand, one can argue that the implementation of a functioning profit shifting group structure causes huge initial costs, e.g. for the reorganization of the group structure and setting up new affiliates in low-tax jurisdictions for tax purposes. This could prevent an MNE from engaging in profit shifting activities, but rather conducting in conforming tax planning. By contrast, firms that once have established a profit shifting structure might be faced with marginal costs of tax planning that are strictly lower for shifting profits abroad compared to deferring income to the future. Then it is favorable to increase tax planning efforts by engaging in profit shifting rather than conforming tax planning. Following this, we expect that for the firms that are more likely to be 'profit shifters' according to prior literature, reported profits are negatively associated to the profit shifting incentive, but not to the conforming tax planning incentive, whereas for other MNEs we expect the reverse result. Thus, we hypothesize:

H2a: Reported financial profits of Non-Haven MNE affiliates decrease in tax rate rates, but not in tax rate differences.

H2b: Reported financial profits of Haven MNE affiliates decrease in tax rate differences, but not in tax rates.

3 Research design

Our study adopts an approach developed to analyze tax-induced cross-jurisdictional income shifting (e.g., Hines and Rice, 1994; Dischinger, 2008; Huizinga et al., 2008). As argued in section 2,

the reported pre-tax profitability is affected by a book-tax conforming reallocation of true profits, where the incentive to reallocate profits increases with the level of tax rates. Formally, our estimation strategy can be described by the following model:

$$\log Profit_{i,t} = \beta_0 + \beta_1 Taxrate_{i,t} + \beta_2 \log Capital_{i,t} + \beta_3 \log Labor_{i,t} + \beta_4 X_{i,t}$$
$$+ a_i + \rho_t + \varepsilon_{i,t} \tag{9}$$

where the dependent variable ($\log Profit_{i,t}$) is the logarithmized reported pre-tax profit of company i at time t. Following prior literature, we logarithmize pre-tax profits as this variable is highly skewed.

The explanatory variable of central interest in our regressions is the tax rate ($Taxrate_{i,t}$), which proxies the incentive to reallocate profits. According to our first hypothesis, we expect a negative association of reported profits with tax rates. Additionally, we include measures for capital input ($Capital_{i,t}$) and labor input ($Labor_{i,t}$) to control for the unobservable true profits and firm size. We proxy capital input using the firm's total assets, as this is a more comprehensive measure than, for example, fixed assets (Azémar, 2010). We measure labor input utilizing the costs of employees rather than number of employees, as the costs of employees do not only capture the quantitative labor input, but also accounts for qualitative aspects of employed labor. Both variables are transformed using logarithms to model linear relationships with the outcome variable. We expect that output and thus reported profits are increasing in the input factors.

$X_{i,t}$ comprises a set of country-specific control variables that might have an effect on a firm's reported profitability. $GDP_{i,t}$ is the gross domestic product of affiliate i's host country in t and is used to proxy the market size of an economy. It might be a strategic choice for firms to be present on large markets, even if competition is higher and thus, margins are lower. In consequence, the profitability is expected to be lower on competitive markets leaving all other input variables constant. $GDPpC_{i,t}$ is the GDP per capita, controlling for the economy's degree of development. Assuming that a higher degree of development is related to higher efficiency in production, we ceteris paribus expect a higher profitability in better developed economies. The country's unemployment rate ($Unemp_{it}$) controls for the cyclical development of a country's economy, as a flagging economy might negatively affect the firm's profitability. Additionally, the Rule of Law-index (Law_{it}) is included to control for effects of

the governance functioning on financial reporting. The regression model further comprises firm-fixed effects (a_i) to control for time-invariant, unobserved firm-specific characteristics as well as time-fixed effects (ρ_t) to capture economic shocks that vary over time but apply to all firms in the sample.

In additional tests, we control for profit shifting opportunities of MNEs. We expand our model described in equation (9) by an additional tax incentive variable for profit shifting, $Taxdiff_{i,t}$, and estimate the following model:

$$\log Profit_{i,t} = \beta_0 + \beta_1 Taxrate_{i,t} + \beta_2 Taxdiff_{i,t} + \beta_3 \log Capital_{i,t}$$
$$+ \beta_4 \log Labor_{i,t} + \beta_5 X_{i,t} + a_i + \rho_t + \varepsilon_{i,t} \tag{10}$$

In line with prior literature, we define our measure of profit shifting incentives ($Taxdiff_{i,t}$) as the difference in the affiliate's statutory tax rate to the parent firm's statutory tax rate (e.g., Dischinger, 2008; Dischinger et al., 2014). The tax rate difference is positive for relatively high-tax affiliates and negative for relatively low-tax affiliates. The incentive for income decreasing profit shifting decreases with declining tax rate differences. Thus, we expect a significant negative relationship of an affiliate's reported profits and the tax rate difference if profit shifting is relevant to the firms.

4 Sample selection and data description

We use micro-level company data of European companies for the years 2005 to 2013 from the Bureau van Dijk (BvD) AMADEUS database. AMADEUS contains detailed financial accounting and ownership information of European firms. We first extracted a set of active parent firms in EU-28 countries that are marked as global ultimate owners (GUO) in AMADEUS and for which sufficient company and ownership information is available.[4] We then obtained a list of firms that are recorded as affiliates of the GUOs found up to the 10th subsidiary level.

Table 1 displays further steps in the sample selection process. In our sample, we include data of both, parent firms as well as affiliates, but the first steps in the sample selection are focused on the affiliates included in the sample. AMADEUS provides ownership information of European parent

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[4] Thus, we have selected firms of all countries that were member of the European Union at the end of our sample period. Croatia became the 28th member of the European Union on July 1, 2013.

firms on a worldwide basis, even though financial accounting data of Non-European affiliates is not provided in the database. Thus, we mesh the subsample of affiliates with the subsample of parent firms and limit the sample to affiliates within EU-28 countries and drop affiliates that are marked inactive. We further assume that profit shifting is available only if affiliates are at least majority owned by the parent firm. As we are not totally convinced that profit shifting opportunities do not exist for affiliates that are not at least majority owned, we exclude those affiliates.

Further steps apply to the combined sample of parent firms and affiliates. Firms are dropped if their tax planning incentive is doubtful (e.g., public authorities, nonprofit-organizations) or if they are related to the financial institutions and insurances sector (2-digit NACE codes 64 to 66), as those firms are usually faced with special regulations and financial reporting characteristics. We forfeit numerous observations due to the absence of complete and plausible financial accounting information. Additionally, our sample is restricted to firm-year observations with local GAAP reporting. Observations based on IFRS reporting are excluded, as prior research suggests that conforming tax planning is not relevant under IFRS reporting (Karampinis and Hevas, 2013).

Last, we need to classify sample firms into domestic firms versus Non-Haven and Haven MNE firms. Note that we conduct this allocation using the worldwide ownership information provided in AMADEUS, irrespective of the availability of financial accounting data. We define a parent firm and its affiliates as domestic firm if the parent firm does not hold any stake in a firm that is settled abroad. Contrary, firms are classified as MNE firms if either the parent firm or one of its majority owned affiliates is located in another country than the other group members. We exclude all groups or firms of that groups, respectively, in which the parent firm holds a stake of less than or equal to 50 % in a foreign firm, as it is not sure for those groups, whether profit shifting opportunities exist or not. We further define MNEs as Haven MNEs if the parent firm holds a stake in a firm that is resident in a tax haven.[5] All other MNE entities are considered as Non-Haven MNEs.

Given all restrictions, our sample comprises an unbalanced panel of 566,963 observations from 139,415 firms in all EU-28 countries except Cyprus, Greece and Lithuania over a period from

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[5] Note that a unique definition or list of tax havens does not exist. The determination of tax haven affiliates in this study relies on the list of tax havens in OECD (2009) as described in the Appendix.

Table 1
Sample selection

Selection process	Parent firms		Affiliates		Total	
	Firms	Obs.	Firms	Obs.	Firms	Obs.
Firms identified	331,416		1,237,525		1,568,941	
Residence in EU-28			1,062,510		1,393,926	
Active firms			776,220		776,220	
Majority ownership			655,409		655,409	
Tax planning incentive	330,815		651,449		982,264	
No financial institutions/insurances	186,417		446,874		633,291	
Sufficient accounting information	61,380	292,266	97,095	410,304	158,475	702,570
Local GAAP statements	57,016	240,305	92,682	368,055	149,698	608,360
Reliable firm type	53,109	223,196	86,306	343,767	139,415	566,963
Total	53,109	223,196	86,306	343,767	139,415	566,963

Notes:

'Firms identified': AMADEUS database has been searched for active firms in an EU-28 country that are marked as global ultimate owner (GUO); identified affiliates are all firms that are recorded in AMADEUS as a subsidiary of the GUO up to the 10th level. *'Residence in EU-28':* Affiliates where dropped if resident outside EU-28. *'Active firms':* affiliate observations were dropped if not marked as 'active' (e.g., due to bankruptcy, insolvency). *'Majority ownership':* Affiliates are excluded if they are not owned with more than 50 % of the shares (direct or total) by its overall parent (GUO). *'Tax planning incentive':* Only public and private limited companies, partnerships and sole proprietorships are included. All other legal forms are excluded as the tax planning incentive of other legal forms is doubtful (e.g., nonprofit organizations, public authorities). '*No financial institutions/insurances':* Firms with 2-digit NACE codes 64, 65 or 66 are excluded. *'Sufficient accounting information':* Observations are excluded if financial statement data is missing, incomplete regarding the data needed or implausible (e.g. negative assets, employees or employee costs). Additionally, observations are excluded if the reporting period does not equal 12 months, as the analysis also uses flow figures that depend on the length of the reporting period. *'Local GAAP statements':* Observations with IFRS statements are not considered. *'Reliable MNE/haven status':* A firm is classified as domestic firm if no foreign affiliate could be identified in the group. A firm is classified as an MNE firm if either the parent firm or another group affiliate that is owned by the parent firm with more than 50 % of the share is resident abroad. All other firms are excluded. Firms are also excluded if the information of a tax haven affiliate found is reliable.

2005 to 2013. Hence, we observe each firm for 4.1 years on average. 53.109 firms are parent firms and 86.306 firms are affiliates.

Table 2 illustrates the distribution of sample firms across Europe. The distribution across Europe is not uniform. Most firms are located in Belgium, France and Italy with more than 15 thousand firms each, whereas only 36 firms each are located in Latvia as well as Malta.

Our sample comprises parent firms and affiliates up to the 10th level. The allocation of group levels is shown in Table 3. Unsurprisingly, the number of firms is decreasing from the first to the 10th subsidiary level. In total, 37,480 affiliates (43.4 %) are settled at the first subsidiary level. However, the distribution across subsidiary levels differs for MNE firms and domestic firms. First-level affiliates

Table 2
Country statistics

	Parent firms			Affiliates			Total
Country	Domestic	Non-Haven MNE	Haven MNE	Domestic	Non-Haven MNE	Haven MNE	
Austria	92	110	31	71	538	272	1,114
Belgium	2,863	1,368	224	8,009	2,909	1,001	16,374
Bulgaria	1,326	59	36	327	305	236	2,289
Croatia	202	106	49	46	276	192	871
Czech Republic	1,804	513	11	679	1,390	487	4,884
Denmark	441	398	72	8,600	2,002	436	11,949
Estonia	330	88	5	286	502	135	1,346
Finland	1,555	548	119	1,305	1,120	348	4,995
France	3,199	694	368	2,907	4,854	3,909	15,931
Germany	2,414	1,236	567	1,878	3,173	1,426	10,694
Hungary	23	304	22	5	256	228	838
Ireland	127	46	3	83	61	30	350
Italy	5,313	1,770	2,096	1,360	3,990	1,954	16,483
Latvia	7	3	3	1	11	11	36
Luxembourg	25	32	17	12	67	72	225
Malta	10	4	1	8	6	7	36
Netherlands	180	43	7	2,332	932	282	3,776
Poland	1,461	175	36	334	1,135	532	3,673
Portugal	1,228	370	127	488	955	829	3,997
Romania	698	61	45	235	1,110	569	2,718
Slovakia	444	252	7	220	639	234	1,796
Slovenia	133	115	63	102	245	157	815
Spain	4,887	1,301	785	1,265	1,979	1,667	11,884
Sweden	7,242	1,200	115	295	721	300	9,873
United Kingdom	1,333	125	42	4,034	3,429	3,505	12,468
Total	37,337	10,921	4,851	34,882	32,605	18,819	139,415

of domestic entities in the sample add up to 80.5 % of all domestic affiliates. The number of affiliates per level is strongly decreasing with the levels for domestic affiliates as well as Non-Haven MNE affiliates. Contrary, affiliates of haven MNEs are roughly equally distributed across subsidiary levels.

We further enlarge our data by merging information on the statutory corporate tax rates, i.e. top statutory tax rates including local taxes and surtaxes, taken from KPMG's corporate tax table and KPMG (2006). We further merge country level information (GDP, GDP per capita, unemployment rate, Rule of Law Index) is obtained from the World Development and World Governance Indicators databases.

Table 3
Subsidiary level statistics

Subs. level	Domestic	MNE			Total
		Non-Haven	Haven	Total	
	Firms	Firms	Firms	Firms	Firms
Parent	37,337	10,921	4,851	15,772	53,109
1	28,073	7,797	1,610	9,407	37,480
2	5,686	11,386	2,616	14,002	19,688
3	824	5,788	3,000	8,788	9,612
4	199	3,172	2,511	5,683	5,882
5	77	1,699	2,028	3,727	3,804
6	11	1,072	1,550	2,622	2,633
7	3	631	1,340	1,971	1,974
8	8	416	1,025	1,441	1,449
9	1	265	1,090	1,355	1,356
10	0	379	2,049	2,428	2,428
Total	72,219	43,526	23,670	67,196	139,415

Our observational unit is the single firm (parent or affiliate) per year. Table 4 provides the descriptive statistics of our sample. The firms in our sample exhibit a mean pre-tax financial accounting profit of 4.4 billion USD. The sample firms own total assets of 54.9 billion USD on average, whereas the average costs of employees are 6.9 billion USD. Though, the size and profitability differs between MNE firms and domestic firms. Domestic firms own pre-tax profits of 701 million USD on average, where total assets and costs of employees amount to 8.6 and 1.9 billion USD on average, respectively. Contrary, Haven MNE firms exhibit profits of 17.3 billion USD on average, where total assets averagely amount to 218.5 billion USD, costs of employees are 22.1 billion USD on average. Corporate statutory tax rates in our sample vary between 10 % (Bulgaria, Cyprus) and 38.4 % (Germany) with an average tax burden of 28.7 %. For the MNE affiliates, the mean tax rate difference to the parent firm is slightly negative with -0.9 and -0.8 percentage points, respectively, but exhibits an equal spread between -28.4 percentage points and +28.4 percentage points. Table 5 provides the Spearman correlations among the variables. All reported correlations are statistically significant at the 5 percent level. We observe a significant negative correlation of pre-tax profits and statutory corporate tax rates, which suggests reported financial accounting profits are negatively related to taxes. Our control variables *GDPpc* and *Law* are very highly correlated, as well as our input factor measures. Thus, we regress the dependent variable (*LogProfit*) on all of the independent

Table 4
Descriptive statistics

Variables	Obs.	Mean	St. Dev.	P25	Median	P75	Min.	Max.
Panel A: Total sample								
Company information:								
Pre-tax Profit[a]	566,963	4,436	92,146	78	317	1,245	0.001	1.846e+07
Total Assets[a]	566,963	54,951	1.097e+06	1,295	4,766	15,389	1	1.844e+08
Cost of Employees[a]	566,963	6,909	98,889	286.6	1,020	3,571	0.001	1.678e+07
Tax information:								
Statutory tax rate[b]	566,963	0.287	0.059	0.250	0.296	0.338	0.100	0.384
Country information:								
GDP[d]	566,963	1,360	1,163	387.4	563.1	2,404	5.991	3,757
GDP per Capita[a]	566,963	38.86	13.23	34.84	41.60	46.26	3.853	113.7
Unemployment[e]	566,963	0.079	0.019	0.070	0.078	0.084	0.028	0.187
Rule of Law Index[f]	566,963	84.81	13.77	79.62	89.42	94.31	46.89	100
Panel B: Domestics subsample								
Pre-tax Profit[a]	285,183	701.0	7,576	45.45	155.5	521.5	0.001	2.989e+06
Total Assets[a]	285,183	8,618	50,383	780.5	2,315	7,327	1	6.878e+06
Cost of Employees[a]	285,183	1,889	6,256	168.5	520	1,664	0.001	893,040
Statutory tax rate[b]	285,183	0.286	0.058	0.250	0.294	0.340	0.100	0.384
Panel C: Non-Haven MNE subsample								
Pre-tax Profit[a]	181,232	3,266	41,702	141	549	1,900	0.015	1.419e+07
Total Assets[a]	181,232	37,105	308,983	2,323	7,674	21,660	2	4.599e+07
Cost of Employees[a]	181,232	6,369	45,932	504.1	1,676	4,910	0.061	1.226e+07
Statutory tax rate[b]	181,232	0.286	0.060	0.250	0.295	0.333	0.100	0.384
Tax rate difference[c]	132,288	-0.009	0.056	-0.007	0	0	-0.284	0.284
Panel D: Haven MNE subsample								
Pre-tax Profit[a]	100,548	17,137	210,660	290	1,149	4,313	0.005	1.846e+07
Total Assets[a]	100,548	218,528	2.565e+06	4,717	15,460	56,332	2.671	1.844e+08
Cost of Employees[a]	100,548	22,118	225,664	931	3,205	10,016	0.019	1.678e+07
Statutory tax rate[b]	100,548	0.294	0.059	0.260	0.314	0.333	0.100	0.384
Tax rate difference[c]	78,411	-0.008	0.062	-0.030	0	0.014	-0.284	0.259

Notes:

[a] In thousand USD, current prices.

[b] Top statutory corporate tax rates in percent including average local taxes and surtaxes.

[c] Difference in the affiliates statutory tax rate and the statutory tax rate of the parent company; calculated for affiliates only.

[d] In billion USD, current prices.

[e] in %.

[f] Rule of Law Index, Percentile Rank (0 = lowest rank, 100 = highest rank).

variables and calculate the variance inflation factors (VIFs). We find VIFs between 1.2 and 2.6 with a

mean of 2.0. This suggests that multicollinearity is not a problem.

Table 5

Spearman correlations

Variable	Log Profit	Taxrate	Log Capital	Log Labor	GDP	GDPpC	Unemp	Law
Log Profit	1.0000							
Taxrate	-0.0105	1.0000						
Log Capital	0.7799	0.0555	1.0000					
Log Labor	0.6906	0.0243	0.7598	1.0000				
GDP	0.2881	0.4573	0.338	0.3874	1.0000			
GDPpC	0.0036	0.0909	-0.074	0.0708	0.1848	1.0000		
Unemp	-0.1045	0.1589	-0.0665	-0.1144	-0.0175	-0.3559	1.0000	
Law	0.0963	-0.1306	-0.0199	0.1714	0.1763	0.7884	-0.2357	1.0000

All reported correlations are statistically significant at the 5 percent level.

Variable definitions are as follows:

Log Profit = log of profits before taxes (in thousand USD, current prices);

Taxrate = statutory corporate tax rate;

Log Capital = log of total assets (in thousand USD, current prices);

Log Labor = log of cost of employees (in thousand USD, current prices);

GDP = gross domestic product at purchaser's prices (in billion USD, current prices);

GDPpC = gross domestic product per capita (gross domestic product divided by midyear population; in thousand
  USD, current prices);

Unemp = total unemployment rate in % of total labor force;

Law = Rule of Law-Index (percentile rank among all countries; 0 (lowest) to 100 (highest)).

5 Empirical analysis

5.1 Overall conforming tax planning

Our main set of regressions examines the relationship between tax rates and the reported profitability

of firms. Table 6 displays the fixed-effects regressions as described in model (9). Column (1) depicts

the results for the total sample including affiliates as well as parent firms from multinational and

domestic entities. We find a negative relationship of reported pre-tax profits to tax rates, significant at

the 1 % level. We find a semi- elasticity of -0.574, indicating that reported profits are 0.574 % lower

when tax rates increase by 1 % point. Referring to our sample, the result indicates that an increase by

one standard deviation of tax rates results in a 3.39 % decrease in reported profits. A tax rate increase

from the minimum to the maximum observed tax rate would be related to a 16.3 % decrease in profits.

In addition, note that all other coefficient estimates exhibit signs as expected.

Columns (2) and (3) reestimate the model for the subsamples of domestic firms and MNE

firms. Consistent with H1a, the results likewise confirm a negative association of reported profits with

Table 6
Conforming tax planning and reported profitability

Sample	All	Domestic	MNE	Non-Haven MNE	Haven MNE
Expl. variables:	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*
Taxrate	-0.574***	-0.813***	-0.351**	-0.578***	0.038
	(0.109)	(0.169)	(0.144)	(0.185)	(0.230)
Log Labor	0.133***	0.093***	0.182***	0.167***	0.208***
	(0.006)	(0.007)	(0.009)	(0.011)	(0.013)
Log Capital	0.720***	0.772***	0.668***	0.694***	0.625***
	(0.007)	(0.010)	(0.010)	(0.013)	(0.015)
GDP	-0.000***	-0.000***	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDPpC	0.009***	0.013***	0.002	0.001	0.003
	(0.001)	(0.001)	(0.002)	(0.002)	(0.003)
Unemp	-1.828***	-2.484***	-1.546***	-1.353***	-1.980***
	(0.155)	(0.245)	(0.202)	(0.253)	(0.335)
Law	-0.012***	-0.013***	-0.011***	-0.011***	-0.010***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.003)
Time dummies	√	√	√	√	√
Firm-fixed effects	√	√	√	√	√
Observations	566,963	285,183	281,780	181,232	100,548
Number of firms	139,415	72,219	67,196	43,526	23,670
Within R^2	0.0985	0.0945	0.105	0.104	0.107
Overall R^2	0.825	0.753	0.836	0.812	0.859

Notes:
In all columns, fixed effects regressions of the conforming tax planning equation in model (9) are provided. The dependent variable is the log of pre-tax profit in all regressions. Definitions of explanatory variables are as described in Table 5. For all regressions, heteroskedasticity-robust standard errors are reported in parentheses. The standard errors are corrected for clustering at the company level. *, ** and *** denote significance at 10 %, 5 % and 1 % levels, respectively.

tax rates for the domestic group (column (2)). The estimated semi-elasticity of profits to tax rates is higher for domestic firms as in the total sample, with a coefficient estimate of -0.813. Using the domestics subsample, this suggests a decline in reported profits of 4.7 % if tax rates increase by the standard deviation of 5.8 %. By contrast, the outcome for the MNE subsample (column (3)) is considerably lower in quality with being significant at the 5 % level, as well as in magnitude with a coefficient estimate for *Taxrate* of -0.351. The results thus still confirm a negative association of profits with tax rates, which is in line with our hypotheses. However, the declining quality and magnitude could be an indicator for substitutive profit shifting activities, which are not captured by the host country tax rate measure. Column (4) thus depicts the results for the subsample of Non-Haven MNE firms. The coefficient estimate now is highly significant again and amounts to -0.578, which is fairly comparable to the result of the total sample in column (1). Consistent with H1b, the results suggest that firms of Non-Haven MNEs do engage in book income-affecting tax planning. By contrast,

the coefficient estimate for the subsample of Haven MNE firms in column (5) is very close to zero. Moreover, the coefficient estimate does not gain statistical significance. Thus, the results do not support the hypothesis of conforming tax planning within Haven MNE firms, as statutory taxes do not seem to be of significant interest for those firms. We interpret this as a first indicator for the validity of H2b for Haven MNE companies, i.e., the results coincide with the hypothesis that Haven MNEs are more likely to engage in profit shifting activities and thus, rely on tax rate differences rather than host country statutory tax rates only.

5.2 Tax planning of MNE affiliates

The results so far suggest that host country statutory tax rates are relevant for Non-Haven MNE firms, but for Haven-MNEs not. In a further analysis, we examine whether this could be possibly due to differing preferences with regard to conforming tax planning and profit shifting. Our analysis in Table 7 thus addresses the association of reported profitability of MNE affiliates to both tax incentives. Note that we focus on affiliate observations only, as including both, parent firms as well as affiliates would induce an opposing consideration of the same shifting process between the parent firm and its affiliate.

We find a significantly negative association of reported profits to host country statutory tax rates for the subsample of Non-Haven MNE affiliates in column (1). The coefficient estimate is very similar in magnitude compared to the result of the subsample including Non-Haven MNE parents in Table 6, column (4). This finding is in line with our conforming tax planning hypothesis. In column (2), we reestimate column (1) employing the tax rate difference affiliate's parent firm as the proxy for profit shifting incentives, rather than the tax rate. The coefficient estimate of our variable of interest does not gain statistical significance and is even close to zero. Thus, the result suggests that profit shifting does not play a role for this group of MNE affiliates. Column (3) regresses reported profits on both tax incentives as described in model (10) for this sample. Again, the proxy for conforming tax planning incentives is highly significant and negative, whereas the proxy for profit shifting is insignificant. The results indicate that Non-Haven MNE affiliates seem to be 'conforming tax planners' rather than 'profit shifters'. The effect of tax rates on reported profits is estimated with a

Table 7
Tax planning of MNE affiliates

Sample	Non-Haven MNE			Haven MNE		
Expl. variables:	(1)	(2)	(3)	(4)	(5)	(6)
Taxrate	-0.564***		-0.732***	-0.241		0.598*
	(0.219)		(0.244)	(0.268)		(0.333)
Taxdiff		0.020	0.334		-0.852***	-1.140***
		(0.205)	(0.229)		(0.220)	(0.273)
Log Labor	0.158***	0.158***	0.158***	0.221***	0.221***	0.221***
	(0.014)	(0.014)	(0.014)	(0.016)	(0.016)	(0.016)
Log Capital	0.674***	0.675	0.674***	0.618***	0.617***	0.618***
	(0.014)	(0.014)	(0.014)	(0.016)	(0.016)	(0.016)
GDP	-0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
GDPpC	-0.002	-0.003	-0.002	0.003	0.004	0.003
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Unemp	-1.098***	-1.165***	-1.072***	-1.266***	-1.206***	-1.276***
	(0.296)	(0.295)	(0.297)	(0.388)	(0.388)	(0.388)
Law	-0.012***	-0.012***	-0.012***	-0.008***	-0.008***	-0.008***
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
Observations	132,288	132,288	132,288	78,411	78,411	78,411
Number of firms	32,605	32,605	32,605	18,819	18,819	18,819
Within R2	0.097	0.097	0.097	0.113	0.114	0.114
Overall R2						

Notes:
The dependent variable is in all columns the log of pre-tax profit in all regressions. Definitions of explanatory variables are as described in Table 5. For all regressions, heteroskedasticity-robust standard errors are reported in parentheses. The standard errors are corrected for clustering at the company level. *, ** and *** denote significance at 10 %, 5 % and 1 % levels, respectively.

coefficient estimate of -0.564, indicating that reported profits of Non-Haven MNE affiliates decline by 3.38 % when the host country statutory tax rate increases by its standard deviation of 6.0 %.

Columns (3) to (6) reestimate the regressions for the subsample of Haven MNE affiliates. By contrast to the results for subsample the Non-Haven MNE affiliates, we cannot find a significant negative effect of tax rates on profits in column (4). Column (5) rather displays a highly significant coefficient estimate for the tax rate difference to the parent firm. We estimate a semi-elasticity of -0.852, which is very close to the consensus profit shifting estimate in prior literature of -0.8 (Heckemeyer and Overesch, 2013). Thus, our findings suggest that Haven MNE affiliates seem to be 'profit shifters' rather than 'conforming tax planners'. Last, we employ the simultaneous estimation approach in model (10) on the subsample of Haven MNE affiliates. Again, the tax rate difference

Table 8
Conforming tax planning in parent firms

Sample	Domestic	Non-Haven MNE	Haven MNE
Expl. variables:	*(1)*	*(2)*	*(3)*
Taxrate	-0.946***	-0.666*	0.306
	(0.227)	(0.361)	(0.582)
Log Labor	0.096***	0.180***	0.169***
	(0.009)	(0.020)	(0.024)
Log Capital	0.783***	0.761***	0.675***
	(0.014)	(0.028)	(0.037)
GDP	-0.000***	-0.000	0.000
	(0.000)	(0.000)	(0.000)
GDPpC	0.016***	0.012***	0.008
	(0.002)	(0.004)	(0.010)
Unemp	-2.367***	-1.877***	-2.978***
	(0.303)	(0.501)	(0.924)
Law	-0.011***	-0.010***	-0.012*
	(0.003)	(0.004)	(0.007)
Time dummies	√	√	√
Firm-fixed effects	√	√	√
Observations	152,115	48,944	22,137
Number of firms	37,337	10,921	4,851
Within R^2	0.107	0.123	0.087
Overall R^2	0.746	0.787	0.861

Notes:
In all columns, fixed effects regressions of the conforming tax planning equation in model (9) are provided. The dependent variable is the log of pre-tax profit in all regressions. Definitions of explanatory variables are as described in Table 5. For all regressions, heteroskedasticity-robust standard errors are reported in parentheses. The standard errors are corrected for clustering at the company level. *, ** and *** denote significance at 10 %, 5 % and 1 % levels, respectively.

variable is negative and gains high statistical significance. The tax rate coefficient estimate now is significant, but positive, being contradictory to the conforming tax planning hypothesis.

5.3 Robustness tests

As an additional analysis, we examine conforming tax planning incentives of parent firms. Especially for MNEs, conforming tax planning incentives could differ for parent firms compared to its affiliates. Prior research indicates that MNEs are reluctant to shift profits away from headquarters to affiliates, even if the headquarter is located in the high-tax jurisdiction (Dischinger et al., 2014). Thus, the role of conforming tax planning could be of more importance in parent companies as an alternative to profit shifting. Table 8 thus displays the regression of reported profits on *Taxrate* and control variables for the subsample of parent firms, as described in model (9). Column (1) displays the result for the subsample of domestic parents. The coefficient estimate confirms the results from Table 6, column (2) and displays a highly significant negative association of reported profits to statutory tax

rates, consistent with H2a. This suggests that for parent firms of domestic entities conforming tax planning is of relevance as well.

Column (2) displays the coefficient estimates for the parent subsample of Non-Haven MNEs. Again, we find that reported profits are significantly negative related to statutory tax rates, supporting our hypothesis of conforming tax planning. For the subsample of Haven MNE parents in column (3), we find a coefficient estimate for *Taxrate* that is positive and statistically insignificant. This is in line with the theory that Haven MNE companies engage in profit shifting rather than conforming tax planning.

6 Conclusions

Current tax accounting research typically focuses on nonconforming tax planning activities, whereas conforming tax planning is still minor investigated and is still in search of a broad measure for those strategies. Most recent research on conforming tax planning is based on a measure that is based on the variation in taxes paid that could be explained by conforming tax planning. We contribute to the literature by adapting an alternative approach, which has been developed in prior literature to investigate profit shifting activities of multinational entities. With this approach, we build on the book income effects of conforming tax planning rather than the tax payments. In contrast to prior results, our evidence is based on a broad multinational sample of European companies, but not only based on country specific analyses.

We find that reported book income is negatively related to tax rates. For the group of domestic firms, the estimated semi-elasticity with respect to taxes is -0.813. We further observe comparable results for Non-Haven MNE firms. In result, we find evidence indicating that host country statutory tax rates are relevant to Non-Haven MNE firms due to conforming tax planning, but not to Haven MNE firms. Contrary, tax rate differences are significantly relevant to Haven MNE firms, which are most likely to engage in profit shifting, as prior research suggests. On the other hand, we do not find a significant association of pre-tax profits to tax rate differences for Non-Haven MNE firms. Altogether, our findings suggest that conforming tax planning and profit shifting are strategic substitutes rather than strategic complements for MNE firms.

Our paper has implications for tax policy makers in evaluating the effects of proposed tax rules that require a book-tax conforming reporting decision. Second, our results may help investors and other interested parties to evaluate possible effects of conforming tax planning on reported profitability. Last, our paper provides further insights to the strategic tax planning choices of MNEs.

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Appendix

List of "tax haven" jurisdictions

In OECD (2009), the following jurisdictions are mentioned as a tax haven:

Andorra	Marshall Islands
Anguilla	Monaco
Antigua and Barbuda	Montserrat
Aruba	Nauru
Bahamas	Netherlands
Bahrain	Antilles
Belize	Niue
Bermuda	Panama
British Virgin Islands	St Kitts and Nevis
Cayman Islands	St Lucia
Cook Islands	St Vincent & Grenadines
Dominica	Samoa
Gibraltar	San Marino
Grenada	Turks and Caicos Islands
Liberia	Vanuatu
Liechtenstein	