The Role of Multinational Corporations' Executives in Foreign Subsidiaries' Tax Management

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Abstract

This study investigates to what extent U.S. multinational corporations' (MNCs) executives affect the tax management of their foreign subsidiaries. While prior literature shows that *parent executives* (CEOs and CFOs) affect overall groups' tax avoidance metrics, our results indicate that parent executives, on average, do not affect foreign subsidiaries' tax management (tax avoidance and income shifting). Instead, subsidiaries' tax management is largely explained by time-invariant subsidiary characteristics, and partly by local *subsidiary executives* in larger subsidiaries and low-tax countries. Our study sheds new light on the role of executives in international tax avoidance decisions within MNCs and contributes to the literature by documenting that subsidiaries' tax avoidance is shaped by subsidiaries' operations rather than parent executives' characteristics.

Keywords: executives; executive fixed effects; multinational corporations; tax avoidance

JEL Classification: H26, M12

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1. Introduction

The public press and the academic literature are increasingly debating the role of executives in tax avoidance behavior of multinational corporations (MNCs). In political hearings, for example, executives are the focus of investigations of particular tax planning strategies that relied heavily on international operations (Mason 2020). Consistent with these investigations, prior literature documents a significant impact of *parent executives* (e.g., CEOs and CFOs) on MNCs' tax avoidance (e.g., Dyreng et al. 2010). Tax savings are often generated by foreign subsidiaries of MNCs (Dyreng and Lindsey 2009; OECD 2015; Koester et al. 2017) and the demand for more effective tax management within MNCs has increased over the last decade (EY 2014). However, it is unclear whether and to what extent MNCs' parent executives, subsidiary executives, or subsidiary characteristics affect subsidiaries' tax avoidance. As majority shareholders, MNCs' parents have significant influence over their foreign subsidiaries, and parent executives could potentially execute their 'managerial tax avoidance style' on foreign subsidiaries. At the same time, foreign subsidiaries are independent legal entities with separate financial statements and the respective local tax rules apply. Thus, MNCs' parent executives may have insufficient tax knowledge and information to actively engage in the subsidiaries' day-to-day tax planning. In addition, agency conflicts between the headquarter and the subsidiaries' management may further prevent parents' executives from actively influencing the subsidiaries' tax management. We investigate to what extent multinational corporations' (MNCs) executives affect the tax management of their foreign subsidiaries.

In our empirical analyses, we focus on two tax management outcomes at the subsidiary level: the foreign subsidiaries' pre-tax income and effective tax rate (ETR). First, parent executives may affect profit shifting to and across foreign subsidiaries through the allocation of pre-tax income across subsidiaries. We use the level of observed pre-tax

income, relative to the subsidiaries' assets, cost of employees, and further characteristics, to estimate the level of income allocated to subsidiaries indicating profit shifting (e.g. Huizinga and Laeven 2008; Heckemeyer and Overesch 2017). Thus, if parent executives have certain preferences for tax-motivated profit shifting, we should observe that these executives have a significant influence on the allocation of pre-tax income of their foreign subsidiaries.

Second, we focus on the foreign subsidiaries' ETRs, which captures to what extent the foreign subsidiary engages in local tax avoidance opportunities. Subsidiaries can reduce their ETRs for example by using tax credits for research and development (R&D) activities (Berger 1993; Rao 2016), exploiting within-country regional tax differences (Dyreng et al. 2013), or optimizing tax-loss offsetting. Parent executives may instruct subsidiary managers to exploit these opportunities consistent with their personal (risk) preferences and abilities (Rego and Wilson 2012; Armstrong et al. 2015; Koester et al. 2017).

We study the role of parent executives in foreign subsidiaries' tax management using a novel approach to disentangle the effect of executives from subsidiary characteristics on tax avoidance.[1] The approach consists of three steps. First, we investigate the incremental adjusted R^2 of the executive fixed effects compared to our baseline model that accounts for subsidiary characteristics and includes subsidiary and year fixed effects.[2] Second, we compare the incremental adjusted R^2 of the executive fixed effect specification to a model with simulated executive tenure periods. The simulated executives fixed effects hold the number of executives per subsidiary constant, but randomly assign the tenure period and hence provide a randomized baseline. If the actual executives exert a 'managerial tax

[1] We focus on the groups' CEOs and CFOs because prior literature documents that these two groups of executives have a significant impact on the firms' tax avoidance (Dyreng et al. 2010; Rego and Wilson 2012).
[2] As we are interested in the incremental effect of executives, we use fixed effects specifications rather than other approaches such as Shapley Values. Shapley Values capture the relative importance of variables that are highly correlated. Since CEO and CFO fixed effects are by design correlated with the subsidiary fixed effect, Shapley Values will assign values to CEOs and CFOs that likely overstate their actual contribution. For a detailed discussion of our approach and findings in light of other approaches, see section 3.1.

avoidance style', then the incremental adjusted R^2 of the actual executives should exceed the incremental adjusted R^2 of the randomly simulated tenure periods. Thus, the simulated fixed effects serve as a benchmark that actual executive fixed effects should beat. Third, we compare the F-Statistics of the model with the *executive* fixed effects and the model with *simulated* fixed effects.[3]

For our empirical analyses, we combine data on executives of U.S. MNCs' from Compustat ExecuComp and financial data of their European subsidiaries from the Bureau van Dijk Amadeus database. Utilizing this combined dataset allows us to investigate the role of parent executives in the tax management of foreign subsidiaries. Since our analyses rely on management changes, we require to observe at least two different parent CEOs and parent CFOs to investigate the association between different parent executives and subsidiaries' tax management.

Our results indicate that parent executive fixed effects do *not* incrementally explain tax management of foreign subsidiaries over specifications that only include subsidiary and year fixed effects. The adjusted R^2 for specifications including year and subsidiary fixed effects is about 88 percent in the pre-tax income regressions and the incremental R^2 when including CEO fixed effects is virtually zero. These results imply that parent CEOs do not affect the allocation of pre-tax income to subsidiaries that might be motivated by profit-shifting considerations. This also indicates that the denominator of the subsidiaries' ETRs is, on average, unaffected by parent executives' preferences. Including CEO fixed effects in the ETR regressions even marginally decreases the adjusted R^2. Stated differently, including these fixed effects does not increase the explanatory power of the models more than expected by chance alone. For the *CFO* fixed effects, we find a low marginal increase of 0.4 and a

[3] To validate our empirical approach, we first show that, consistent with the findings of Dyreng et al. (2010), parent executives affect the group's overall tax avoidance (Appendix B).

decrease of 0.4 percentage points, respectively. None of the increases exceed the incremental adjusted R^2s of specifications that include simulated executive fixed effects. Also, additional F-Tests comparisons show that the CEO and CFO fixed effects do not have higher explanatory power than the simulated fixed effects. These results indicate that, on average, parent executives do not affect the tax management of foreign subsidiaries in our setting.

Given our initial results, we investigate if CEOs or CFOs affect tax management of their foreign subsidiaries to a larger extent if it is less costly for them to do so. Building on prior literature (e.g., Gong 2003; Goodman et al. 2014), we focus on low information asymmetries between the parent and the subsidiary (same industry and subsidiary's management team includes U.S. expatriate managers) and lower monitoring costs (fully owned subsidiary). Surprisingly, we only find that CEOs/CEOs affect the local subsidiaries' effective tax rates (but not pre-tax income) in the presence of U.S. managers on the board of the subsidiaries.

Prior literature documents that high-ability parent managers reduce income taxes by shifting income to foreign low-tax jurisdictions (Koester et al. 2017). Consistent with the notion that high-ability parent executives can use the existing resources more efficiently, we find that 'managerial ability' is positively associated with pre-tax income. Stated differently, our results indicate that subsidiaries with high-ability MNC executives have higher pre-tax profits. However, the effect is similarly pronounced in low-tax and high-tax countries, which is inconsistent with the notion that high-ability managers engage more in profit-shifting in our setting. Consistent with our previous results, we do *not* find that high-ability executives affect the foreign subsidiaries' effective tax rates.

Next, we study if the local *subsidiary executives* affect the tax management of the MNCs' foreign subsidiaries.[4] In contrast to the CEOs and CFOs of parent companies, subsidiary executives likely have specific tax knowledge and in-depth understanding of the subsidiaries' operations and tax avoidance opportunities. However, it is unclear if subsidiary managers have the decision rights to exert their own personal (risk) preferences. To study the role of subsidiary executives, we use data from Bureau van Dijk's Orbis database to identify changes in the subsidiary's management team. In contrast to the parent executive analyses, we do not directly observe individual CEOs and CFOs, but only changes in the management team.[5] We find that subsidiary executive fixed effects, on average, also do not incrementally explain tax avoidance behavior (i.e., ETRs) of foreign subsidiaries.[6] However, cross-sectional tests indicate that subsidiary executives incrementally explain tax avoidance behavior in low-tax countries, subsidiaries that are more prone to receive shifted income, and larger subsidiaries. This is consistent with the argument that subsidiary executives only affect local tax avoidance when tax avoidance is more beneficial because more income is shifted to low-tax subsidiaries or when the subsidiary's relative importance for the group is higher.

In robustness tests, we show that the executive fixed effects also do not manifest with a time lag, e.g., it might take time for an incoming executive to change policies in foreign subsidiaries. Furthermore, our results are unchanged when using different specifications in which we do not include time-varying parent characteristics as these characteristics already might have been influenced by the executives. We also show our results separately by

[4] We separately investigate parent- and subsidiary executives due to data availability restriction, i.e. investigating parent- and subsidiary fixed effects simultaneously results in a very small sample.
[5] Typically, European private firms have multiple managing directors. Thus, we do not observe a 'CEO' in the dataset. Prior studies also classify it as management team due to this data limitation (e.g., Shroff et al. 2014).
[6] A potential empirical concern of using effective tax rates at the subsidiary level is that the denominator of ETR, pre-tax income, is affected by profit shifting, and profit shifting also affects the incentives to engage in local tax avoidance (Beuselinck and Pierk 2022). However, the *parent* executive analyses show that CEOs and CFOs do not affect the subsidiaries' pre-tax income, and we, therefore, can use the effective tax rate to study tax avoidance of the subsidiary (nominator effect). Based on this finding, we assume that profit shifting is largely exogenous to the *subsidiary* managers in our subsidiary executive analyses

country to ensure that no particular country is driving the results. In a nutshell, and in contrast to some anecdotal evidence mentioned in the popular press, our tests suggest that parent executives do *not* affect tax management of their foreign subsidiaries, except for when the U.S. expats are part of the foreign subsidiaries' management team.

A potential caveat of our approach is that we are not able to observe other 'tax planners' with the group that optimizes taxes (Belnap et al. 2022). However, our analyses include firm fixed effects that control for any time-invariant factors. Additionally, the CEO and CFO are ultimately responsible for tax management within the group, and it is, therefore, important to understand if and to what extent they shape foreign subsidiaries' tax planning.

We contribute to the literature in two ways. First, we provide new insights into the role of executives versus organizational characteristics as driving factors of MNC subsidiaries' tax management. Prior literature shows that economic factors and regulation changes at the parent and the subsidiary level impact the extent of local tax avoidance (Beuselinck and Pierk 2022) and the level of profit shifting in foreign subsidiaries (Dyreng and Lindsey 2009; Markle 2016). Our results indicate that international tax avoidance decisions are mainly shaped by the underlying parent and subsidiary characteristics. Parent executives do, on average, not incrementally explain tax avoidance or profit shifting of foreign subsidiaries, but subsidiary executives partly explain tax management in low-tax countries, subsidiaries with more income shifting incentives, and larger subsidiaries. Our results show that executives have less explanatory power for tax avoidance decisions of a broader set of subsidiaries that mainly operate in non-tax haven countries with major economic activities. These findings complement prior literature that indicates a more significant role of executives in the overall tax avoidance strategy of firms through shifting income into tax havens (Koester et al. 2017). Overall, our results expand our understanding of tax avoidance dynamics within MNCs and which factors shape these dynamics.

We also provide answers to calls by Hanlon and Heitzman (2010), Wilde and Wilson (2018), and Abernethy and Wallis (2019) for research on determinants of (tax) management decisions. Our results provide evidence that the manager effect does not necessarily transform into complex settings which are shaped by decentralization and involve managers at the parent and subsidiary level. These findings add to the discussion on the manager effect and the role of power in MNCs' tax avoidance decisions (Feller and Schanz 2017). Our findings inform the current policy discussions around the driving factors of tax avoidance of multinational companies (Base Erosion and Profit Shifting project of the OECD) by highlighting the key role of subsidiary characteristics in international tax planning of MNCs.

2. Prior Literature and Hypothesis Development

Foreign subsidiaries are part of MNCs' operations but independent legal entities with separate financial statements and operate in jurisdictions with different local tax rules. Executives of foreign subsidiaries are part of these operations and manage local operations but are affected by parent decisions. One stream of literature provides evidence that parent and subsidiary characteristics affect subsidiaries' tax management. Markle (2016), for example, finds that MNCs subject to territorial tax regimes shift, on average, more income than those subject to worldwide tax regimes. Kohlhase and Pierk (2020) provide additional insights by documenting that MNCs lower the effective tax rates in their foreign subsidiaries after countries switch from a worldwide to a territorial tax system. Klassen and Valle Ruiz (2022) document that affiliates respond to changes in income shifting of other affiliates within MNCs. In a similar vein, Beuselinck and Pierk (2022) provide evidence that MNCs rely more on local subsidiary-level tax planning when profit shifting is getting more costly.

Another stream of literature provides evidence that executive styles and characteristics play a significant role in explaining tax avoidance at the firm level. Starting with Dyreng et al. (2010), studies in the tax accounting literature generally take the approach

to use regression models to hold firm attributes constant (Bertrand and Schoar 2003) and then focus on a specific managerial trait. Using this approach, several studies link individual managerial traits and corporate tax outcomes, including military background (Law and Mills 2017), political orientation (Christensen et al. 2015), and personal aggressiveness (Chyz 2013). Koester, Shevlin, and Wangerin (2017) provide evidence that higher-ability managers reduce income tax payments for example by engaging in greater state tax planning activities and shifting more income to foreign tax havens. Bird, Edwards, and Ruchti (2018) find that peer firms respond to tax rate shocks associated with executive turnovers by changing their GAAP tax rates in the same direction.

Prior literature on MNC tax avoidance has focused either on parent executives or firm characteristics independently but has not considered the interaction between executives and subsidiary characteristics in the context of MNCs' tax avoidance. However, prior literature also indicates that tax avoidance involves multiple actors and determinants at the same time (Feller and Schanz 2017; Wilde and Wilson 2018; Belnap et al. 2022). This is particularly the case in settings with decentralized tax planning in which not only the parent executives but also subsidiaries with different characteristics are involved in the decision process.

Parent executives can affect subsidiaries' tax avoidance in different ways. First, firms have an optimal level of tax avoidance (Kim et al. 2019) and parent executives might push the target ETR to individual subsidiaries. Executives can achieve lower subsidiary ETRs by utilizing locally designed tax avoidance opportunities. For example, managers can exploit regional tax differences (Shevlin et al. 2012; Dyreng et al. 2013), shift income across affiliates within the same country (Gramlich et al. 2004; Shevlin et al. 2012; Beuselinck and Deloof 2014), exploit tax incentives such as R&D tax credits or patent box regimes (Bornemann et al. 2020; Chen et al. 2021). Second, there is ample evidence that profit and debt shifting are important tools that MNCs use to reduce their tax rates. For example, MNCs

can use their worldwide tax payments by debt shifting (Newberry and Dhaliwal 2001) or adjusting transfer prices (Mescall and Klassen 2018). Ultimately, if group executives are more or less aggressive in profit shifting, this should affect the pre-tax income of the subsidiaries.

Although prior literature on parent executives predicts that we should observe an incremental explanatory power of MNCs' executives (Dyreng et al. 2010; Feller and Schanz 2017; Belnap et al. 2022), we may not observe this effect on the subsidiaries' tax avoidance for at least two reasons. First, parent executives have the decision rights to push tax management strategies to subsidiaries but at the same time do not have local expertise in using tax avoidance strategies. Local expertise is essential in more complex tax planning in which subsidiaries differ from the parent or the majority of other subsidiaries in their underlying operational characteristics. For example, subsidiaries that focus on manufacturing and hold intangible assets have more substance in a respective country and hence also more profit-shifting opportunities (Dischinger and Riedel 2011). In contrast, subsidiaries that focus purely on sales operations have less profit-shifting potential compared to subsidiaries holding intangible assets. Second, subsidiary executives might have incentives that are not aligned with parents' tax planning goals due to agency conflicts between parent and subsidiary executives (Shroff et al. 2014; Armstrong et al. 2015). These misalignments result from subsidiary managers' compensation incentives (Rego and Wilson 2012; Ortmann and Schindler 2021; Klassen and Valle Ruiz 2022), differences in the subsidiaries' tax systems (Kohlhase and Pierk 2020; Amberger et al. 2021), or local tax planning opportunities (Beuselinck and Pierk 2022). Consequently, a lack of local tax planning expertise and agency conflicts within an MNC might reduce the degree to which parent executives can influence

subsidiaries' tax avoidance activities.[7] Therefore, we formulate our first hypothesis in the null form:

H1: Parent executives do not affect subsidiaries' tax management.

Subsidiary executives face the opposite challenges compared to parent executives for the same reasons mentioned above. On the one hand, subsidiary executives have the local expertise to implement tax avoidance strategies tailored to local tax rules (e.g., making use of domestic R&D tax credits). On the other hand, subsidiary executives are heavily affected by the parent executives' decisions and do not necessarily have the decision rights to implement specific tax planning strategies, especially if they do not align with the MNC's overall tax planning strategy. Based on this rationale, we state our second hypothesis also in the null form:

H2: Subsidiary executives do not affect subsidiaries' tax management.

3. Empirical Approach, Data, and Sample

3.1 Empirical Approach – Incremental R^2

In our empirical approach, we do not focus on management styles across different firms, but rather investigate to what extent parent and subsidiary managers explain variation in tax avoidance metrics of subsidiaries and how the actual variation compares to a randomized baseline. Our test design is threefold: First, we compare the additional adjusted R^2 of the executive fixed effect across different specifications. Second, we compare this additional adjusted R^2 to a model with simulated tenure periods. And third, we compare the

[7] In addition, several studies that provide evidence of managers affecting MNCs' tax avoidance use the approach developed by Bertrand and Schoar (2003). However, subsequent work by Fee, Hadlock, and Pierce (2013) finds very little evidence of idiosyncratic-style effects. This suggests that managerial traits (that are difficult for a board to predict or observe) do not explain a large portion of the variation of some of the major policy choices.

F-Statistic of the model with the executive fixed effects with the F-Statistics of the simulated model. See Figure 1 for a graphical illustration of the research design.

As we are interested in the *incremental* effect of executives, we use fixed effects specifications rather than other approaches that compare the relative contribution of fixed effects to the respective R^2 of a model such as Shapley Values. Shapley Values capture the relative importance of highly correlated variables. Since CEO and CFO fixed effects are by design correlated with the subsidiary fixed effect, Shapley Values will assign values to CEOs and CFOs that likely overstate their actual contribution. To isolate the incremental impact of executives in our setting, we focus on MNCs and subsidiaries with at least one change in executives during our sample period. This allows us to compare fixed effects based on actual tenure and simulated fixed effects randomly assigned.

We start by comparing the adjusted R^2 of a reduced model without executive fixed effects to the full model that includes these fixed effects. First, we regress the logarithm of pre-tax income (*lnPTI*) on a vector of control variables to test if executives affect the level of subsidiaries' pre-tax income, which is indicative of executives engaging in profit shifting (formula 1). The vector of control variables includes the logarithm of the number of employees (*lnEMPL*), the logarithm of fixed assets (*lnFIXAS*), and the logarithm of the respective country's GDP (*lnGDP*), and time and subsidiary fixed effects (Huizinga and Laeven 2008). The subsidiary fixed effects control for any time-invariant, subsidiary-specific omitted variables (Abernethy and Wallis 2019).[8]

$$lnPTI_t = \beta_1 + \beta_2 lnEMPL_t + \beta_3 lnFIXAS_t + \beta_4 lnGDP_t + YEAR\ FE + SUB\ FE + \varepsilon \qquad (1)$$

The full model then additionally controls for CEO fixed effects (formula 2) or CFO fixed effects (formula 3). Thus, we are interested in the additional adjusted R^2 of the

[8] We do not include country-year fixed because this would subsume *lnGDP*. Nonetheless, results for both the pretax-income and ETR regressions are similar when including country-year fixed effects.

executive fixed effects, i.e., how much of the variation is explained by the executive fixed effects over and above subsidiary fixed effects.

$$lnPTI_t = \beta_1 + \beta_2 lnEMPL_t + \beta_3 lnFIXAS_t + \beta_4 lnGDP_t + YEAR\ FE + SUB\ FE + CEO\ FE + \varepsilon \quad (2)$$

$$lnPTI_t = \beta_1 + \beta_2 lnEMPL_t + \beta_3 lnFIXAS_t + \beta_4 lnGDP_t + YEAR\ FE + SUB\ FE + CFO\ FE + \varepsilon \quad (3)$$

Second, the reduced model of the ETR regressions includes the logarithm of total assets (*SIZE*), return on assets (*ROA*), leverage (*LEV*), and year and subsidiary fixed effects (formula 1).

$$ETR_t = \beta_1 + \beta_2 SIZE_t + \beta_3 ROA_t + \beta_4 LEV_t + YEAR\ FE + SUB\ FE + \varepsilon \quad (4)$$

Similar to the pretax-income regressions, the full model additionally controls for CEO fixed effects (formula 5) or CFO fixed effects (formula 6).

$$ETR_t = \beta_1 + \beta_2 SIZE_t + \beta_3 ROA_t + \beta_4 LEV_t + YEAR\ FE + SUB\ FE + CEO\ FE + \varepsilon \quad (5)$$

$$ETR_t = \beta_1 + \beta_2 SIZE_t + \beta_3 ROA_t + \beta_4 LEV_t + YEAR\ FE + SUB\ FE + CFO\ FE + \varepsilon \quad (6)$$

As a placebo test, we simulate executives, keeping the number of executives per subsidiary constant. For example, assume that a subsidiary has two CEOs during our sample period, each with 4 years of tenure. For the same subsidiary, we assign two simulated group CEOs, but randomly assign the tenure period, e.g., two years and six years. If the actual CEOs affect the effective tax rates (pre-tax income) of the subsidiaries, then the actual CEOs should increase the adjusted R^2 more than the CEOs with simulated tenure periods.

Next, in addition to the adjusted R^2, we also perform F-Tests to better understand if the executives have a significant impact on the subsidiaries' effective tax rate. In particular, we compare the full model including the executive fixed effects with the restricted model

without these fixed effects. Similar to the adjusted R^2, the F-Statistic for the actual CEO should be more pronounced if the executives influence the effective tax rate of the subsidiaries.

To investigate the role of *parent executives*, as mentioned in the formulas above, we focus on CEOs and CFOs of the parent group. Prior literature provides ample evidence that CEOs and CFOs set the tone at the top and impact tax avoidance at the parent level (Dyreng et al. 2010; Law and Mills 2017). For investigating the role of *subsidiary executives*, we focus on the subsidiary management team. Subsidiaries in our setting (i.e., European private firms) have multiple managing directors and board members.[9] Thus, we do not observe a 'CEO' in the dataset and replace the CEO/CFO fixed effects of the previous formulas with a 'management team' fixed effects, i.e. we assign a new fixed effect when the management team changes.[10] This approach is also consistent with prior studies that use the subsidiary management team due to this data limitation (e.g., Shroff et al. 2014).

3.2 Empirical Approach – Managerial Ability

The empirical approach so far relies on the incremental explanatory power of executive fixed effects. We additionally test if the ability of the group's manager affects the subsidiaries' tax management or the level of pre-tax income. High-ability managers may be able to identify unused tax opportunities, thereby reducing the effective tax rate of subsidiaries (Koester et al. 2017). Similarly, high-ability managers may identify profit-

[9] In contrast to the parent executive analyses, where an executive can be in charge of several subsidiaries in our sample, the subsidiary executives are subsidiary-specific, and thus the subsidiary fixed effects are perfectly collinear with the time-invariant subsidiary fixed effects. Therefore, we do not include subsidiary fixed effects when subsidiary executive fixed effects are included. The interpretation of the results, however, does not change.

[10] The management team includes managing directors and board members, and we compare for every year whether the composition of the management team changes. For example, if one board member is replaced with another board member, we classify this as a change in the management team. Consistently, we classify the tenure period of a specific management team according to the years in which the management team has the same constellation.

shifting opportunities, thereby affecting the level of pre-tax income of the subsidiary. However, the level of pre-tax income might also be affected because high-ability managers use the existing resources more efficiently. Therefore, we interact the proxy for managerial ability (*MASCORE*)[11] with an indicator variable that is coded one for countries with low statutory tax rates in our sample (bottom quartile). If the manager engages in more profit shifting, then we expect a higher increase in profits for subsidiaries located in low-tax countries.

$$lnPTI_t = \beta_1 + \beta_2 lnEMPL_t + \beta_3 lnFIXAS_t + \beta_4 lnGDP_t + \beta_5 MASCORE_t + \beta_6 LOWSTR_t + \beta_7 MASCORE_t * LOWSTR_t + YEAR\ FE + SUB\ FE + \varepsilon \quad (7)$$

$$ETR_t = \beta_1 + \beta_2 SIZE_t + \beta_3 ROA_t + \beta_4 LEV_t + \beta_5 MASCORE_t + \beta_6 LOWSTR_t + \beta_7 MASCORE_t * LOWSTR_t + YEAR\ FE + SUB\ FE + \varepsilon \quad (8)$$

3.3 Sample Selection and Descriptive Statistics

Our sample consists of European subsidiaries of U.S. MNCs. We focus on U.S. MNCs because of the availability of executive data, and on European subsidiaries because entities in Europe are required to publicly report separate entity financials which permits observation of a multinational firm's separate affiliates and subsidiaries. Moreover, Bureau van Dijk's Amadeus data is known to be relatively more complete for Europe as compared to other geographical areas (Beuselinck et al. 2021). In addition, the focus on European subsidiaries allows us to hold constant confounding factors such as differences in reporting requirements.

[11] *MASCORE* is the managerial ability score of Demerjian et al. (2012), which captures the managers' efficiency in creating revenues from the firms' resources relative to their industry peers. The updated data until 2020 is available at https://peterdemerjian.weebly.com/managerialability.html (last accessed May 30, 2022).

We start our sample selection with all European firms included in Bureau van Dijks' Amadeus database that are majority-owned (direct ownership >50%) by U.S. firms. In particular, the Amadeus direct shareholding classifier is either '>50', 'MO' (majority-owned), 'WO' (wholly owned), or any numerical value larger than 50.[12] The ownership information is time-invariant, which means that we define the group structure at the time of the download of the data (April 2022).

For the parent executive analyses (Table 1), we merge the ownership information with unconsolidated financial statements with non-missing control variables, which leads to 37,272 subsidiary and 66,208 subsidiary-year observations. Next, we merge the data with ExecuComp for which we can observe the firm ID number for each executive-company combination (ExecuComp item: COPERROL) of the CEO (ExecuComp item: CEOANN) and CFO (ExecuComp item: CFOANN). Furthermore, we require GDP data from the Worldbank to control for macroeconomic shocks in the subsidiary country. We delete observations with negative pre-tax income or negative total assets because these subsidiaries might have different profit-shifting incentives (De Simone et al. 2017). We also exclude observations with missing tax expense information, with ETR larger than one or smaller than zero (Dyreng et al. 2008; Beuselinck and Pierk 2019). We require fiscal years between 2011 and 2020 since the years before and after are incomplete in the Amadeus database. Finally, we require each subsidiary to have at least two CEOs and two CFOs in our sample period. The final sample consists of 2,909 subsidiary-years of 376 unique subsidiaries owned by 187 MNCs.

<<< Insert Table 1 here >>>

[12] Using a 25% ownership cut-off instead of 50% only marginally increases the sample by 139 observations and results remain qualitatively unchanged.

Table 2 presents the descriptive statistics of the parent executive sample. The effective tax rate (*ETR*) is, on average, 26%, and the inter-quartile range lies between 16% and 34%. The average affiliate in our sample reports a natural logarithm of total assets of 16.03 (*SIZE*), a return on assets of 14% (*ROA*), and a leverage ratio of 0.50 (*LEV*). For a slightly smaller sub-sample of observations, the average managerial ability score of MNC parents is 0.07 (*MASCORE*), which is slightly higher than for the sample (0.03) described in Koester, Shevlin, and Wangerin (2017). The statutory tax rate (*STR*) is somewhat lower than the ETR on the left side of the sample distribution and similar when moving to the right side of the distribution.

<<< Insert Table 2 here >>>

4. Parent CEO and CFO Fixed Effects

4.1 Main Findings

We start our primary empirical analysis by estimating specifications with different fixed effects structures focusing on MNCs' parent executives. The first metric of tax management that parents' executives can influence is the level of profit shifting. Based on this rationale, we use a set of specifications that focuses on the level of subsidiaries' pre-tax income, which is indicative of profit-shifting opportunities that executives can use. We present the results in Table 3. Column 1 presents results without any fixed effects yielding an adjusted R^2 of 0.601. The adjusted R^2 does not change in column 2 when adding year fixed effects. In column 3, we add subsidiary fixed effects, and the adjusted R^2 increases significantly to 0.882. Turning to specifications adding CEO and CFO fixed effects, we observe almost unchanged adjusted R^2 in columns 4 to 5. When including CFO fixed effects, we find the same R^2, and including CFO fixed effects only marginally increases the R^2 by 0.004 to 0.886.

To corroborate our initial findings and ensure that we do not simply capture a mechanical effect, we compare the incremental adjusted R^2 of the executive fixed effect using another statistical technique that randomly simulates the respective executive's tenure period. The simulated executive tenure holds the number of executives per subsidiary constant, but randomly assigns the tenure period. If the actual executives exert that 'managerial tax avoidance style', then the incremental adjusted R^2 of the actual CEOs/CFOs should exceed the incremental adjusted R^2 of the randomly simulated tenure periods.

In columns 6 and 7, we observe almost identical adjusted R^2 when adding simulated CEO and CFO fixed effects. Importantly, the actual increases in the explanatory power of the models in columns 4 and 5 do not exceed these simulated fixed effects, which suggests that CEOs and CFOs do not add any explanatory power to the model.

In columns 8 to 10, we additionally control for profit shifting (*C-Score*) incentives, which reduces the sample to some extent. Again, we do not find an increase in the adj. R^2 when including CEO or CFO fixed effects.[13]

These results indicate that CEOs and CFOs do not marginally affect the allocation of pre-tax income and consequently profit shifting, whereas subsidiary characteristics are explaining the level of pre-tax income to a large extent.

<<< Insert Table 3 here >>>

Next, Table 4 presents results with different fixed effects specifications using ETR as the dependent variable. Generally, we observe a similar pattern as in Table 3 but at a lower level of adjusted R^2. Column 1 presents results for a specification without any fixed effects. The adjusted R^2 is 0.074 and increases slightly to 0.077 when adding year fixed effects

[13] The adjusted R^2 even decreases by more than 10 percentage points when controlling simultaneously for CEO and CFO fixed effects. However, the sharp decrease in adjusted R^2 is mainly attributed to the fact that CEO and CFO fixed effects are highly correlated, for example, if a CEO and CFO have the same tenure period. Thus, in these cases, the additional fixed effects do not add to the explanatory power of the model, but R^2 is adjusted for the additional variables.

(column 2). In column 3, we add subsidiary fixed effects (equation 1). Including subsidiary fixed effects increases the explanatory power significantly to an adjusted R^2 of 0.536. This result is consistent with prior literature suggesting that time-invariant subsidiary characteristics are a key determinant in explaining tax avoidance metrics of foreign subsidiaries (Markle 2016).

In columns 4 to 5, we alter the fixed effects structures by adding MNC parent's CEO and CFO fixed effects. This research design allows comparing the incremental explanatory power of CEOs or CFOs over subsidiary characteristics. First, we add CEO fixed effects in column 4 and find a lower adjusted R^2 (0.526) compared to column 3 which only includes year and subsidiary fixed effects. The difference between the adjusted R^2 is -1.9 percent. This provides support for the argument that subsidiaries' tax management is largely explained by time-invariant subsidiary characteristics rather than parents' executive characteristics. Based on the argument that CFOs are directly responsible for the tax department, we use in the next step equation (3) which includes CFO instead of CEO fixed effects. Compared to column 3, we find a higher adjusted R^2 of 0.532 which reflects a decrease of 0.75 percent. This provides initial evidence that time-invariant subsidiary characteristics are the main determinants in explaining their tax avoidance.

We present results for simulated CEO and CFO fixed effects in columns 6 and 7. Consistent with our initial findings, we observe similar levels of adjusted R^2 as for the actual CEO and CFO fixed effects specifications. Results are unchanged when we add C-Score to account for subsidiaries' profit-shifting incentives. Taken together, the results of Table 4 indicate that parents' executives fixed effects do not increase the explanatory power of subsidiaries' tax avoidance. These findings suggest that mainly time-invariant subsidiary characteristics are the driving factors in explaining their tax avoidance.

<<< Insert Table 4 here >>>

Next, we use F-test to statistically formalize comparisons between different model specifications and better understand if parents' executives have a significant impact on subsidiaries' pretax income and ETRs. Table 5 presents comparisons starting with the restricted model and then subsequently adding the actual executive fixed effects and simulated fixed effects. This comparison allows us not only to assess increased explanatory power for adding different fixed effects but also to assess differences between actual and simulated fixed effects.

In Panel A, we start by comparing the restricted model (that does not include any fixed effects) with a model that includes year fixed effects (column 1) and subsidiary fixed effects (column 2). For the actual fixed effects in column 2, for example, the F-test indicates that the inclusion of subsidiary fixed effects significantly increases the adjusted R^2 (F-test: 19.113, significant at the 1% level). In contrast, when adding *simulated* subsidiary fixed effects, the F-test shows that the explanatory power does not increase significantly (F-test: 1.015). We conclude that adding year subsidiary fixed effects increases the explanatory power compared to a (randomly) simulated subsidiary fixed effect.

In columns 3 and 4, we additionally add CEO and CFO fixed effects, respectively. In both columns, we find statistically significant F-Statistics. However, the values are even lower compared to the simulated fixed effects. Stated differently, we do not find evidence that executive fixed effects provide a higher explanatory power but that underlying firm characteristics (independent of executives) explain variation in subsidiaries' tax management metrics. These results corroborate our initial findings using a different statistical method. In Panel B, we find similar results for the effective tax rate analyses.

<<< Insert Table 5 here >>>

4.2 Cross-Sectional Analyses of Information Asymmetries and Monitoring within MNCs

To bridge our baseline findings with prior literature that documents a significant role of parent executives, we next examine instances where we expect parent executives to affect subsidiary tax avoidance metrics to a certain extent. Prior literature provides evidence that information asymmetries and weak monitoring within MNCs affect parent CEOs' and CFOs' ability to manage local subsidiaries' operations (Shroff et al. 2014; Amberger et al. 2021). To test this assertion, we use three proxies to split our sample based on the degree of information asymmetry between the parent executives and the subsidiaries. We expect a stronger explanatory power for subsidiaries subject to low information asymmetry because they are less prone to internal agency conflicts and hence parent executives have a higher explanatory power.

First, we bifurcate our sample based on whether the parent and the subsidiary operate in the same industry. If a parent operates in the same industry as its subsidiary (same one-digit NACE code), then we expect that the parent executives have more information about subsidiary operations and tax management. We use again equation (3) for comparisons of actual and simulated fixed effects and split our sample depending on whether the subsidiary is in the same industry as the U.S. parent. For subsidiaries operating in the same industry as their parent (i.e., *SAMEIND* =1), we expect a higher (positive) difference between actual and simulated fixed effects. We expect no difference for subsidiaries operating in different industries (i.e., *SAMEIND* =0). Second, we divide the sample based on the extent to which the subsidiary's management team includes U.S. expatriate managers. The employment of expatriate managers in foreign subsidiaries diminishes cross-border frictions between the parent executives and subsidiaries, improving information transfers within the MNC. To this end, we merge our sample with Orbis manager data to identify whether a subsidiary manager

has U.S. nationality. Correspondingly, we use *EXPAT* which is an indicator variable equal to one if the subsidiary's management team includes a manager that has U.S. nationality. We also use *EXPAT_MAJ* which is coded one if at least 50 percent of the members of the subsidiary management team have U.S. nationality.

Second, we investigate whether parent executives affect subsidiaries' tax management to a greater extent when monitoring costs are low. If parent executives face lower monitoring costs, then they should have greater explanatory power for explaining subsidiaries' tax planning activities. To test the role of monitoring, we bifurcate our sample based on the ownership percentage of parents in the respective subsidiary. We use an indicator variable for full ownership (*FO*), which is coded one if the subsidiary is 100 percent owned by the U.S. parent and zero otherwise.

We present the results in Table 6, Panel A for specifications including CEO fixed effects using ETR as the dependent variable. Columns 1 and 2 (3 and 4) present the results for actual and simulated fixed effects for firm-year observations of subsidiaries that operate in the same (different) industry as their U.S. parent. For subsidiaries operating in the same industry, the difference between the adjusted R^2 of actual and simulated fixed effects is 0.013 whereas the difference is 0.002 for MNCs that operate in the same industry. This provides some evidence that CEOs affect subsidiaries' ETR to a greater extent in MNCs where information asymmetry is lower. We repeat these analyses partitioning the sample based on whether subsidiaries have U.S. managers on their board in columns 5 to 8. Here, we find that the difference between the actual fixed effects and the simulated fixed effects for subsidiaries with U.S. managers is 4 percentage points, much higher compared to the results of columns 1 to 4. The effect of U.S. managers is much more pronounced if the majority of the local management is from the U.S. (17.7 percentage points in columns 9 and 10). Turning to sample partitioning based on monitoring costs (columns 13 to 16), we do not find significant

differences between the adjusted R^2 of actual and simulated fixed effects. We find similar results for the CFO fixed effects in Panel B of Table 6.

In untabulated tests, we do not find higher explanatory power of actual fixed effects compared to simulated fixed effects for specifications using *lnPTI* as the dependent variable. Overall, the results in Table 6 provide some evidence that CEOs/CEOs affect the local subsidiaries' effective tax rates (but not pre-tax income) in the presence of U.S. managers on the board of the subsidiaries.

<<< Insert Table 6 here >>>

4.3 Parent Executive Ability

Prior literature suggests that executives' abilities explain MNCs' tax avoidance (Koester et al. 2017). Based on the rationale that higher-ability executives allocate corporate resources more efficiently and identify tax planning opportunities, managerial ability might also facilitate subsidiaries' tax avoidance. For example, high-ability managers can affect subsidiaries' tax avoidance by increasing the level of pre-tax income in low-tax jurisdictions or identifying tax avoidance opportunities for the respective subsidiary. To investigate the role of managerial ability in our setting, we first add the managerial ability score (*MASCORE*) developed by (Demerjian et al. 2012) in our baseline regression that includes subsidiary and year fixed effects. Table 7 presents the results.

High-ability group executives can increase tax planning in foreign subsidiaries by increasing foreign subsidiaries' profitability via profit shifting (Koester et al. 2017). Based on this rationale, we use equation (9) that regresses *lnPTI* on subsidiary variables including *MASCORE*. In column 1, we find a positive and significant coefficient on *MASCORE*. This indicates that high-ability parent executives increase income in subsidiaries resulting in higher income-shifting opportunities. To investigate whether high-ability managers increase income in low tax jurisdictions more, which would be indicative of income shifting, we

include the interaction of *MASCORE x lowSTR*. Column 2 indicates that there is no incremental effect of high-ability managers allocating income to low-tax jurisdictions. This suggests that high-ability managers increase income both in high and low tax jurisdictions. Prior literature finds that MNCs rely on intangible assets to lower effective tax rates and shift income to low tax jurisdictions. Based on this rationale, we use the tax rate on intangible assets (provided by patent box regimes) instead of the statutory tax rate in column 3. Again, we do not find a significant coefficient on the interaction term *MASCORE x lowIPTR*. Taken together, these results are *in*consistent with the notion that higher-ability managers increase income shifting in low-tax subsidiaries.

For the ETR regressions, we find that the coefficient on *MASCORE* is insignificant ($p > 0.10$). To further investigate the role of managerial ability in exploiting lower statutory tax rates, we use equation (8) in column 5. Equation (8) includes an interaction of managerial ability and an indicator variable equal to one for subsidiaries with statutory tax rates of the bottom quartile of the sample (*MASCORE x lowSTR*). The coefficient on *MASCORE x lowSTR* is insignificant, indicating that high-ability also does not alter ETRs in low-tax jurisdictions. Inferences are unchanged when using IP tax rates in column 6. Overall, these findings indicate that managerial ability does not affect ETRs of subsidiaries.

<<< Insert Table 7 here >>>

5. Subsidiary Management Team Fixed Effects

In our second hypothesis, we examine the role of *subsidiary* executives in subsidiary tax management. We focus on ETR as a tax management measure because it is less likely that subsidiary managers affect the allocation of pre-tax income.

For the subsidiary executive analyses, the sample selection is similar, with the exception that we require fewer control variables (*lnFIXAS)* and merge the sample with Orbis

data to identify changes in the executive teams. The final sample for the subsidiary executive analyses consists of 5,809 subsidiary-year observations. Panel A of Table 8 summarizes the sample selection.

The descriptive statistics of the subsidiary executive analyses are displayed in Panel B of Table 8. Overall, the sample properties are very similar to the descriptive statistics of Table 2. For example, the effective tax rate is 28% and ROA is 13%, on average.

Table 8, panel C presents baseline regressions using *ETR* as a dependent variable. Similar to our analyses at the parent level, we find an increase in adjusted R^2 when including country-year and subsidiary fixed effects (columns 1 to 3). In column 3, the adjusted R^2 is 0.49. In contrast to our analyses at the parent level, we find an increase in the adjusted R^2 to 0.558 when including executive team fixed effects in column 4. However, column 5 indicates that the increase in the adjusted R^2 is similar when including simulated executive team fixed effects. Based on these findings, it seems that subsidiary executives do not have, on average, a significant impact on subsidiary tax avoidance.

Next, we exploit cross-sectional differences in subsidiary characteristics to investigate whether subsidiaries differ in their tax avoidance. First, we bifurcate our sample at the median of statutory tax rates. This is based on the rationale that more income is shifted to subsidiaries in low-tax countries and subsidiary executives can leverage local tax knowledge to reduce ETRs. Table 8, panel D presents the results. Consistent with this argument, we find in columns 1 to 4 that the adjusted R^2 for actual fixed effects (column 1) in low tax subsidiaries is higher than the simulated fixed effects (column 2). We do not find a similar pattern for subsidiaries located in high tax countries (columns 3 and 4). These results indicate that subsidiary executives incrementally explain tax avoidance behavior in low-tax countries because there is more potential through lower statutory tax rates. We find a similar pattern when bifurcating our sample at the median of *C-Score*.

Next, we investigate whether subsidiary executives explain tax avoidance to a greater extent when subsidiaries are relatively more important and can create more tax savings for the MNC (Feller and Schanz 2017). To test this, we bifurcate our sample at the median of subsidiary size. Consistent with this argument, we find a higher explanatory power of actual fixed effects compared to simulated fixed effects for larger subsidiaries but not for small subsidiaries. Overall, these findings indicate that, on average, subsidiary executives do not incrementally explain tax avoidance behavior of subsidiaries. However, subsidiary executives incrementally explain tax avoidance behavior in low-tax countries, subsidiaries to which profit is shifted, and relatively larger subsidiaries.

<<< Insert Table 8 here >>>

6. Robustness Tests and Additional Results

6.1 Timing of the CEO Effects

In our baseline tests reported in Table 3 and Table 4, we include the executive fixed effects in line with the fiscal year reported in the Compstat ExecuComp database. However, executive changes also take place during the year and it may take time for the respective executive to exert their managerial tax avoidance style, especially related to foreign subsidiaries. Therefore, we assume that the CEO and CFO fixed effect materializes one year later and change the sample accordingly. In Panel A of Table 9, we find similar results when all variables except for executives fixed effects at year *t+1*, i.e., we do not find that CEO or CFO fixed effects increase the explanatory power of the regression models.

<<< Insert Table 9 here >>>

6.2 Time-varying Control Variables

In Panel B of Table 9, we repeat our main analyses but do not include time-varying control variables that might be affected by executives. For example, executives might use

inter-company loans to shift profits among subsidiaries, and therefore including leverage as a control variable might be the reason why the executive fixed effects do not increase the explanatory power of the models. However, in Panel B of Table 9, we only include *SIZE* and *lnGDP* in the models, which are less likely to be impacted by the executives and find similar results. Again, the inclusion of CEO and CFO fixed effects does not increase the explanatory power of the models.

6.3 Country-by-Country Results

In Table 10, we provide analyses separately for each subsidiary country with at least 200 observations. Panel A shows the results of the ETR regressions and Panel B the results of the pre-tax income regressions. The differences provided in the table are calculated as the adjusted R^2 of the full model including the respective executive fixed effects minus the adjusted R^2 of the reduced model that only includes year and subsidiary fixed effects. In four out of five cases, the adjusted R^2 for the CEO fixed effects are negative for the *lnPTI* regressions in Panel A. For the specifications using ETR as the dependent variable, we find that including CEO fixed effects reduces the adjusted R^2 in three out of five cases. Similarly, the adjusted R^2s are often reduced when including the CFO fixed effects (four out of five for *lnPTI* regressions in Panel A, three out of five for pre-tax income in Panel B). Only for the UK, we find that including CEO/CFO fixed effects increases the adjusted R^2 by an economically meaningful amount in Panel A. For panel B, we find that including CEO/CFO fixed effects increases the adjusted R^2 by an economically meaningful amount for Belgium and the UK. While the results are to some extent volatile, likely due to the reduced number of observations, we do not find evidence, on average, that the inclusion of executive fixed effects increases the explanatory power of the models.

<<< Insert Table 10 here >>>

6.4 U.S. Parent-Level Results

The hypothesis of this study is built on the findings of Dyreng et al. (2010), who show that executives affect corporate tax avoidance. Our results show that executives *do not* affect tax avoidance of foreign subsidiaries. However, the sample of Dyreng et al. (2010) includes the years 1992 to 2006, whereas our sample includes 2010 to 2020. Thus, the sample periods do not overlap. One possible explanation for our null result might simply be that executives do not affect corporate tax avoidance anymore. For example, executive styles might not be as pronounced in more recent years due to changes in regulations, increased media attention, and more complex international tax rules that allow for less tax planning. Therefore, we replicate the previous findings using Compustat data from 2006 to 2020 in Appendix B, using the same methodology as in our Amadeus sample.

In Table B2, we find that including CEO fixed effects increased the adjusted R^2 by 7.25% (2.5 percentage points), and CFO fixed effects increase the adjusted R^2 by 11.3% (3.9 percentage points). Recall, in Table 3 the percent increases in adjusted R^2 are -0.75 and 1.69 respectively. Therefore, we conclude that executives still affect the overall firm-level tax avoidance of MNCs, but not tax avoidance of their foreign subsidiaries located in Europe.

Additionally, we examine if executives engage in profit-shifting. At the group level, however, we cannot use the level of pre-tax income as the dependent variable, as more or less profit shifting does not affect the groups' pre-tax income (not considering the costs of profit shifting). Instead, we use the ratio of foreign profits to total profits and argue that the managerial tax avoidance style should manifest in the location where profits are reported. In Table B3, we find that CEO and CFO fixed effects indeed increase the adjusted R^2, which is consistent with the idea that managers affect profit shifting. However, the level of reported income abroad relative to total income can similarly be affected by investment decisions that are unrelated to tax avoidance.

7. Conclusion

In this paper, we examine if parent and subsidiary executives affect tax avoidance of their foreign subsidiaries. While prior research finds that managerial style and abilities shape firms' tax avoidance (Dyreng et al. 2010; Koester et al. 2017), we do not find that parent executives, on average, do not affect foreign subsidiaries' tax management of their European subsidiaries, i.e. the adjusted R^2 does not increase. Instead, subsidiaries' tax management is largely explained by time-invariant subsidiary characteristics, and partly by local subsidiary executives in low-tax countries and in larger subsidiaries.

Our findings contribute to the literature by providing insights into the role of executives versus organizational characteristics as driving factors of tax avoidance of subsidiaries. This enhances our understanding of the role of executives in tax avoidance decisions of multinational firms and complements prior literature that indicates a more significant role of executives in the overall tax avoidance strategy of these firms.

While our results show that parents' executives do not incrementally explain tax avoidance or profit shifting of foreign subsidiaries, we acknowledge that our European sample consists mainly of developed countries that are not classified as tax havens. As such, our results cannot be generalized to unobservable tax haven subsidiaries. In particular, it might be that the managerial tax avoidance style mainly manifests in profit shifting to tax havens, but not in foreign subsidiaries with major economic activities.

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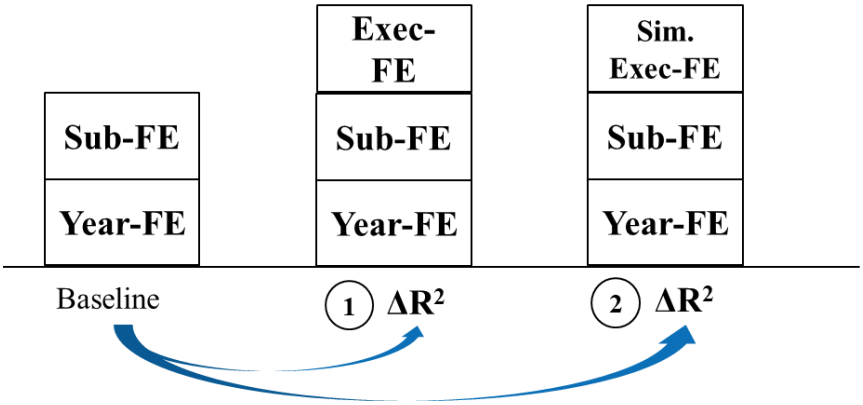
Figures

Figure 1: Empirical Approach



Notes: This figure provides an overview of the empirical approach that this paper uses by comparing the R^2 of specifications applying different fixed effects factors.

Tables

Table 1: Sample selection

US-owned subs with >50% direct shareholdings	37,272 (subsidiaries)
Merge: Unconsolidated financials with non missing 'pblt', 'fias', and 'staf'	66,208 (subsidiary-years)
Merge: ExecComp Data with non-missing CEO and CFO	7,895 (subsidiary-years)
Merge: Worldbank Data by country-year	7,795 (subsidiary-years)
Less: non-negative pre-tax income and total assets	6,330 (subsidiary-years)
Less: Missing tax information	5,971 (subsidiary-years)
Less: ETR < 0 & ETR >= 1	5,520 (subsidiary-years)
Less: year < 2010 & year > 2020	5,494 (subsidiary-years)
Less: one CEO or CFO per firm (376 unique subsidiaries)	2,909 (subsidiary-years)

Notes: This table shows the sample selection.

Table 2: Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(50)	Pctl(75)	Max
ETR	2,909	0.26	0.16	0.00	0.16	0.25	0.34	0.79
SIZE	2,909	16.03	2.02	11.41	14.58	15.95	17.40	21.35
ROA	2,909	0.14	0.13	0.003	0.05	0.10	0.18	0.72
LEV	2,909	0.50	0.26	0.02	0.28	0.49	0.70	1.01
lnPTI	2,909	13.59	2.10	8.85	12.11	13.57	15.07	18.81
lnEMPL	2,909	14.87	1.69	11.01	13.80	14.84	16.01	19.37
lnFIXAS	2,909	12.60	4.36	0.00	10.91	13.05	15.33	20.69
lnGDP	2,909	27.30	1.19	24.40	26.32	27.02	28.58	29.01
MASCORE	2,444	0.07	0.18	-0.27	-0.06	0.02	0.16	0.68
STR	2,814	0.26	0.08	0.09	0.19	0.25	0.33	0.44
IPTR	2,611	0.15	0.07	0.00	0.08	0.16	0.20	0.31
C-Score	2,251	0.02	0.10	-0.24	-0.05	0.02	0.11	0.27

Notes: *ETR* is the effective tax rate calculated as tax expense divided by pre-tax income (Amadeus: taxa/plbt). *SIZE* is the natural logarithm of total assets in Euro (Amadeus: toas* exchrate2). *ROA* is return on assets (Amadeus: plbt/ toas). *LEV* is debt divided by equity (Amadeus: (toas-shfd)/toas). *lnPTI* is the natural logarithm of pre-tax income (Amadeus: plbt+1). *lnEMPL* is the natural logarithm of the costs of employees (Amadeus: staf+1). *lnFIXAS* is the natural logarithm of fixed assets (Amadeus: fias+1). *lnGDP* is the natural logarithm of GDP in US Dollar (Worldbank data item: NY.GDP.MKTP.CD). *MASCORE* is the managerial ability score in line with Demerjian et al. (2012). *STR* is the statutory tax rate from the OECD database (Item: CIT_RATE). IPTR is the statutory tax rate applied to intangible income granted by patent boxes (provided by KPMG Corporate Tax Rates and PWC Worldwide Tax Summaries). *#MAN* is the size of the management team. All continuous variables, except for *STR, IPTR,* and *MASCORE*, are winsorized at the 1st and 99th percentiles.

Table 3: The effect of CEOs and CFOs on the subsidiaries' pre-tax income (parent executives analyses)

	Dependent variable: *lnPTI*									
	Year and firm fixed effects only			+ CEO FE	+ CFO FE	+Sim. CEO FE	+ Sim. CFO FE		+ CEO FE	+ CFO FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ln_EMPL	0.729***	0.727***	0.641***	0.640***	0.645***	0.564***	0.600***	0.579***	0.597***	0.586***
	(0.052)	(0.052)	(0.068)	(0.070)	(0.073)	(0.070)	(0.069)	(0.081)	(0.086)	(0.091)
ln_FIXAS	0.137***	0.138***	0.044**	0.050***	0.037*	0.039*	0.038*	0.049**	0.064***	0.052**
	(0.023)	(0.023)	(0.018)	(0.017)	(0.019)	(0.021)	(0.021)	(0.023)	(0.023)	(0.025)
ln_GDP	-0.139***	-0.140***	-0.642*	-0.715**	-0.936**	-0.512	-0.384	-0.380	-0.527	-1.038**
	(0.051)	(0.051)	(0.352)	(0.363)	(0.397)	(0.377)	(0.387)	(0.398)	(0.397)	(0.405)
C-Score								1.106**	0.597	1.538***
								(0.515)	(0.590)	(0.565)
Constant	4.842***									
Year FE		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sub FE			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO FE				Yes					Yes	
CFO FE					Yes					Yes
Sim. CEO FE						Yes				
Sim. CFO FE							Yes			
Sub Cluster SE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,909	2,909	2,909	2,909	2,909	2,909	2,909	2,251	2,251	2,251
R^2	0.601	0.603	0.898	0.916	0.921	0.919	0.921	0.910	0.924	0.929
Adjusted R^2	**0.601**	**0.601**	**0.882**	**0.882**	**0.886**	**0.886**	**0.886**	**0.892**	**0.886**	**0.891**
Δ adj. R^2			**Δ to (3)**	**0.000**	**0.004**	**0.004**	**0.004**	**Δ to (8):**	-0.006	0.005
% adj. R^2			**% to (3)**	**0.000**	**0.451**	**0.451**	**0.451**	**% to (8):**	-0.677	0.561

Notes: *lnPTI* is the natural logarithm of pre-tax income (Amadeus: plbt+1). *lnEMPL* is the natural logarithm of the costs of employees (Amadeus: staf+1). *lnFIXAS* is the natural logarithm of fixed assets (Amadeus: fias+1). *lnGDP* is the natural logarithm of GDP in US Dollar (Worldbank data item: NY.GDP.MKTP.CD). All continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% level, respectively.

Table 4: The effect of CEOs and CFOs on the subsidiaries' effective tax rate (parent executives analyses)

	Dependent variable: *ETR*									
	Year and firm fixed effects only			+ CEO FE	+ CFO FE	+Sim. CEO FE	+ Sim. CFO FE		+ CEO FE	+ CFO FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
SIZE	-0.005*	-0.005*	-0.009	-0.005	-0.008	-0.003	-0.006	0.001	0.004	0.003
	(0.003)	(0.003)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
ROA	-0.135***	-0.138***	-0.216***	-0.212***	-0.212***	-0.218***	-0.218***	-0.210***	-0.197***	-0.192***
	(0.034)	(0.034)	(0.030)	(0.033)	(0.034)	(0.033)	(0.032)	(0.035)	(0.037)	(0.038)
LEV	0.138***	0.135***	0.052***	0.040**	0.062***	0.049**	0.057***	0.028	0.021	0.045**
	(0.022)	(0.022)	(0.019)	(0.018)	(0.019)	(0.021)	(0.021)	(0.022)	(0.023)	(0.022)
C-Score								0.109	0.079	0.080
								(0.079)	(0.083)	(0.084)
Constant	0.296***									
Year FE		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sub FE			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CEO FE				Yes					Yes	
CFO FE					Yes					Yes
Sim. CEO FE						Yes				
Sim. CFO FE							Yes			
Sub Cluster SE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,909	2,909	2,909	2,909	2,909	2,909	2,909	2,251	2,251	2,251
R^2	0.075	0.081	0.598	0.664	0.676	0.661	0.678	0.624	0.686	0.695
Adjusted R^2	**0.074**	**0.077**	**0.536**	**0.526**	**0.532**	**0.522**	**0.536**	**0.553**	**0.531**	**0.534**
Δ adj. R^2			**Δ to (3)**	**-0.010**	**-0.004**	**-0.014**	**0.000**	**Δ to (8):**	**-0.022**	**0.003**
% adj. R^2			**% to (3)**	**-1.901**	**-0.752**	**-2.682**	**0.000**	**% to (8):**	**-4.143**	**0.562**

Notes: *ETR* is the effective tax rate calculated as tax expense divided by pre-tax income (Amadeus: taxa/plbt). *SIZE* is the natural logarithm of total assets in Euro (Amadeus: toas* exchrate2). *ROA* is return on assets (Amadeus: plbt/ toas). *LEV* is debt divided by equity (Amadeus: (toas-shfd)/toas). All continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% level, respectively.

Table 5: F-test comparisons of actual vs simulated fixed effects (parent executives analyses)

Panel A: Pre-tax income

Compared to Model without FE			**Compared to Model with Year and Firm FE**		
Restricted Model: $lnPTI_t = \beta_1 + \beta_2 lnEMPL_t + \beta_3 lnFIXAS_t + \beta_4 lnGDP_t + \varepsilon$			Restricted Model: $lnPTI_t = \beta_1 + \beta_2 lnEMPL_t + \beta_3 lnFIXAS_t + \beta_4 lnGDP_t + YEAR\ FE + Sub\ FE + \varepsilon$		
	(1)	(2)		(3)	(4)
	+ Year FE	+ Sub FE		+ CEO	+ CFO
(1) Actual	1.104	19.113 ***	(1) Actual	1.907 ***	2.111 ***
(2) Simulated	1.610	1.015	(2) Simulated	2.268 ***	2.121 ***
Diff (1) - (2)	**-0.506**	**18.098**	**Diff (1) - (2)**	**-0.361**	**-0.010**

Panel B: Effective tax rates

Compared to Model without FE			**Compared to Model with Year and Firm FE**		
Restricted Model: $ETR_t = \beta_1 + \beta_2 SIZE_t + \beta_3 ROA_t + \beta_4 LEV_t + \varepsilon$			Restricted Model: $ETR_t = \beta_1 + \beta_2 SIZE_t + \beta_3 ROA_t + \beta_4 LEV_t + YEAR\ FE + Sub\ FE + \varepsilon$		
	(1)	(2)		(3)	(4)
Unrestricted:	+ Year FE	+ Sub FE	Unrestricted:	+ CEO FE	+ CFO FE
(1) Actual	1.996 **	8.657 ***	(1) Actual	1.652 ***	1.616 ***
(2) Simulated	0.951	0.958	(2) Simulated	1.584 ***	1.764 ***
Diff (1) - (2)	**1.045**	**7.699**	**Diff (1) - (2)**	**0.068**	**-0.148**

Notes: *ETR* is the effective tax rate calculated as tax expense divided by pre-tax income (Amadeus: taxa/plbt). *SIZE* is the natural logarithm of total assets in Euro (Amadeus: toas* exchrate2). *ROA* is return on assets (Amadeus: plbt/ toas). *LEV* is debt divided by equity (Amadeus: (toas-shfd)/toas). *lnPTI* is the natural logarithm of pre-tax income (Amadeus: plbt+1). *lnEMPL* is the natural logarithm of the costs of employees (Amadeus: staf+1). *lnFIXAS* is the natural logarithm of fixed assets (Amadeus: fias+1). *lnGDP* is the natural logarithm of GDP in US Dollar (Worldbank data item: NY.GDP.MKTP.CD). All continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% level, respectively.

Table 6: Cross-sectional analyses of information asymmetries and monitoring (parent executives analyses)

Panel A: CEO Fixed Effects

	Dependent variable: *ETR*															
	SAMEIND=1		*SAMEIND*=0		*EXPAT* = 1		*EXPAT* = 0		*EXPAT_MAJ* = 1		*EXPAT_MAJ* = 0		*FO* = 1		*FO* = 0	
	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Observations	893	893	2,016	2,016	506	506	648	648	187	187	967	967	1,552	1,552	1,357	1,357
Adjusted R^2	0.546	0.533	0.503	0.501	0.502	0.462	0.494	0.467	0.446	0.269	0.504	0.476	0.522	0.524	0.524	0.517
Δ adj. R^2	**0.013**		**0.002**		**0.040**		**0.027**		**0.177**		**0.028**		**-0.002**		**0.007**	

Panel B: CFO Fixed Effects

	Dependent variable: *ETR*															
	SAMEIND=1		*SAMEIND*=0		*EXPAT* = 1		*EXPAT* = 0		*EXPAT_MAJ* = 1		*EXPAT_MAJ* = 0		*FO* = 1		*FO* = 0	
	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Observations	893	893	2,016	2,016	506	506	648	648	187	187	967	967	1,552	1,552	1,552	1,357
Adjusted R^2	0.557	0.550	0.503	0.514	0.520	0.477	0.440	0.457	0.398	0.313	0.479	0.481	0.528	0.528	0.526	0.533
Δ adj. R^2	**0.007**		**-0.011**		**0.043**		**-0.017**		**0.085**		**-0.002**		**0.002**		**-0.009**	

Notes: *ETR* is the effective tax rate calculated as tax expense divided by pre-tax income (Amadeus: taxa/plbt). *SAMEIND* is coded one if the subsidiary is in the same industry as the U.S. parent. *EXPAT* is coded one if the subsidiary's management team includes a manager that has U.S. nationality. *EXPAT_MAJ* is coded one if at least 50 percent of the members of the subsidiary management team have U.S. nationality. *FO* is coded one if the subsidiary is 100 percent owned by the U.S. parent.

Table 7: Managerial abilities (parent executives analyses)

	Dependent variable:					
	lnPTI			*ETR*		
	(1)	(2)	(3)	(4)	(5)	(6)
lnEMPL	0.625***	0.620***	0.624***			
	(0.068)	(0.069)	(0.068)			
lnFIXAS	0.028	0.028	0.028			
	(0.019)	(0.019)	(0.019)			
lnGDP	-0.810*	-1.075**	-0.816*			
	(0.434)	(0.515)	(0.436)			
SIZE				-0.012*	-0.012	-0.012*
				(0.007)	(0.007)	(0.007)
ROA				-0.212***	-0.211***	-0.212***
				(0.035)	(0.036)	(0.035)
LEV				0.052**	0.054**	0.051**
				(0.023)	(0.023)	(0.023)
MASCORE	**0.521*** **	**0.540*** **	**0.629*** **	**-0.035**	**-0.027**	**-0.027**
	(0.159)	**(0.176)**	**(0.169)**	**(0.025)**	**(0.032)**	**(0.031)**
lowSTR		-0.287			-0.028	
		(0.207)			(0.020)	
MASCORE x lowSTR		**-0.093**			**-0.024**	
		(0.398)			**(0.048)**	
MASCORE_x lowIPTR			**-0.373**			**-0.029**
			(0.394)			**(0.057)**
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Sub FE	Yes	Yes	Yes	Yes	Yes	Yes
Sub. Cl. SE	Yes	Yes	Yes	Yes	Yes	Yes
N	2,444	2,365	2,444	2,444	2,365	2,444
R^2	0.903	0.902	0.903	0.615	0.616	0.616
Adjusted R^2	0.886	0.884	0.886	0.546	0.546	0.546

Notes: *ETR* is the effective tax rate calculated as tax expense divided by pre-tax income (Amadeus: taxa/plbt). *SIZE* is the natural logarithm of total assets in Euro (Amadeus: toas* exchrate2). *ROA* is return on assets (Amadeus: plbt/ toas). *LEV* is debt divided by equity (Amadeus: (toas-shfd)/toas). *lnPTI* is the natural logarithm of pre-tax income (Amadeus: plbt+1). *lnEMPL* is the natural logarithm of the costs of employees (Amadeus: staf+1). *lnFIXAS* is the natural logarithm of fixed assets (Amadeus: fias+1). *lnGDP* is the natural logarithm of GDP in US Dollar (Worldbank data item: NY.GDP.MKTP.CD). *MASCORE* is the managerial ability score in line with Demerjian et al. (2012). *lowSTR* is coded one if *STR*, the statutory tax rate from the OECD database (Item: CIT_RATE), is in the first (lowest) quartile, and zero otherwise. *lowIPTR* is coded one if *IPTR*, (provided by KPMG Corporate Tax Rates and PWC Worldwide Tax Summaries), is in the first (lowest) quartile, and zero otherwise. All continuous variables, with the exception of *STR, IPTR,* and *MASCORE*, are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% level, respectively.

Table 8: The effect of subsidiary management on subsidiaries' effective tax rate (subsidiary executives analyses)

Panel A: Sample selection

US-owned subs with >50% direct shareholdings	37,272 (subsidiaries)
Merge: Unconsolidated financials with non-missing 'pblt'	115,550 (subsidiary-years)
Merge: Orbis Data with non-missing management team information	14,280 (subsidiary-years)
Less: non-negative pre-tax income and total assets	10,022 (subsidiary-years)
Less: Missing tax information	9,239 (subsidiary-years)
Less: ETR < 0 & ETR >= 1	8,618 (subsidiary-years)
Less: one management team per firm	6,211 (subsidiary-years)
Less: at least 3 observation per firm	5,809 (subsidiary-years)

Panel B: Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(50)	Pctl(75)	Max
ETR	5,809	0.28	0.16	0.00	0.21	0.27	0.34	0.86
SIZE	5,809	16.18	1.82	11.70	14.98	16.14	17.22	21.71
ROA	5,809	0.13	0.13	0.003	0.04	0.09	0.17	0.74
LEV	5,809	0.49	0.27	0.02	0.27	0.48	0.72	1.00
STR	5,809	0.27	0.05	0.09	0.24	0.26	0.30	0.44
#MAN	5,809	4.33	2.91	1.00	2.00	4.00	6.00	32.00
C-Score	3,106	0.04	0.07	-0.21	-0.01	0.03	0.09	0.27

Panel C: Baseline Regressions

	Dependent variable: ETR				
	Country-Year and Firm FE only			Team FE	Simulated Team FE
	(1)	(2)	(3)	(4)	(5)
SIZE	-0.008***	-0.006***	-0.011**	-0.018*	-0.014*
	(0.002)	(0.002)	(0.005)	(0.009)	(0.007)
ROA	-0.138***	-0.089***	-0.246***	-0.284***	-0.256***
	(0.023)	(0.021)	(0.026)	(0.034)	(0.034)
LEV	0.120***	0.088***	0.065***	0.061**	0.028
	(0.014)	(0.013)	(0.017)	(0.025)	(0.025)
Constant	0.375***				
	(0.036)				
Country-Year	No	Yes	Yes	Yes	Yes
Sub FE	No	No	Yes	No	No
Team FE	No	No	No	Yes	No
Random Team FE	No	No	No	No	Yes
Sub Cluster SE	Yes	Yes	Yes	Yes	Yes
Observations	5,809	5,809	5,809	5,809	5,809
R^2	0.075	0.220	0.569	0.778	0.778
Adjusted R^2	**0.074**	**0.205**	**0.490**	**0.558**	**0.559**
Δ adj. R2 to (3)				**0.068**	**0.069**

Panel D: Cross-Sectional Results

Dependent variable: ETR												
	Low STR		High STR		Low C-Score		High C-Score		Large Subs		Small Subs	
	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE	FE	Sim. FE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Country-Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Team FE	Yes	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No
Sim. Team FE	No	Yes	No	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes
Sub Cluster SE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,871	2,871	2,938	2,938	1,567	1,567	1,539	1,539	2,905	2,905	2,904	2,904
R^2	0.798	0.795	0.812	0.801	0.828	0.824	0.813	0.844	0.809	0.800	0.778	0.785
Adjusted R^2	**0.528**	**0.493**	**0.605**	**0.607**	**0.579**	**0.532**	**0.557**	**0.596**	**0.567**	**0.542**	**0.562**	**0.577**
Δ adj. R2	**0.035**		**-0.002**		**0.047**		**-0.039**		**0.025**		**-0.015**	
Diff in Diff adj. R2	**0.037**				**0.086**				**0.040**			

Notes: *ETR* is the effective tax rate calculated as tax expense divided by pre-tax income (Amadeus: taxa/plbt). *SIZE* is the natural logarithm of total assets in Euro (Amadeus: toas* exchrate2). *ROA* is return on assets (Amadeus: plbt/ toas). *LEV* is debt divided by equity (Amadeus: (toas-shfd)/toas). *STR* is the statutory tax rate from the OECD database (Item: CIT_RATE). IPTR is the statutory tax rate applied to intangible income granted by patent boxes (provided by KPMG Corporate Tax Rates and PWC Worldwide Tax Summaries). All continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% level, respectively.

Table 9: Robustness tests (parent executives analyses)

Panel A: One-year time lag

	Effective Tax Rates (ETR_{t+1})			Pre-tax Income ($lnPTI_{t+1}$)		
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Year & SUB FE	Yes	Yes	Yes	Yes	Yes	Yes
CEO FE	No	Yes	No	No	Yes	No
CFO FE	No	No	Yes	No	No	Yes
Observations	2,871	2,871	2,871	2,871	2,871	2,871
Adjusted R^2	**0.523**	**0.51**	**0.516**	**0.877**	**0.879**	**0.884**
Δ adj. R^2 to (3)		**-0.013**	**-0.007**		**0.002**	**0.007**
% adj. R^2 to (3)		**-2.549**	**-1.357**		**0.228**	**0.792**

Panel B: No time-varying control variables

	Effective Tax Rates (*ETR*)			Pre-tax Income (*lnPTI*)		
Control Variables	No	No	No	No	No	No
Year & SUB FE	Yes	Yes	Yes	Yes	Yes	Yes
CEO FE	No	Yes	No	No	Yes	No
CFO FE	No	No	Yes	No	No	Yes
Observations	2,909	2,909	2,909	2,909	2,909	2,909
Adjusted R2	**0.518**	**0.510**	**0.514**	**0.867**	**0.87**	**0.874**
Δ adj. R2 to (3)		**-0.008**	**-0.004**		**0.003**	**0.007**
% adj. R2 to (3)		**-1.569**	**-0.778**		**0.345**	**0.801**

Notes: The panels provide adjusted R^2s for effective tax rate regressions and for pre-tax income regression. In Panel A, all variables except for the executive fixed effects are at year t+1. In Panel B, time-varying variables are not included except for *SIZE* in the ETR regressions and lnGDP in the pre-tax income regressions. *ETR* is the effective tax rate calculated as tax expense divided by pre-tax income (Amadeus: taxa/plbt). *lnPTI* is the natural logarithm of pre-tax income (Amadeus: plbt+1). All continuous variables are winsorized at the 1st and 99th percentiles.***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% level, respectively.

Table 10: Country-by-country results (parent executives analyses)

Panel A: The effect of CEOs and CFOs on the subsidiaries' pre-tax income (*lnPTI*)

	Belgium		France		Hungary		Spain		UK	
	+ CEO	+ CFO	+ CEO	+ CFO	+ CEO	+ CFO	+ CEO	+ CFO	+ CEO	+ CFO
Δ adj. R^2	-0.017	-0.007	-0.018	-0.013	-0.007	-0.006	-0.002	-0.008	0.030	0.043

Panel B: The effect of CEOs and CFOs on the subsidiaries' effective tax rate (*ETR*)

	Belgium		France		Hungary		Spain		UK	
	+ CEO	+ CFO	+ CEO	+ CFO	+ CEO	+ CFO	+ CEO	+ CFO	+ CEO	+ CFO
Δ adj. R^2	0.024	0.068	-0.064	-0.078	-0.108	-0.066	-0.025	-0.117	0.031	0.050

Notes: The panels provide differences in adjusted R^2s for effective tax rate regressions in Panel A and for pre-tax income regressions in Panel B. The differences are calculated as the adjusted R2 of the full model including the respective executive fixed effects minus the adjusted R2 of the reduced model that only includes year and subsidiary fixed effects. The table only includes countries with at least 200 observations.

Appendix A: Variable Definitions

Variable	Definition
C-Score	Income-shifting incentive associated with subsidiary *i* based on statutory corporate income tax rates. *C* is calculated by following Huizinga and Laeven (2008): $$C_{it} = \frac{1}{(1-\tau_{it})} * \frac{\sum_{k \neq i}^{n} \frac{K_{kt}}{(1-\tau_{kt})} * (\tau_{it} - \tau_{kt})}{\sum_{k \neq i}^{n} \frac{K_{k,t}}{(1-\tau_{kt})}}$$
ETR	Effective tax rate calculated as tax expense divided by pre-tax income (Amadeus: taxa/plbt).
EXPAT	Indicator variable equal to one if the subsidiary's management team includes a manager that has U.S. nationality (Orbis: Country of Nationality).
EXPAT_MAJ	Indicator variable equal to one if at least 50 percent of the members of the subsidiary management team have U.S. nationality (Orbis: Country of Nationality).
FO	Indicator variable equal to one if the subsidiary is 100 percent owned by the U.S. parent (Amadeus: ownership data).
IPTR	Statutory tax rate applied to intangible income granted by patent boxes (provided by KPMG Corporate Tax Rates and PWC Worldwide Tax Summaries).
LEV	Debt divided by equity (Amadeus: (toas-shfd)/toas).
lnEMPL	Natural logarithm of the costs of employees (Amadeus: staf+1).
lnFIXAS	Natural logarithm of fixed assets (Amadeus: fias+1).
lnGDP	Natural logarithm of GDP in US Dollar (Worldbank data item: NY.GDP.MKTP.CD).
lnPTI	Natural logarithm of pre-tax income (Amadeus: plbt+1).
#MAN	The size of the management team (Orbis).
MASCORE	Managerial ability score in line with Demerjian et al. (2012).
ROA	Return on assets (Amadeus: plbt/ toas).
SAMEIND	Indicator variable equal to one if the subsidiary is in the same industry (one-digit NACE code) as the U.S. parent (Amadeus: ownership data).
SIZE	Natural logarithm of total assets in Euro (Amadeus: toas* exchrate2).
STR	Statutory tax rate from the OECD database (Item: CIT_RATE).

Appendix B: Compustat Sample

Table B1: Compustat sample

Panel A: Sample selection

Compustat 1990 - 2021	389,504
Less: Missing fiscal year or industry format unquals INDL	353,779
Less: Missing CEO or CFO information from ExecuComp	29,186
Less: Missing control variables (LEV, SIZE, ROA)	27,563
Less: Negative pre-tax income	22.320
Less: ETR < 0, ETR > 0, or missing ETR	20,186
Less: Year = 2021	20,132
Less: Minimum 2 CEOs and CFOs per firm	12,680

Panel B: Descriptive statistics

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
ETR	12,680	0.27	0.12	0.01	0.20	0.35	0.66
SIZE	12,680	8.36	1.71	4.76	7.14	9.52	12.80
ROA	12,680	0.14	0.08	0.01	0.09	0.18	0.44
LEV	12,680	0.24	0.19	0.00	0.09	0.35	0.90
RELFOR	6,458	0.39	0.29	0.00	0.13	0.62	0.98

Notes: *ETR* is the effective tax rate calculated as tax expense divided by pre-tax income (Compustat: txt/(pi-spi)). *SIZE* is the natural logarithm of total assets in Euro (Compustat: ta). *ROA* is return on assets (Compustat: oibdp/ ta). *LEV* is debt divided by equity (Compustat: (dltt + dlc)/at). *RELFOR* is the relative portion of foreign pre-tax income to total pre-tax income (Compustat: pifo/(pifo+pidom)). All continuous variables are winsorized at the 1st and 99th percentiles.

Table B2: The effect of CEOs and CFOs on the groups' effective tax rate (ETR)

	Dependent variable: *ETR*					
	(1)	(2)	(3)	(4)	(5)	(6)
SIZE	-0.006***	-0.004***	-0.014***	-0.010*	-0.010	-0.009
	(0.001)	(0.001)	(0.004)	(0.006)	(0.006)	(0.008)
ROA	0.147***	0.120***	0.103***	0.122***	0.085**	0.088**
	(0.021)	(0.020)	(0.030)	(0.035)	(0.038)	(0.042)
LEV	-0.051***	-0.031***	-0.043***	-0.064***	-0.050***	-0.062***
	(0.009)	(0.009)	(0.014)	(0.017)	(0.018)	(0.019)
Constant	0.317***					
	(0.011)					
Year FE	No	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	Yes	Yes	Yes
CEO FE	No	No	No	Yes	No	Yes
CFO FE	No	No	No	No	Yes	Yes
Firm Cluster SE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,680	12,680	12,680	12,680	12,680	12,680
R^2	0.036	0.117	0.410	0.580	0.603	0.675
Adjusted R^2	**0.035**	**0.116**	**0.345**	**0.370**	**0.384**	**0.154**
Δ adj. R^2 to (3)				**0.025**	**0.039**	**-0.191**
% adj. R^2 to (3)				**7.25**	**11.30**	**-55.36**

Notes: *ETR* is the effective tax rate calculated as tax expense divided by pre-tax income (Compustat: txt/(pi-spi)). *SIZE* is the natural logarithm of total assets in Euro (Compustat: ta). *ROA* is return on assets (Compustat: oibdp/ ta). *LEV* is debt divided by equity (Compustat: (dltt + dlc)/at). All continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% level, respectively.

Table B3: The effect of CEOs and CFOs on the group's foreign income

	Dependent variable: *RELFOR*					
	(1)	(2)	(3)	(4)	(5)	(6)
SIZE	0.022***	0.022***	0.035***	0.009	0.014	0.008
	(0.006)	(0.006)	(0.012)	(0.015)	(0.016)	(0.019)
ROA	-0.269**	-0.270**	-0.562***	-0.541***	-0.533***	-0.545***
	(0.115)	(0.116)	(0.083)	(0.093)	(0.095)	(0.108)
LEV	-0.106**	-0.109**	0.095***	0.115***	0.102***	0.085**
	(0.043)	(0.045)	(0.031)	(0.032)	(0.034)	(0.035)
Constant	0.271***					
	(0.054)					
Year FE	No	Yes	Yes	Yes	Yes	Yes
Firm FE	No	No	Yes	Yes	Yes	Yes
CEO FE	No	No	No	Yes	No	Yes
CFO FE	No	No	No	No	Yes	Yes
Firm Cluster SE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	6,458	6,458	6,458	6,458	6,458	6,458
R^2	0.025	0.027	0.788	0.867	0.880	0.906
Adjusted R^2	**0.025**	**0.024**	**0.757**	**0.780**	**0.795**	**0.681**
Δ adj. R^2 to (3)				**0.023**	**0.038**	**-0.076**
% adj. R^2 to (3)				**3.04**	**5.02**	**-10.04**

Notes: *RELFOR* is the relative portion of foreign pre-tax income to total pre-tax income (Compustat: pifo/(pifo+pidom)). *SIZE* is the natural logarithm of total assets in Euro (Compustat: ta). *ROA* is return on assets (Compustat: oibdp/ ta). *LEV* is debt divided by equity (Compustat: (dltt + dlc)/at). All continuous variables are winsorized at the 1st and 99th percentiles. ***, **, and * denote two-sided statistical significance at the 1%, 5%, and 10% level, respectively.