The Effect of Changes in Income Shifting
on Local Managers' Financial Reporting Decisions

Kenneth J. Klassen
KPMG Professor of Taxation
School of Accounting & Finance
University of Waterloo
Email: kklassen@uwaterloo.ca

Cinthia Valle Ruiz
Department of Accounting
IESEG School of Management
Email: c.valleruiz@ieseg.fr

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Abstract

This paper examines the interplay between tax and financial reporting incentives within affiliates of multinational corporations (MNCs). Using granular data at the affiliate level of European MNCs for the period 2008-2015, our study provides new empirical evidence of a conflict of interest within MNCs. We show that income shifting is reduced when countries increase their transfer pricing enforcement, and notably that low tax-rate affiliates' income is also reduced when their associated high tax-rate affiliates experience an increase in enforcement. We also examine earnings management of affiliates and find that discretionary accruals generally follow firm-level tax incentives and are negatively correlated with countries' tax rates. However, when income shifting changes with changing country enforcement, discretionary accruals react in a manner opposite to that of income. This pattern of results is consistent with firms not adjusting the affiliate managers' incentives for changes in tax planning strategies and affiliates managing earnings to compensate.

Keywords: Multinational corporations, tax motivated profit-shifting, financial reporting practices, transfer pricing standards.

1. Introduction

This study examines the effects of international tax planning on the financial reporting behaviors of affiliates within multinational corporations (MNCs). There are two separate, but extensive, literatures on the earnings management of large corporations and on the global tax planning of MNCs. However, large corporations are made up of smaller business units, often organized into separate subsidiaries for tax and other reasons, that may be sprinkled across many countries. Each of these business units has its own managers with their own incentives. While there is some anecdotal evidence on how tax incentives and financial reporting incentives affect individual affiliates,[1] we still know very little about how MNCs' efforts to balance their group tax and profit goals affect the reporting of affiliates. This paper begins to fill that gap.

Corporate income is subject to different tax rates depending on the country where affiliates operate. Prior research has widely studied income-shifting in MNCs, documenting that both the costs and benefits affect corporate tax planning, generally, and that income-shifting for tax purposes driven by tax rate differences, specifically, as described more fully below. MNCs exploit differences in corporate tax rates within the group to artificially reduce global tax payments while increasing net profits by shifting from high to low tax jurisdictions. While the changes in pre-tax income that results from such shifting is eliminated within the consolidated MNC, the reduced income taxes improve the firm's net income.

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[1] For example, the European Commission has accused Fiat (FCA) of profit-shifting strategies using tax structures in Luxembourg, asserting the use of transfer prices that did not correspond to market conditions. Meanwhile, on July 18th, 2016, Fiat issued a statement confirming SEC investigations over possible sales fraud for profit maximization related to its US division. The *Financial Times* notes, "FCA confirms that it is cooperating with a SEC investigation into the reporting of vehicle unit sales to end customers in the US. In its annual and quarterly financial statements, FCA records revenues based on shipments to dealers and customers and not on reported vehicle unit sales to end customers. …" (Financial Times, 2016). Hence, it seems that Fiat used different strategies (i.e. profit-shifting and earnings management strategies) to contemporaneously achieve its tax and profit goals for the different divisions (i.e. European division where the headquarter is located and the U.S. division which is a subsidiary).

Policy makers have shown an increasing interest in tax-motivated income-shifting activity as it directly impacts governments' tax revenues (Crescenzi, Gagliardi and Iammarino, 2015; OECD, 2012; Mescall and Klassen, 2018). In particular, discretion allowed by transfer pricing standards has been a serious concern for tax authorities over the past years because of revenue losses and the ability to shift income may give MNCs an unfair competitive advantage over other companies (typically smaller domestic enterprises) that are taxed on their local economics profits. Governments have countered by increasing their regulation and enforcement activities.

When income is shifted, some affiliates will have improved financial reporting outcomes because they receive shifted income from high tax rate jurisdictions while other affiliates' financial reporting outcomes will be worsened.[2] In this environment, central management may adjust its expectations of local managers, or not use the financial reporting outcomes for assessment purposes. However, if central management does not have perfect information on the effects of income shifting on affiliates' performance metrics, managers may respond to the tax influence on financial reporting outcome by managing earnings as well.

Income shifting and earnings management differ on the underlying incentives and consequences. While an income-shifting strategy aims to reduce group tax expenses through often complex intra-group transactions that are difficult to discover and reverse by tax authorities, earnings management can unilaterally increase profits to meet managers' targets (Bartov and Mohanram, 2004) or external parties' expectations (e.g., analysts, Bartov, Givoly and Hayn, 2002), or can

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[2] While affiliates can break the link between tax reporting and accounting reporting by keeping two sets books, prior studies have shown that this is costly due to risk from tax authorities' examinations and operational efficiency considerations. Hiemann and Reichelstein (2012) show that even in the case where there is a separate transfer price for tax, centralized decisions consider the tax benefits of reporting profit in the low tax rate country when determining the internal transfer price, and operational decisions.

reduce profits to achieve tax goals (Goncharov and Zimmermann, 2006; Guenther, 1994; Maydew, 1997). Neither practice is not costless. Although income-shifting activities are usually not illegal, they may be challenged by tax authorities and expose firms to possible reputational penalties if they are discovered. Indeed, recent studies show that reputational costs are a mitigating factor for aggressive tax planning (Dyreng, Hoopes, and Wilde, 2016; Austin and Wilson, 2017). Likewise, earnings management implies a reputation risk for managers that is particularly salient because earnings management may be discovered by auditors, and it also reduces earnings quality.

In this paper, we study the potential conflict that can arise among affiliates due to tax planning strategies. Under the agency theory framework, headquarters sets mechanisms to better align affiliates and group goals (O'Donnell, 2000). However, tax planning can create misalignments in objectives within the group, particularly when the income shifting pattern is altered. Management control structures may not quickly adapt to the activities of the central tax planners in the dynamic tax planning environment.

While earnings management has been extensively studied at the consolidated group level, less is known about the ways earnings is managed at the affiliate level as a consequence of tax planning strategies. Prior work on affiliate earnings management has explored how affiliates' financial reporting supports group financial reporting goals, as described more fully below. But, we do not know how affiliate managers balance the conflicting tax minimization and profit maximization goals imposed on them.

Consistent with the findings of Guidry, Leone and Rock (1999), we assert that affiliate targets will eventually adjust to the effects of income shifting activities on the business units' profits, and hypothesize that earnings management will be consistent with tax planning incentives. However, when the pattern of shifting profits changes, affiliate managers' targets may not adapt to the

changing income shifting activities. If affiliate level managerial targets do not adjust quickly, one would expect earnings management within affiliates will respond in the opposite direction to the tax-motivated change in income shifting. Further, when the increased costs of income shifting are imposed on high tax-rate affiliates, they will shift less income to their low tax-rate affiliates. In this situation, we anticipate that the low tax-rate affiliates will respond by increasing their discretionary accruals to offset the loss of shifted profits.

We test our predictions by using data from individual financial statements taken from AMADEUS (Bureau van Dijk). We collect a sample that comprises more than 25 thousand firm-year observations belonging to MNCs (parent and subsidiaries) over the period 2008-2015 from 21 different countries across Europe. We use the tax incentive measure developed by Huizinga and Laeven (2008) and modified by De Simone, Klassen and Seidman (2017) to account for tax incentives within the multinational group and accrual-based earnings management proxies to measure manipulation. We examine the interplay between tax incentives and profit management strategies by using exogenous shocks to transfer pricing standards and practices within countries in our sample. These shocks allow us to disentangle the effects of income shifting incentives on affiliate earnings management, if any, from the specific response to changes in income shifting. That is, the degree to which the interplay between central management and affiliate managers is responsive to changing transfer pricing strategies.

In tests of our hypotheses, our results are in line with the expectation of conflicts of interests across affiliates within the group when the group tax planning is changed. Specifically, our results show that, in general, discretionary accruals of affiliates respond to tax-motived income shifting incentives in the same direction as earnings. However, when there is a positive shock to income shifting costs, the negative correlations between reporting affiliate income and the tax incentive is

mitigated. In contrast, the tests of discretionary accruals reveal that the correlation between discretionary accruals and tax-motivated income shifting is amplified when the income shifting costs are increased. We also document that there is a spill-over to low tax rate affiliates when same-firm high tax-rate affiliates experience an increase in their income shifting costs: these low tax-rate affiliates report lower profit, but higher income-increasing discretionary accruals.

This paper contributes to the tax and accounting literature in several ways. First, it adds to the stream of the literature of MNCs and tax planning by providing new empirical evidence on the existence of frictions within the group under certain circumstances. On average, parent companies use subsidiaries to achieve group goals (Beuselinck, Cascino, Deloof and Vanstraelen, 2018; Bonacchi, Cipollini and Zarowin, 2017). Our study extends prior research by deepening our understanding of the dynamics among subsidiaries. Our evidence shows that when tax planners respond to the changing tax environments, affiliate managers alter their earnings management in a manner opposite to the group goals.

Second, we provide empirical evidence of the interplay between tax incentives and financial reporting practices within the context of MNCs. Since MNCs have more options for tax planning and earnings management practices, our results contribute to the literature of the relation between tax and financial reporting incentives (e.g. Frank, Lynch and Rego, 2009) by extending this relation to the affiliates within MNCs. Because the affiliate-level earnings management does not get eliminated upon consolidation, incentives to which affiliate managers respond will alter firm-level outcomes.

We also contribute to previous studies looking at changes in tax planning costs. We show that the changes in country-level transfer pricing enforcement decrease income-shifting activities, on average, but in particular for high tax-rate affiliates. Although profit shifting practices is directly

5

linked to transfer prices standards and practices of host countries, to the best of our knowledge, there are no studies addressing this relation other than the survey provided by Klassen, Lisowsky and Mescall (2017) using US MNCs and the firm-level tests in Atwood, Drake, Myers and Myers (2012). By using an exogenous shock that directly affects transfer prices in combination with affiliate-level data, we have a strong empirical setting to examine these issues.

The paper proceeds as follows. The next section describes the relevant literature and the hypotheses development. Section 3 presents the research design and the sample. Section 4 presents the results and Section 5 concludes.

2. Background, prior literature, and hypotheses development

Coordination and Control

Organizations operate through multiple business units due to diversity in operations, diversity in geography, and due to sheer size. The complex relation between central management and subsidiary, or business unit, managers leads to agency problems (O'Donnell, 2000), creating challenges to coordination and the maximization of firm-specific advantages in the firm's markets (Chung, Gibbons and Schoch, 2006). In response, headquarters can expand the types of metrics used beyond simply financial performance. However, Ittner and Larcker (1998) find that 56% of the weight in assessment is on financial performance for a sample of U.S. firms, followed by 19% on customer and 12% on internal business measures. Using a sample drawn from the U.S., U.K., Germany and Japan, Chung et al. (2006) find a similar, but less extreme, disproportionate emphasis: 44%, 28% and 15%, respectively.

In this context, local managers have an incentive to misreport earnings. Guidry et al. (1999), and Van der Stede (2000) provide evidence that even within a single country, business unit managers

will manage accruals to achieve personal or local unit objectives. Thus, business unit managers face the conflicting goals of aiding in overall control of the enterprise and managing local operations. Survey evidence is consistent with greater internal role conflict when central management increases its emphasis on business unit controllers acting as corporate watchdogs, which leads to greater misreporting by them (Maas and Matejka, 2009).

Layered on top of these features, a multinational enterprise operates in multiple countries. This adds local cultural, market and legal differences to the mix of influences on the control and coordination effectiveness (Christmann, Day and Yip, 1999; Chung et al., 2006). Research focused on earnings management within multinational corporations has only recently begun (e.g., Shuto, 2009; Prencipe, 2012; Fan, 2012; Bonacchi et al., 2017; Beuselinck et al., 2018). Thus far, this research has explored how individual units contribute to the group financial reporting goals.

For example, Fan (2012) find that multinational groups manage foreign profits to avoid losses and Shuto (2009) shows that parent companies engage in parent-level earnings management in order to avoid a decrease in the group total profits. Bonacchi et al. (2017), focusing on Italian business groups and using non-consolidated data, show that non-listed subsidiaries manipulate their results when their listed parent company is reporting low profits; in other words, the parent company drives its subsidiaries to manipulate their results to avoid losses. Similarly, Beuselinck et al. (2018) report that headquarters push the affiliates over which they exert most influence to manipulate non-consolidated earnings with the aim of obtaining consolidated reporting objectives.

In addition to group financial reporting objectives, tax considerations, described more fully below, create additional goals that central management may impose on local managers. Huang (2018) shows that discretionary accruals within multinational corporations are tax efficient. Using aggregate domestic and foreign earnings of U.S. multinationals, she demonstrates that corporations

will achieve their earnings management goals considering the tax impact, reporting income increasing accruals in low tax rate foreign jurisdictions (achieving a 23% lower effective tax rate than on domestic discretionary accruals). Our evidence extends her findings.

Profit-shifting and accrual-based earnings management

Multinational corporations are known to engage in tax-motivated profit-shifting strategies. Streams of research within accounting, finance and economics show that multinational groups exploit tax rate differences across the jurisdictions where they operate to reduce their global tax costs through internal transactions (e.g. Collins, Kemsley and Lang, 1998; Mills and Newberry, 2004; Rego, 2003). These groups reduce their tax burden by shifting profits from high-tax jurisdictions to low-tax jurisdictions (e.g. Klassen, Lang and Wolfson, 1993; Hines and Rice, 1994; Huizinga and Laeven, 2008; Dharmapala and Riedel, 2013; De Simone et al, 2017). Among the possible methods of shifting income, altering accounting values is relatively low cost according to Slemrod's (1992) hierarchy of responses to tax incentives. Based on evidence from the two major tax reforms of the 1980s, Slemrod concludes that real decisions fall well below the two more likely responses: timing transactions and making financial and accounting changes. Prior studies have shown that MNCs can reduce the group tax burden by altering their cross-jurisdictional earnings footprint without shifting real investments (Schreiber, 2013).

We contribute to the recent studies focused on financial reporting practices within multinational corporations, and to the considerable research looking at income shifting strategies, by exploiting the potential conflicts that can arise in affiliates from the interplay between tax and managerial incentives.

8

Local manager incentives and tax planning

Within the local unit, the set of transactions can, at least conceptually, produce unbiased performance indicators, including financial reporting results and tax results. As described above, these results may be managed to achieve company-wide objectives for global financial reporting purposes and for tax purposes. When the multinational corporation implements a tax-motivated profit-shifting plan, low tax rate affiliates will report higher profits than expected due to the group tax planning, and high tax rate affiliates will report lower profits than expected. Extrapolating the evidence in Guidry et al. (1999) suggests that the local managers' targets will be adjusted over time to incorporate the effects of the income shifting profits being added or removed from the local economic results. If this is the case, local managers will reinforce the corporate income shifting efforts by managing their earnings in alignment with the global goals, on average, consistent with the broader findings in Bonacchi et al. (2017), Beuselinck et al. (2018), and Huang (2018). Thus, as a baseline, we assert the following hypothesis:

H1: In steady state, affiliate earnings are managed such that there is a negative correlation between discretionary accruals and tax incentives.

Dynamics of the international tax environment

In their efforts to reduce global taxes, multinational corporations are not free to set *any* price for intrafirm cross-border transactions. The arm's length principle is the conceptual standard used for transfer pricing (OECD, 2011; United Nations Secretariat, 2001).[3] This principle requires that transactions between related parties should use prices that are the same as would be charged for arm's length transactions (Brauner 2008, De Simone 2015). While the principal is widely accepted,

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[3] The term "transfer pricing" is used broadly to denote the price charged for not only tangible goods, but intangible goods and financing arrangements.

its application typically requires assumptions and analyses that create flexibility for both the firm and the tax authority. Extant research has shown that the level of enforcement of international tax plans varies through time (Klassen and Laplante, 2012) and countries (Mescall and Klassen, 2018). Firms respond to these differences by engaging in more or less income shifting.

Mescall and Klassen (2018) refer to a country's aggregate set of policies and practices aimed at curbing international income shifting as their transfer pricing risk. They show that there has been a general increase in the level of transfer pricing risk across a sample of 49 countries, though the changes have been asynchronous and not monotonic in all countries. We would expect a reduction in the level of income-shifting after an increase in transfer pricing risk.

As companies reduce their tax-motivated income shifting in response to increasing costs of shifting, it is unclear what the response of local managers will be. It is not likely that the internal coordination is so strong that changes in the tax planning are immediately translated to earnings targets of the affected affiliates. Business unit managers that experience the change in their pre-tax earnings resulting from less income shifting may attempt to compensate by adjusting discretionary accruals in the opposite direction. That is, managers of low tax-rate units will have less profits with reduced income shifting, and they will have incentives to offset this decrease in profits by engaging in income increasing accrual-based earnings management. Likewise, managers of high tax-rate units will suddenly have higher profits and may engage in income decreasing accruals to offset.

Overall, in response to an increase in transfer pricing risk, we would expect tax-motivated income shifting to decline, but we predict that discretionary accruals will respond in the opposite direction. Thus, our second hypothesis is stated as follows:

H2: Affiliate earnings are managed such that there is a negative correlation between discretionary accruals and tax incentives when there is an increase in income shifting costs.

On the other hand, discretionary accruals may be part of the income shifting activity. In this case, discretionary accruals would evolve as the pre-tax income evolves. Unit managers may also have their assessments altered in recognition of the new, lower income shifting, leading them to report discretionary accruals consistent with the new income shifting patterns. Thus, we may be unable to reject the null hypothesis.

Spill-over effects

An important feature of tax-motivated income shifting is that pre-tax income is transferred from one business unit to another in the direction that reduces total taxes. Thus, if the transferring business unit faces higher costs because the host country increases its transfer pricing risk, then the recipient business unit will receive less profits. Thus, the effect of increasing transfer pricing risk in *high tax-rate* affiliates should be evident in *low tax-rate* affiliates. Like the second hypotheses, if the internal control system of the multinational does not respond quickly to the changing tax planning, the low tax-rate affiliates' managers will have an incentive to offset the change in income shifting by increasing their earnings through discretionary accruals.

If that is the case, low tax-rate affiliates will manage profits due to the firm's failure to adjust the managers' incentives for changes in tax planning strategies. Therefore, our third hypothesis is stated as follows:

H3: Low tax-rate affiliate earnings are managed such that there is a negative correlation between discretionary accruals and tax incentives when there is an increase in income shifting costs imposed on high tax-rate affiliates within the same firm.

11

Because income is shifted from high tax-rate business units to low tax-rate business units, we would not expect the symmetric relation as posited in hypothesis H3. That is, we would not expect the discretionary accruals of high tax rate affiliates to be altered by an increase in income shifting costs of low tax-rate affiliates in the firm.

3. Research design and sample selection

Variables definition

Tax incentives for profit-shifting

Because corporate income is subject to different tax rates across the country where the company operates, multinational groups have incentives to reallocate their profits with the aim to reduce the total tax burden. Early research provides evidence that multinationals exploit tax differences across countries to reduce group's overall tax position through internal operations (e.g. Klassen et al., 1993; Collins et al.,, 1998; Mills and Newberry, 2004; Rego, 2003).

Another stream of literature acknowledges that profit shifting can occur between the parent company and an affiliate located in a foreign country but also between two affiliates in different countries (Hines and Rice, 1994; Huizinga and Laeven, 2008). We follow the approach of Huizinga and Laeven (2008) to proxy for tax incentives to shift income within the multinational group. Later in specification checking, we incorporate the advancements introduced by De Simone et al. (2017). The incentive variable considers a multinational group that operates in n countries and maintains that multinational groups' profit shifting depends on the difference between the local tax rate and the foreign tax rates in all countries where the multinational group operates.

We follow extant literature and determine the tax incentives using the following formula:

12

$$C_i = \frac{\sum_{j \neq i}^{n} K_j(t_i - t_j)}{\sum_{j=1}^{n} K_j}$$

where K_j represents the magnitude of economic activities in the country j, typically using proxies such as capital or labor, t_i is the statutory tax rate in the country i, and t_j is the statutory tax rate in the country j.

This variable is positively correlated with the tax rate of the affiliate's country. Therefore, a positive values of the variable implies that the firm has incentives to shift profits out of country i because that subsidiary faces a high tax rate relative to other subsidiaries in the controlled group in the same year. We define affiliates with positive values of *C* as *High tax-rate* affiliates and affiliates with negative values of *C* as *Low tax-rate* affiliates. *High tax-rate (Low tax-rate)* affiliates are those for which the headquarters has incentives to shift profits *out of (into)* its country due to corporate tax rates in comparison with other affiliates within the group in a given year.

Accrual-Based earnings management

To proxy for discretionary accruals at the affiliate level, we estimate accrual-based earnings management by using the cross-sectional modified Jones model (Dechow Sloan and Sweeney 1995; Kothari, Leone and Wasley, 2005), a widely used model and it is acknowledged to be one that estimates discretionary accruals as precisely as possible (e.g. Chi, Yand and Young, 2014; Cohen, Dey and Lys, 2008; Zang, 2012). It is also regarded as more effective than other models (Bartov et al., 2002), because it reduces the measurement error that arises from to discretion of revenue recognition (Bartov, Gul and Tsui, 2000) found in the Jones (1991) model.

We estimate affiliate signed discretionary accruals as the residual of the performance-adjusted modified Jones model estimated across countries by two-digit SIC industry and year, requiring a minimum of ten observations, in a similar way than Beuselinck et al (2018):

$$TA_{it} / A_{it-1} = \beta_1 (1/A_{it-1}) + \beta_2 (\Delta REV_{it} - \Delta REC_{it} /A_{it-1}) + \beta_3 ROA_{it} + \beta_4 Inflation_{it} +$$

$$+\beta_4 GDP\ Growth_{it} + e_{it}$$

TA_{it} is total accruals, A_{it-1} is lagged total assets. ΔREV_{it} is the change in current revenues, ΔREC_{it} is the change in current receivables, ROA_{it} is return of assets computed as operating income divided by book value of total assets, $Inflation_{it}$ and $GDP\ Growth_i$. In this study we focus on the interplay between tax incentives to shift profits to other affiliates within a group and financial reporting activities, using an accrual-based earnings management proxy.

Costs of profit shifting

The general tightened of transfer pricing standards allows us to identify changes in the tax cost-benefits for tax-planning, potentially altering the balance of tax incentives and financial reporting practices at the affiliate level. The OECD Transfer Pricing Guidelines (TPG) for MNCs provide internationally accepted guidance on the application of the arm's length principle set out in Article 9 of the OECD and UN Model Tax Conventions. The TPG were created and approved in 1995 and the OECD constantly monitors the implementation of the TPG and works on the developing international guidance to address complex areas of transfer pricing. Even though the OECD guidance and models are not mandatory for countries, many countries' tax codes contain anti-avoidance regulations related to intra-group operations based on the arm's length principle and apply guidelines developed by the OECD. Thus, these are considered to be the international standard for transfer pricing (Lohse, Riedel and Spengel, 2012).

In spite of drawing on the work of the OECD, countries adopt changes in the TPG at different times. To determine the effect of these many changes across the various dimensions of transfer pricing regulation and enforcement, we adopt the transfer pricing risk empirical model of Mescall and Klassen (2018). This measure uses sixteen features of countries' transfer pricing policies and

practices and weights them according to an extensive survey of 76 transfer pricing practitioner experts drawn from two international accounting firms and based in 32 countries. Using these data, they estimate a country-year model of the rigor of the transfer pricing regime and label the resulting metric the country-year's transfer pricing risk. We use their data to create our proxy for a shock to the income shifting costs of a particular affiliate[4] and we extended it to the year 2015.

[Insert Table 1 here]

We define a dummy variable, *TPChange*, that takes the value of 1 when the affiliate's country increases the transfer pricing risk based on the Mescall and Klassen (2018) metric (for example, Austria revised its transfer pricing regime in 2010, and the Mescall and Klassen metric changed from 1.97 to 2.97; thus, all affiliates in Austria would be coded 1 for *TPChange* in 2010). We are also interested in the effects of a tax policy change in a country where the multinational group has other affiliates. Because a tax policy change around transfer pricing is expected to most strongly affect the transfer prices of affiliates that shift income to other lower-taxed affiliates, we define a second tax policy change variable, $TPChange_{Hightax \rightarrow Lowtax}$, that equals 1 for low tax-rate affiliates if a high tax-rate affiliate's country, within its group, increased its transfer pricing risk. For example, when Austria undertook its tax policy change in 2010, it had a corporate tax rate of 30%. For some corporate groups, 30% would be relatively high, and *C* for Austrian affiliates would be positive. In these cases, $TPChange_{Hightax \rightarrow Lowtax}$ would equal 0 for the Austrian affiliates, and 1 for other affiliates in the group that have a value of C less than zero. On the other hand, in some corporate groups, 30% would be a relatively low tax rate in 2010, so *C* for the Austrian affiliates of these groups would be negative. In these cases, $TPChange_{Hightax \rightarrow Lowtax}$ would be

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[4] We thank Prof. Mescall for shaing their transfer pricing risk metric with us.

zero for all affiliates in the group, assuming that none of the high-tax affiliates within the group in 2010 increased their transfer pricing risk.

For specification checking purposes we defined, $TPChange_{Lowtax \to Hightax}$ as a dummy variable equal to 1 for high tax-rate affiliates if a low tax-rate affiliate within the group has adopted TP standards.[5]

Regressions specification

Tax incentives and financial reporting practices

To test H1 and H2, we examine an overall balance between tax incentives and financial reporting. We examine the association between the two responses using the following regression:

$$DA_{it} = \alpha + \beta_1 C_{it} + \beta_2 TPChange_{it} + \beta_3 C_{it} * TPChange_{it} +$$
$$+ \beta X_{it} + Year\ FE + Industry\ FE + \varepsilon_{it}$$

(Eq.2)

DA is discretionary accruals, C is tax incentives, and $TPChange$ is a dummy variable taking on the value of 1 if the affiliates' country increased its tax risk in the year, all are estimated at the affiliate-level.

The regression controls for other company characteristics represented as 'X' -a vector of control variables detailed in the appendix- that could be correlated with earnings management, thereby focusing on earnings management driven by tax incentives and changes in transfer pricing behavior. Prior studies have found that managers engage in more earnings management to report a sustainable growth *(Sales growth)* appearance (Summers and Sweeney, 1998). *Lissue* controls

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[5] We also determine whether there were changes in parent/subsidiaries location after the adoption of the new standards and we do not find any change within the sample.

for debt issuance. *Size* is included to control for the effect of firm dimension on earnings management (Watts and Zimmerman, 1978). *CFO* and *ROA* control for firm performance (e.g. Kothari et al., 2005) and lagged *Leverage* controls for debt-contracting incentives for manipulation (Francis and Wang, 2008). Sales volatility σ *(Sales)*, and cash flow volatility σ *(CFO)* are meant to alleviate the concern that discretionary accrual measures may simply reflect higher variance of cash flows (Hribar and Nichols, 2007). *Small gain* controls for earnings manipulation around zero in the distribution of earnings (Burgstahler and Dichev, 1997). *Lossgroup* controls for a company reporting losses in year t within the group as profitable affiliates become less sensitive to tax incentives if there is a company reporting losses within the group. *Listed* for different incentives between private and listed companies (Burgstahler, Hail and Leuz,2006). *Lagged accruals* controls for reversal of accruals over time (Defond and Park, 2001). *ETR* controls for tax avoidance (e.g. Dhaliwal, Gleason and Mills,2004).

Lastly, we include year and industry fixed effects to control for observed and unobserved heterogeneity in accrual-based earnings management proxies. To improve the identification, we use robust regression and all variables are winsorized at 1% to mitigate the effects of outliers. By controlling for all these firm-specific characteristics we should be able to test the overall association between tax incentives and financial reporting practices within the group. All variables description can be found in Appendix I.

We expect β_1 to be negative if managers respond with discretionary accruals consistent with the tax planning incentives they face. A negative estimate of β_1 would indicate that affiliates with unfavourable tax rates (i.e. high tax incentives) engage in more income decreasing accruals than affiliates with lower tax rates. As described above, this will be the case if headquarters is successful

17

at motivating local managers to engage in earnings management consistent with global tax goals, or discretionary accruals are generally positively correlated with income shifting activities.

In testing the hypotheses, we also estimate the models using pre-tax earnings ($Ln\ EBIT_t$) as a dependant variable, consistent with extant literature. This approach allows for a direct comparison between the overall (pre-tax profit) response to the tax planning incentives and the response of discretionary accruals.

To test H2, we include the effect of countries' increases in transfer pricing risk in the regression equation. If the change in transfer pricing risk is fully incorporated in setting managers' targets at the affiliate level, we expect that affiliates will not alter the relation between income shifting incentives and their discretionary accruals around a change in the costs of tax-motivating transfer prices. On the other hand, if there is a conflict between the global tax planning activities and managers' targets, managers at the affiliate level will pursue their personal goals and engage in earnings management activities contrary to the income shifting effects of the change in costs, and a positive estimate of β_3 will result.

Spill-over effect

We test H3 by looking at the effect in *low tax-rate* affiliates if *high tax-rate* affiliates experience an increase in income-shifting costs by using the following specification:

$$DA_{it} = \alpha + \beta_1 C + \beta_2 TPChange_{Hightax \rightarrow Lowtax} +$$

$$+ \beta_4 C * TPChange_{Hightax \rightarrow Lowtax} + \beta X_{it} + Year\ FE + Industry\ FE + \varepsilon_{it}$$

$$(Eq.3)$$

where $TPChange_{Hightax \rightarrow Lowtax}$ is a dummy variable equal to 1 for low tax-rate affiliates if the country of an high tax-rate affiliate within the group has adopted new TP standards and zero otherwise. The other variables are the same as described above.

Hypothesis H3 suggests that β_3 is positive, consistent with *low tax rate* affiliates' managers engage in income-increasing earnings management to compensate for reduced profits transferred from *high tax-rate* affiliates within the group.[6]

Data selection and sample

Data is compiled using AMADEUS database provided by Bureau van Dijk.[7] Additionally, we compile countries' macroeconomic data from the International Fund's World Economic Outlook Database (2015), corporate tax rates from KPMG International (2015) and growth of capital good prices from OECD.

Following the same criteria as De Simone (2016), we restrict the sample to multinational enterprises with available consolidated and non-consolidated financial statements across the EU-21[8] countries. We exclude financial companies (SIC codes 6000-6999), utilities (SIC codes 4800-4999) and quasi regulated industries (SIC codes 4000-4499) as they are subject to special regulations. We have also removed small companies with total assets and sales lower than

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[6] To illustrate, assume there is a MNC with a parent company located in a country with a corporate tax rate equal to 25 percent in year *t*. Affiliate 1 is in a country with a corporate tax rate equal to 30 percent, and Affiliate 2 is in a country with a corporate tax rate equal to 12 percent. Affiliate 2 is the *low tax rate* affiliate within the group receiving profits from the headquarters and Affiliate 1. Since profit shifting is generally regarded as a stable activity, the targets of Affiliate 2 will be consistent with the profit shifting in year *t*. Assume that in year *t*+1 the country of Affiliate 1 adopts new transfer pricing standards, which leads Affiliate 1 to reduce its profit shifting to Affiliate 2. Now, Affiliate 2 will report lower profits than in year *t* due to the lack of shifted profits from Affiliate 1. Thus, we suggest that if managerial incentives are not changed by taking into account the new tax planning, Affiliate 2 will have new incentives to inflate profits to meet its targets.

[7] AMADEUS is a comprehensive dataset that contains over than 23 million public and private companies for 44 countries. It provides firm-level from annual reports and country-level data.

[8] Austria, Belgium, Bulgaria, Croatia, Czech Republic, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovenia, Spain, Sweden and United Kingdom.

10,000,000€. We further restrict subsidiaries to those that are owned with a percentage greater than 51% to ensure the requirement of control and those groups that only operate in one country since they would not have the incentives given by the country corporate tax rate to shift profits to other company within the group. We also exclude firms with missing values needed to compute the performance-adjusted modified Jones model (with a minimum of 10 across countries within two-digit SIC industry and year observations). At the end of this process, our final sample comprises 25,249 multinational groups subsidiaries observation over the period 2008-2015.

Table 2, panel A presents the firms-year distribution across the countries. The most highly represented countries are France (20.51%), Italy (14.71%) and Spain (11.04%), while the less represented countries are Latvia (0.03%), Bulgaria (0.09%) and Slovenia (0.11%). Table 2, Panel B presents year distribution while Panel C shows industry distribution following Fama-French industry classification.

[Insert Table 2 here]

Sample validation: Evidence of profit shifting activities

Because our proxy for tax incentives does not imply *per se* the use of profit-shifting activities, we first test whether companies in our sample engage in tax-motivated profit-shifting activities. We start by replicating inferences from prior studies on income-shifting (e.g. Hines and Rice, 1994; Huizinga and Laeven, 2008; De Simone et al., 2017) to estimate the profit associated with the economic activity in the country of interest.

$$LogEBIT_{it} = \alpha + \beta_1 C_{it} + \beta_2 Loss_{it} + \beta_3 C_{it} * Loss_{it} + \beta_4 LogAssets_{it}$$
$$+ \beta_5 LogComp_{it} + \beta_6 LogGDPPC_{it} + Year\ FE + Industry\ FE + \varepsilon_{it}$$

where *LogEBIT_{it}* is the logarithm of earnings before interest and taxes. *C* represents the tax incentive variable derived above, *LogAssets_{it}* is the logarithm of the amount of fixed assets, *LogComp_{it}* is the Logarithm of total labour compensation and *LogGDPPC_{it}* is the Logarithm of GDP per capita of the country.

The coefficient β_1 provides the estimated effect of the tax incentive variable on affiliate profits. As in prior studies, we expect a negative coefficient, consistent with lower than expected pre-tax profits reporting by affiliates facing a high tax rate, as compared with other affiliates within the controlled group. De Simone et al (2017) has shown that unprofitable affiliates unprofitable affiliate can alter the income shifting incentives of firms. We therefore include *Loss* and it interaction with *C*. We expect a negative coefficient β_2 which will indicate the effect of *Loss* on affiliate profits and a positive interaction term β_3 which will point out that unprofitable affiliates alter firms' tax incentives. *LogAssets_{it}*, *LogComp_{it}* and *LogGDPPC_{it}* control for production factors to predict expected pre-tax income. The Cobb-Douglas production function predicts these coefficients are positive as production increases in productive assets and country-year productivity.

Table 3 reports the results. The coefficient on the tax incentive proxy is negative and significant in line with the findings of extant research. Loss and its interaction with the tax incentive variable is consistent with results provided by De Simone et al (2017). These results are consistent with multinational firms included in the sample shifting profits from high-tax to low-tax jurisdictions, being this strategy modified to a shift-to-loss strategy in the presence of unprofitable affiliates.

[Insert Table 3 here]

4. Results

Descriptive statistics

Table 4 panel A presents descriptive statistics for all the variables used in our study. As expected, abnormal discretionary accruals and the tax incentive variable are close to zero. Tax risk increases for affiliates in 65.4% of the affiliate-years. Affiliates included in the study, on average, are financed 34% by creditors. Because the loss affiliates have been removed from the main sample, means of *ROA* (mean= 0.07), *CFO* (mean= 0.10) and *Sales Growth* (mean= 0.06) are positive. *ETR* shows that on average affiliates pay an effective tax rate of 23.5%.

[Insert Table 4 here]

Table 5 presents the Pearson correlation matrix. The correlation between accrual-based earnings management *(DA)* and tax incentives *(C)* is -2%, indicating a very low correlation. Earnings management *(DA)* is positively correlated with the measures of leverage *(Leverage)*, firm size *(SIZE),* changes in liabilities *(LISSUE), listed (Listed)* and growth (*Sales growth*) and negatively correlated with the operating cash flows *(CFO),* cash flows volatility σ *(CFO)* and GAAP effective tax rates *(ETR).*

Correlations among most of the variables are generally small, except for *ROA* and *CFO* that have a correlation of 91.33%, indicating that it is unlikely that the model will have serious problems of multicollinearity.

[Insert Table 5 here]

Regression results

Tax incentives and financial reporting practices

Table 6 reports results for equation (2) that tests hypotheses H1 and H2. Column [1] shows the results using EBIT while Column [2] show results for the test of the hypotheses, using discretionary accruals. Column [1] gives the standard income shifting results: in the absence of an increase in transfer pricing risk, the relation between affiliate earnings and tax incentives is negative (that is, the coefficient on the main effect of *C* is -0.38), and statistically significant at the 1% level. However, the interaction of the tax incentive and the increase in transfer pricing risk is positive 0.60, and significant at the 1% level, consistent with the increase transfer pricing risk reducing the responsiveness of income to tax incentives. This result provides validity to our measures. In Column [2], we use the discretionary accruals to examine the effect of tax incentives on reporting behaviour at the affiliate level. The coefficient on *C* (β_1 =-0.04) is negative and significant at the 10% level indicating that entities with incentives to shift profits out (i.e. affiliates higher values of *C*) engage, on average, in income decreasing accrual-based earnings management and affiliates with low tax rates engage, on average, in income increasing accruals-based earnings management. This coefficient is predicted by Hypothesis H1, and is consistent with managers of affiliates attempting to support the broader corporate goals of global tax rate reduction by managing accruals consistent with tax planning incentives.

[Insert Table 6 here]

The coefficient on the interaction term in column [2] is negative and statistically significant, contrary to that in column [1], and larger in relative magnitude than the main effect coefficient. Thus, in contrast to H1, these results indicate that affiliates' discretionary accruals are managed in

23

a way to offset the effects of changing tax planning activities. This result is consistent with managers' targets not being updated for changes in the tax planning activities of head office, encouraging the manager to engage in more extreme earnings management to compensate.

The signs of the coefficients of the control variables are in line with findings from prior research. The coefficient on *Size* (β=0.003) is positive and significant at the 1% level according to prior studies and the coefficient on *CFO* (β=-1.047) is negative and significant.

Spill-over effects

Table 7 further examines the impact of increases in income shifting costs by looking at the effects of increases in transfer pricing risk imposed on high tax-rate affiliates on low tax-rate affiliates within the MNC group. Like Table 6, in columns [1], we consider a model of earnings. In this regression, the coefficient on *C* is negative, consistent with the typical income shifting relation, and the coefficient on the interaction of *C* and $TPChange_{Hightax \rightarrow Lowtax}$ is positive. Both coefficients are statistically significant at the 1% and the 5% level. The interaction coefficient is consistent with low tax rate affiliates attaining less shifted profits when a high tax-rate affiliate in the group faces increased costs of income shifting.

[Insert Table 7 here]

Column [2] repeats the analysis using discretionary accruals in order to test the hypothesis. In this regression, the coefficient on the main effect is also negative, as in the previous regressions, but the interaction has a negative coefficient. This coefficient suggests that the manager of the low tax-rate affiliate will respond to the reduced profits by engaging in income increasing discretionary accruals offsetting the earnings change.

24

In Panel B of Table 7, we repeat the analysis using *TPChange$_{Lowtax \rightarrow Hightax}$* to examine the effect on high tax-rate affiliates from changes in the income shifting cost of low tax-rate affiliates in the group. Because low tax-rate affiliates generally have higher profits as a result of income shifting, such costs should not alter the income shifting equilibrium. However, the coefficient on the interaction term is negative and weakly significant at the 10% level. This results are inconsistent with our expectation. Nevertheless, the coefficient on the interaction is not different from zero in column [2]. We believe these results provides further support to our interpretation of the main analysis.

Summing up, the results of our hypothesis testing are consistent with managers located at low tax-rate affiliates generally using discretionary accruals in a manner consistent with cross-border income shifting incentives of the firm. However, when the costs of income shifting increase, reducing the group's ability to shift the profits, managers of the affected affiliates, either because they are the affiliate with the increased costs, or because they receive shifted profits, will offset the change in income shifting by altering their discretionary accruals in the opposite direction.

Additional analysis – alternative procedures for discretionary accruals

Even discretionary accruals is commonly used in accounting research to proxy for managers' discretion, it can generate biased coefficient estimates. Thus, we re-estimate the discretionary accruals proxy by performing two of the three solutions given by Chen et al (2018).

The first solution we apply is to estimate the coefficients for the model as a single regression as opposed to two-step regression for our main analysis. In the single regression we include a set of industry-year indicator variables and their interactions with each of the first-step regressors, as follows:

$$T.Accruals_{it} = \alpha + \beta_1 C + \beta_2 TPChange_{Hightax \rightarrow Lowtax} +$$

$$+ \beta_2 C * TPChange_{Hightax \rightarrow Lowtax} + \beta X_{it} + Year - industry\ indicators$$

$$+ Interactions\ \varepsilon_{it}$$

When we estimate the regression with this new approach, untabulated, the previous results for the main hypotheses (H3) hold. In a similar way, we follow the third proposed solution by Chen et al. (2018) and we re-estimate equation (3) by using the discretionary accruals proxy and including all first-step regressors as control variables. Results remain unchanged. Both of these procedures generate unbiased estimates of the coefficient of interest and reliable t-statistics.

Robustness checks

Hypothesis H2 estimates the effect of increasing the income shifting costs on the affiliates themselves, while Hypothesis H3 estimates the effects of increasing the income shifting costs on low-tax affiliates associated with increasing costs on high tax affiliates. It is possible in this latter test that the low tax rate affiliate also has an increase in costs, and so the spill-over tests in H3 are contaminated by low tax-rate affiliates with increased income shifting costs. In Table 8, we estimate the regressions from Table 7, but eliminate all observations with *TPChange* = 1. In this sample, none of the affiliates are in countries with a change in their transfer pricing cost; thus, the regression estimates if the low tax-rate affiliates with no transfer pricing cost increase but associated with an affiliate in a high tax-rate country with a transfer pricing cost increase, differ from all other affiliates with no transfer pricing cost increase. The results reported in Table 8 are similar to those reported in Table 7.

[Insert Table 8 here]

In Table 9, we repeat our main analyses but including loss affiliates in a manner similar to De Simone et al. (2017). Like De Simone et al., the coefficient on the main effect of *C* with the natural log of one plus earnings as the dependent measure has a negative coefficient, but the coefficient on the interaction of *C* and the loss-affiliate indicator variable is positive. The coefficient on the interaction of *C* with the *TPChange* variable is also positive and significant at the 1% level, qualitatively consistent with the results in Table 7. In the discretionary accruals regression, the test of hypotheses H1 and H2 continue to be consistent with the main tests: the coefficients on both the main effect of *C* and on the interaction of *C* and *TPChange* are negative. Interestingly, the coefficient on the interaction of *C* and the loss indictor variable is not statistically different from zero.

[Insert Table 9 here]

5. Conclusion and future work

The question that we address in this paper is whether any conflict of interest within MNCs might become evident within the financial reporting practices in the context of tax-motivated income shifting. MNCs are interested in the reducing their tax burden but doing so has implications not only for consolidated profits, but also the profits of individual units within the corporation. Indeed, if the group sets up a tax-motivated profit-shifting plan, some of the companies belonging to the group will always report lower profits than their "true profits" due to the high tax rates in comparison with the other companies within the group.

If managerial targets at the affiliate level incorporate the effects of income shifting as suggested by Guidry et al (1999), local managers will artificially manipulate earnings in a manner consistent with tax incentives. When income shifting costs increase, the tax planning strategy will be modified and we would expect a reduction in the level of income shifted. However, is not clear

27

how managers will react. If central management adjust managerial targets after an increase in income shifting costs, we would observe behaviour aligned with the new income shifting patterns. If managerial targets are not adjusted, managers will face incentives to offset the effects of the reduction of shifted income by engaging in accrual-based earnings management. This effect will also be evident in *low tax-rate* affiliates when *high tax-rate* affiliates' countries adopt new transfer pricing standards or practices, leading to reduced income shifting.

We test our hypothesis on a sample of European MNCs for the period 2008-2015. Results from the main analysis support our hypotheses by showing that discretionary accruals have correlations opposite to earnings when the group tax planning is changed, consistent with a conflict at the affiliate level. Our conclusions are strengthened by the results that indicate that managers located at low tax-rate affiliates artificially inflate earnings when at least one high tax-rate affiliate within the group faces increased transfer pricing risk. However, as expected, when the tests are reversed, managers of high tax-rate affiliates do not alter their discretionary accruals. The results remain robust to a variety of alternative specifications.

Taking together our results provide new evidence about the agency costs within MNCs when there is a change in tax planning costs for income shifting. We contribute to the tax and accounting literature. We add to the literature focused on MNCs by providing new evidence on the frictions between parent and subsidiaries due to the misalignment between group and unit goals. In addition, we provide empirical evidence of how changes in transfer pricing risk have an impact in financial reporting due to the altering of tax planning costs. We also contribute to the literature focused on the relation between tax and financial aggressiveness by extending it to the context of MNCs' affiliates.

The study is also subject to some caveats. We do not provide direct evidence of the driver for the conflict of interests among affiliates due to a lack of public data on manager's targets or compensation packages in Europe or reputational issues. However, future studies can more directly examine this issue.

References

Atwood, T. J., Drake, M. S., Myers, J. N., and Myers, L. A. (2012). Home country tax system characteristics and corporate tax avoidance: International evidence. *The Accounting Review*, 87(6), 1831-1860.

Austin, C.R. and Wilson, R.J., 2017. An Examination of Reputational Costs and Tax Avoidance: Evidence from Firms with Valuable Consumer Brands. *Journal of the American Taxation Association*, 39(1), pp.67–93.

Bartov, E., and Mohanram, P., 2004. Private information, earnings manipulations, and executive stock-option exercises. *The Accounting Review*, 79(4), 889-920.

Bartov, E., Givoly, D., and Hayn, C., 2002. The rewards to meeting or beating earnings expectations. *Journal of Accounting and Economics*, 33(2), 173-204.

Bartov, E., Gul, F.A., and Tsui, J.S., 2000. Discretionary-accruals models and audit qualifications. *Journal of Accounting and Economics*, 30(3), 421-452.

Beuselinck, C., and Deloof, M., 2014. Earnings Management in Business Groups: Tax Incentives or Expropriation Concealment? *The International Journal of Accounting*, 49(1), 27-52.

Beuselinck, C., Cascino, S., Deloof, M., and Vanstraelen, A., 2018. Earnings Management within Multinational Corporations. *The Accounting Review (Forthcoming)* Available at SSRN: http://ssrn.com/abstract=1599678 (Accessed August 2018)

Bonacchi, M., Cipollini, F., and Zarowin, P., 2017. Parents Use of Subsidiaries to 'Push Down' Earnings Management: Evidence from Italy. *Contemporary Accounting Research*, Forthcoming.

Brauner, Y. (2008). Value in the eye of the beholder: The valuation of intangibles for transfer pricing purposes. Va. Tax Rev., 28, 79.Burgstahler, D. C., Hail, L., and Leuz, C., 2006. The importance of reporting incentives: Earnings management in European private and public firms. *The accounting Review,* 81(5), 983-1016.

Chen, W., Hribar, P., & MELESSA, S. (2018). Incorrect inferences when using residuals as dependent variables. *Journal of Accounting Research*, 56(3), 751-796.

Chi, J., Yang, J., and Young, M., 2014. Mutual funds' holdings and listed firms' earnings management: Evidence from China. *Journal of Multinational Financial Management*, 28, 62-78.

Christmann, P., Day, D., and Yip, G. S. (1999). The relative influence of country conditions, industry structure, and business strategy on multinational corporation subsidiary performance. *Journal of International Management*, 5(4), 241-265.

Chung, L.H., P.T. Gibbons, and H.P. Schoch, 2006. The management of information and managers in subsidiaries of multinational corporations. *British Journal of Management*, 17, 153-165.

Cohen, D. A., Dey, A., and Lys, T. Z. (2008). Real and accrual-based earnings management in the pre-and post-Sarbanes-Oxley periods. *The Accounting Review*, 83(3), 757-787.

Collins, J., Kemsley, D., and Lang, M. (1998). Cross-jurisdictional income shifting and earnings valuation. *Journal of Accounting Research,* 209-229.

Crescenzi, R., Gagliardi, L., and Iammarino, S. (2015). Foreign Multinationals and domestic innovation: intra-industry effects and firm heterogeneity. *Research Policy,* 44(3), 596-609.

Dhaliwal, D. S., Gleason, C. A., and Mills, L. F. (2004). Last-chance earnings management: using the tax expense to meet analysts' forecasts. *Contemporary Accounting Research*, 21(2), 431-459.

De Simone, L. (2016). Does a common set of accounting standards affect tax-motivated income shifting for multinational firms?. *Journal of Accounting and Economics*, 61(1), 145-165.

De Simone, L., Klassen, K. J., and Seidman, J. K. (2017). Unprofitable affiliates and income shifting behavior. *The Accounting Review*, 92(3), 113-136.

Dechow, P. M., Sloan, R. G., and Sweeney, A. P. (1995). Detecting earnings management. *The Accounting Review,* 70(2), 193-225.

DeFond, M. L., and Park, C. W. (2001). The reversal of abnormal accruals and the market valuation of earnings surprises. *The Accounting Review*, 76(3), 375-404.

Dharmapala, D., and Riedel, N. (2013). Earnings shocks and tax-motivated income-shifting: Evidence from European multinationals. *Journal of Public Economics*, 97, 95-107.

Dyreng, S., J. Hoopes and J. Wilde. 2016. Public Pressure and Corporate Tax Behavior. *Journal of Accounting Research* 54(1): 147-186.

Fan, N. M. (2012). A study of foreign earnings management using an empirical distribution approach. *International Research Journal of Applied Finance* 3, 1704 – 1730.

Francis, J. R., and Wang, D. (2008). The joint effect of investor protection and big 4 audits on earnings quality around the world. *Contemporary Accounting Research*, 25(1), 157-191.

Frank, M., Lynch, L., and Rego, S. (2009). Are financial and tax reporting aggressiveness reflective of broader corporate policies. *The Accounting Review*, 84(2), 467-498.

Goncharov, I., and Zimmermann, J. (2006). Earnings management when incentives compete: the role of tax accounting in Russia. *Journal of International Accounting Research*, 5(1), 41-65.

Guenther, D.A., 1994. Earnings management in response to corporate tax rate changes: Evidence from the 1986 Tax Reform Act. *The Accounting Review,* 69(1), 230-243.

Guidry, F., A.J. Leone, and R. Rock, 1999. Earnings-based bonus plans and earnings

management by business-unit managers. *Journal of Accounting and Economics* 26, 113-142.

Hiemann, M., and Reichelstein, S. (2012). Transfer pricing in multinational corporations: An integrated management-and tax perspective. *In Fundamentals of International Transfer Pricing in Law and Economics* (pp. 3-18). Springer, Berlin, Heidelberg.

Hines, R., and Rice, E. M., 1994. Fiscal paradise: foreign tax havens and American business. *Quarterly Journal of Economics* 109(1), 149–182

Huang, J.J., 2018. Foreign earnings management of U.S. multinational companies: The role of decision rights. *Journal of International Business Studies* 49(5), 552.574.

Huizinga, H., and Laeven, L. (2008). International profit shifting within multinationals: A multi-country perspective. *Journal of Public Economics*, 92(5), 1164-1182.

Ittner, C. D., and Larcker, D. F. (1998). Innovations in performance measurement: Trends and research implications. *Journal of Management Accounting Research*, 10, 205.

Jones, J.J., (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29(2), 193–228.

Klassen, K., Lang, M., and Wolfson, M. (1993). Geographic income shifting by multinational corporations in response to tax rate changes. *Journal of Accounting Research*, 141-173.

Klassen, K. J., and Laplante, S. K. (2012). Are US multinational corporations becoming more aggressive income shifters?. *Journal of Accounting Research*, 50(5), 1245-1285.

Kothari, S. P., Leone, A. J., and Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1), 163-197.

Klassen, K. J., Lisowsky, P., and Mescall, D. (2017). Transfer pricing: Strategies, practices, and tax minimization. *Contemporary Accounting Research*, 34(1), 455-493.

Lohse, T, Riedel, N and Spengel, C., 2012. The Increasing Importance of Transfer Pricing Regulations – a Worldwide Overview. Centre for Business Taxation WP 12/27.

Maas, V.S., and M. Mateˇjka, 2009. Balancing the dual responsibilities of business unit controllers: Field and survey evidence. *The Accounting Review*, 84(4), 1233-1253.

Maydew, E. L. (1997). Tax-induced earnings management by firms with net operating losses. *Journal of Accounting Research*, 35(1), 83-96.

Mescall, D., and Klassen, K. J. (2018). How does transfer pricing risk affect premiums in cross-border mergers and acquisitions?. *Contemporary Accounting Research*, 35(2), 830-865.

Mills, L., and Newberry, K. (2004). Do foreign multinationals' tax incentives influence their US income and reporting debt policy?. *National Tax Journal,* 57(1), 89–107.

O'Donnell, S. W. (2000). Managing foreign subsidiaries: agents of headquarters, or an

interdependent network?. *Strategic management journal*, 525-548.

Prencipe, A. (2012). Earnings management in domestic versus multinational firms: discussion of "Where do firms manage earnings?". *Review of Accounting Studies,* 17(3), 688-699.

Rego, S.O. (2003). Tax-avoidance activities of US multinational Corporations. *Contemporary Accounting Research*, 20(4), 805-833.

Schreiber, U. (2013). *International company taxation: an introduction to the legal and economic principles*. Springer Science and Business Media.

Shuto, A. (2009). Earnings Management to Exceed the Threshold: A Comparative Analysis of Consolidated and Parent-only Earnings. *Journal of International Financial Management and Accounting*, 20(3), 199-239.

Slemrod, J. (1992). Do taxes matter? Lessons from the 1980s (No. w4008). National Bureau of Economic Research.

Summers, S. L., and Sweeney, J. T. (1998). Fraudulently misstated financial statements and insider trading: An empirical analysis. *The Accounting Review*, 73 (1), 131-146.

Van der Stede, W., 2000. The relationship between two consequences of budgetary controls: budgetary slack creation and managerial short-term orientation. *Accounting, Organizations and Society*, 25, 609-622.

Watts, R. L., and Zimmerman, J. L. (1978). Towards a positive theory of the determination of accounting standards. *The Accounting Review*, 53 (1), 112-134.

Zang, A. Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, 87(2), 675-703

Appendix I: Variable description

Variable Name	Definition
DA	is a proxy for accrual manipulation following the modified Jones model (1995)
C	is the tax incentive variable derived by Huizinga and Laeven (2008) and modified by De Simone et al., (2017).
Low tax-rate afiiliate	is a dummy variable equal to 1 for companies with a *TAXINC* lower than zero, and zero otherwise.
High tax-rate afiiliate	is a dummy variable equal to 1 for companies with a *TAXINC* greater than zero, and zero otherwise.
TPRisk	Mean centered transfer pricing risk as measure by Mescall and Klassen (2018), extended to year 2015.
TPChange	is a dummy variable equal to 1 if the country-year observations increase transfer pricing risk as measure by Mescall and Klassen (2018)
TPChange$_{Hightax \rightarrow Lowtax}$	is a dummy variable equal to 1 for inbound companies if an outbound company within the group has suffered an increase in transfer pricing risk in year *t*, and zero otherwise.
TPChange$_{Lowtax \rightarrow Hightax}$	is a dummy variable equal to 1 for outbound companies if an inbound company within the group has suffered an increase in transfer pricing risk in year *t*, and zero otherwise.
High BTC	is a dummy variable equal to 1 for entities with book-tax conformity greater than book-tax conformity mean in year *t*, and zero otherwise. Book-tax conformity is based on the RMSEs of the following model in a similar way than Atwood et al. (2010). The model is estimated by country-year: $CTE_t = \alpha + \beta_1 PTBI_t + \varepsilon_{it}$ Foreign pre-tax book income is not included in the regression as we are using affiliate data, controlling for differences in corporate tax rates in different jurisdictions while dividends are not included due to data limitations.
LogEBIT	is the logarithm of earnings before interests and taxes
LogAssets	is the logarithm of the amount of fixed assets
LogComp	is the logarithm of total labour compensation
LogGDPPC	is the logarithm of GDP per capita of the country
T.Accruals	is total current accruals in year t
Loss	is a dummy variable equal to 1 if the affiliate's EBIT is lower than zero and zero otherwise

Control variables for equation 2 and 3:	
Sales Growth	is the annual percentage change in net sales
Lissue	is the annual change in liabilities over total assets
σ (Sales)	is sales volatility measured as the standard deviation of sales scaled by book value of total assets. Standard deviations are calculated based on rolling windows of previous two annual observations.
σ (CFO)	is cash flow volatility measured as the standard deviation of cash flow from operations. Cash flow from operations is the difference between net income before extraordinary items and total accruals. Standard deviations are calculated based on rolling windows of previous two annual observations.
Size	is the natural logarithm of the total assets
Lagged leverage	is calculated as total liabilities over total assets in t-1
ROA	is operating profit divided by total assets
Industry ROA	is the median ROA calculated by industry-country-year
Listed	is a dummy variable, equal to 1 if the company is listed and 0 otherwise
CFO	is cash flow from operations divided by total assets
ΔGDP	changes in per capita GDP
ETR	is tax expense divided by pre-tax income
LossGroup	is a dummy variable equal to 1 if there is a company within the group reporting losses and zero otherwise
Small gain	is a dummy variable equal to one if the affiliate exhibits a small gain (ebit scaled by lagged total assets is lower than 1%), and zero otherwise
Lagged DA	discretionary accruals in year t-1

TABLE 1: Changes in Transfer Pricing

(Source: Mescall and Klassen, 2018)

Country	Date of increase in Transfer Pricing risk
1. Austria	2009, 2010, 2012, 2013, 2014, 2015
2. Belgium	2008, 2009, 2010, 2011, 2013, 2014, 2015
3. Bulgaria	No changes in TP
4. Croatia	2015
5. Czech Republic	2008, 2009, 2010, 2011, 2013, 2014, 2015
6. Finland	2008, 2009, 2011, 2012, 2014, 2015
7. France	2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015
8. Germany	2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015
9. Greece	2011, 2015
10. Ireland	2010, 2011, 2012, 2014, 2015
11. Italy	2009
12. Latvia	2014, 2015
13. Luxembourg	2012, 2013, 2014
14. Netherlands	2010, 2011, 2012, 2013, 2014, 2015
15. Poland	2009, 2010, 2012, 2013, 2014, 2015
16. Portugal	2010, 2011, 2012, 2014, 2015
17. Romania	2012, 2014, 2015
18. Slovenia	2015
19. Spain	2009, 2010, 2011, 2013, 2014
20. Sweden	2014
21. United Kingdom	2010, 2012, 2015

TABLE 2, Panel A: Sample Country Distribution

Country	Firm-year Observations	Percentage Firm-year Observations
Austria	666	2.64
Belgium	1,771	7.01
Bulgaria	23	0.09
Croatia	71	0.28
Czech Republic	2,292	9.08
Finland	377	1.49
France	5,179	20.51
Germany	1,665	6.59
Greece	83	0.33
Ireland	92	0.36
Italy	3,713	14.71
Latvia	7	0.03
Luxembourg	81	0.32
Netherlands	27	0.11
Poland	1,432	5.67
Portugal	860	3.41
Romania	473	1.87
Slovenia	27	0.11
Spain	2,788	11.04
Sweden	2,580	10.22
United Kingdom	1,042	4.13
Total	25,249	100

TABLE 2, Panel B and C: Sample Industry and Year Distribution

Panel B: Year distribution		
Years	**Total**	**Percentage**
2008	2,496	9.89
2009	2,588	10.25
2010	3,123	12.37
2011	3,175	12.57
2012	3,305	13.09
2013	3,496	13.85
2014	3,667	14.52
2015	3,399	13.46
Total	25,249	100
Panel C: Industry distribution		
Industy	**Total**	**Percentage**
Wholesale non-durables goods	2,111	8.36
Wholesale durables goods	350	1.39
Manufacturing	6,301	24.96
Energy, oil and gas	196	0.78
Chemicals and allied products	1,417	5.61
Business equipment	1,101	4.36
Wholesale, retail and some services	7,565	29.96
Healthcare, medical equipment and drugs	801	3.17
Miscellaneous	5,407	21.41
Total	25,249	100

TABLE 3: Evidence of Tax Motivated Profit-Shifting

	(1) $Ln\ EBIT_t$	(2) $Ln\ EBIT_t$	(3) $Ln\ (\pi + 1)_t$
C	-2.000***	-1.958***	-0.123***
	(0.115)	(0.116)	(0.007)
LogAssets	0.134***	0.128***	-0.004***
	(0.005)	(0.006)	(0.000)
LogComp	0.550***	0.573***	0.003***
	(0.008)	(0.009)	(0.000)
IndustryROA	7.360***	7.034***	0.632***
	(0.497)	(0.492)	(0.032)
Loss			-0.170***
			(0.001)
C#Loss			0.223***
			(0.019)
Year dummies	Yes	Yes	Yes
Industry dummies	No	Yes	Yes
Observations	23,985	23,985	31,814
R-Square	0.404	0.415	0.751

TABLE 4: Descriptive Statistics

Full Sample

Variable	N	Mean	Std. Dev.	Min	Max
DA	25,249	-0.001	0.152	-0.451	0.509
TAXINC	25,249	0.021	0.072	-0.166	0.168
Ln_EBIT	25,249	15.313	1.613	10.877	19.438
$Ln\,(\pi + 1)$	25,249	0.090	0.079	0.000	0.408
TP Risk	25,249	0.148	0.579	-2.450	0.968
TPChange	25,249	0.654	0.475	0.000	1.000
$TPChange_{Hightax \rightarrow Lowtax}$	25,249	0.302	0.459	0.000	1.000
$TPChange_{Lowtax \rightarrow Hightax}$	25,249	0.527	0.500	0.000	1.000
High BTC	25,249	0.430	0.495	0.000	1.000
Sales growth	25,249	0.057	0.231	-0.563	1.520
$\sigma\,(Sales)$	25,249	0.174	0.187	0.006	1.047
Size	25,249	18.107	1.309	16.150	22.050
Leverage	25,249	0.340	0.214	0.000	0.985
Lissue	25,249	0.017	0.173	-0.477	0.827
ROA	25,249	0.070	0.080	-0.315	0.393
CFO	25,249	0.106	0.087	-0.283	0.465
$\sigma\,(CFO)$	25,249	0.127	0.106	0.004	0.512
LossGroup	25,249	0.753	0.431	0.000	1.000
Listed	25,249	0.010	0.097	0.000	1.000
Small gain	25,249	0.064	0.246	0.000	1.000
ETR	25,249	0.235	0.395	-1.690	2.182
LogAssets	25,116	15.566	2.228	9.306	20.587
LogComp	24,089	16.323	1.362	12.156	20.052
IndustryROA	25,249	0.036	0.019	0.002	0.096
ΔGDP	25,249	0.656	2.383	-5.563	5.989
Inflation	25,249	101.256	15.810	87.886	169.137

Table 5

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) DA	1																
(2) TAXINC	-0.019*	1															
(3) Sales growth	0.146*	-0.053*	1														
(4) σ (Sales)	0.052*	-0.057*	0.260*	1													
(5) Size	0.059*	-0.099*	0.052*	0.041*	1												
(6) Leverage	0.092*	0.056*	0.040*	0.009	-0.171*	1											
(7) Lissue	0.111*	-0.020*	0.357*	0.071*	0.065*	-0.022*	1										
(8) Industry ROA	-0.000*	-0.334*	0.086*	0.028*	0.169*	-0.120*	0.043*	1									
(9) ROA	0.005	-0.153*	0.069*	-0.003	-0.026*	-0.117*	-0.043*	0.255*	1								
(10) CFO	-0.117*	-0.155*	0.062*	-0.022*	-0.027*	-0.161*	-0.071*	0.246*	0.913*	1							
(11) σ (CFO)	-0.033*	-0.070*	0.028*	0.214*	-0.074*	0.040*	-0.024*	0.036*	0.058*	0.037*	1						
(12) LossGroup	-0.003	0.045*	-0.034*	0.017*	0.110*	0.009	0.000	-0.018*	-0.032*	-0.031*	0.050*	1					
(13) Listed	0.002*	0.041*	0.003*	0.001	0.140*	-0.025*	0.002	-0.041*	-0.005	-0.015*	-0.047*	-0.022*	1				
(14) Small Gain	-0.009	0.052*	-0.065*	0.028*	0.052*	0.009	-0.031*	-0.083*	-0.217*	-0.207*	0.015*	0.032*	0.024*	1			
(15) ETR	-0.022*	0.041*	-0.024*	-0.009	-0.050*	0.014*	0.001	-0.088*	-0.041*	-0.043*	0.003	-0.010	-0.022*	-0.044*	1		
(16) ΔGDP	0.003	-0.220*	0.174*	-0.005	0.049*	-0.061*	0.102*	0.411*	0.090*	0.084*	0.012	-0.042*	-0.023*	-0.049*	-0.075*	1	
(17) Inflation	0.034*	-0.364*	0.040*	0.002	-0.017*	-0.020*	0.002	0.142*	0.051*	0.063*	-0.009	-0.060*	0.021*	-0.032*	-0.037*	-0.298*	1

Table 5 shows the correlation matrix for the variables of interest. * denote correlations significant at least at the 5% level.

Table 6

	$Ln\ EBIT_t$	DA_t
C	**-0.375*****	**-0.035***
	(0.099)	**(0.020)**
TPChange	0.001	0.001
	(0.008)	(0.002)
C#TPChange	**0.360*****	**-0.051****
	(0.113)	**(0.023)**
Sales growth	0.112***	0.069***
	(0.018)	(0.004)
σ (Sales)	-0.055***	0.015***
	(0.021)	(0.004)
Size	0.953***	0.003***
	(0.003)	(0.001)
Lagged Leverage	0.137***	-0.031***
	(0.017)	(0.004)
Lissue	-0.101***	0.113***
	(0.022)	(0.005)
Industry ROA	2.082***	--
	(0.237)	
ROA	--	0.939***
		(0.024)
CFO	7.629***	-1.047***
	(0.045)	(0.022)
σ (CFO)	0.128***	-0.136***
	(0.035)	(0.007)
LossGroup	-0.007	0.002
	(0.009)	(0.002)
Listed	-0.021	-0.016**
	(0.037)	(0.008)
Small gain	-2.128***	-0.006**
	(0.015)	(0.003)
Lagged DA	0.250***	-0.113***
	(0.023)	(0.005)
ETR	0.159***	-0.003*
	(0.009)	(0.002)
ΔGDP	0.003	-0.000
	(0.003)	(0.001)
Constant	-2.727***	0.003
	(0.057)	(0.012)
Observations	25,249	25,249
Year FE	Yes	Yes
Industry FE	Yes	Yes
Adj. R-squared	0.878	0.164

Table 7

Panel A		
Full sample	$Ln\ EBIT_t$	DA_t
C	-0.228***	-0.066***
	(0.081)	(0.016)
$TPChange_{Hightax\rightarrow Lowtax}$	0.004	-0.007***
	(0.013)	(0.003)
$C\#TPChange_{Hightax\rightarrow Lowtax}$	**0.381****	**-0.110*****
	(0.179)	**(0.036)**
Observations	25,249	25,249
Year FE	Yes	Yes
Industry FE	Yes	Yes
Control vbles included	Yes	Yes
Adj. R-squared	0.877	0.164
Panel B		
Full sample	$Ln\ EBIT_t$	DA_t
C	-0.164*	-0.071***
	(0.086)	(0.018)
$TPChange_{Lowtax\rightarrow Hightax}$	0.040***	-0.002
	(0.011)	(0.002)
$C\#TPChange_{Lowtax\rightarrow Hightax}$	**-0.261***	**0.016**
	(0.144)	**(0.029)**
Observations	25,249	25,249
Year FE	Yes	Yes
Industry FE	Yes	Yes
Control vbles included	Yes	Yes
Adj. R-squared	0.878	0.163

Table 8

Panel A		
(TPChange =0):		
TPChange$_{Hightax \rightarrow Lowtax}$	*Ln EBIT$_t$*	*DA$_t$*
C	-0.543***	-0.027
	(0.148)	(0.031)
TPChange$_{Hightax \rightarrow Lowtax}$	0.019	-0.006
	(0.020)	(0.004)
C#TPChange$_{Hightax \rightarrow Lowtax}$	**0.879***	**-0.122***
	(0.316)	**(0.066)**
Observations	8,718	8,718
Year FE	Yes	Yes
Industry FE	Yes	Yes
Control vbles included	Yes	Yes
Adj. R-squared	0.885	0.133

Robustness check: Unprofitable affiliates

Table 9

VARIABLES	$Ln\ (\pi + 1)_t$	DA_t
C	-0.029***	-0.051***
	(0.006)	(0.019)
TPChange$_{Hightax \rightarrow Lowtax}$	0.001	-0.005
	(0.001)	(0.003)
Loss	-0.087***	-0.008**
	(0.001)	(0.003)
Loss #C	0.054***	0.037
	(0.014)	(0.033)
TPChange$_{Hightax \rightarrow Lowtax}$#C	**0.042***	**-0.080***
	(0.014)	**(0.045)**
Observations	31,814	31,814
Year FE	Yes	Yes
Group FE	Yes	Yes
Control vbles included	Yes	Yes
Adj. R-squared	0.751	0.094