Earnings Management within Multinational Corporations

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December 2014

[*] We appreciate the helpful comments and suggestions of Mary Barth, Robert Bushman, Donal Byard, Maria Correia, Ilia Dichev, Carol Ann Frost, Bjørn Jørgensen, Andrew Leone, Maureen McNichols, Dhananjay Nanda, Peter Pope, Leslie Robinson, Phillip Stocken, Ane Tamayo, David Veenman, Rodrigo Verdi, Martin Walker, Han Wu, Peter Wysocki, Paul Zarowin, Adrian Zicari, and conference participants at the 2013 EAA Annual Meeting, the 2013 FARS Midyear Meeting, 2014 AAA Annual Meeting, ESSEC Business School, London School of Economics, Maastricht University, University of Miami, University of Padova, Stockholm School of Economics, Stanford University, and WHU Otto Beisheim School of Management. We thank Victoria Adams (Bureau van Dijk) and Clive Wilson (London School of Economics) for their excellent assistance with the Orbis data. Christof Beuselinck gratefully acknowledges financial support by the European Commission Research Training Network INTACCT.

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Abstract

Using a large sample of multinational corporations (MNCs), we examine the location of earnings management *within* the firm. We posit and find that MNCs manage their consolidated earnings through an orchestrated reporting strategy across subsidiaries over which they exert significant influence. Specifically, we find that headquarters' influence on subsidiary earnings management increases with the degree of subsidiary integration and the extent of earnings management opportunities, and decreases with the degree of subsidiary independence. Most importantly, we provide evidence that MNCs exploit *regulatory arbitrage* opportunities arising from cross-country differences in institutional quality. We document that MNCs headquartered in jurisdictions with more restrictive regulation manage earnings more through subsidiaries domiciled in countries where regulation is weaker. A difference-in-differences estimation reveals that, in response to exogenous improvements to their home countries' reporting environment, MNCs rebalance their reporting strategies by clustering earnings management more in subsidiaries from countries with more lenient regulation. Taken together, our findings yield important insights on the drivers of earnings management location within the firm, and highlight the need for better cross-country coordination in regulatory design.

Keywords: Earnings management, Multinational corporations, Subsidiaries, Regulatory arbitrage, IFRS, Enforcement, Regulation

JEL Classification: F23, G15, G34, G38, M41, M48

1. Introduction

While earnings management has played an important part in the accounting literature for decades, the focus to date has almost exclusively been on consolidated financial statements. However, the reporting quality implications of consolidating the individual financial reports of domestic and foreign (as well as public and private) subsidiaries have gone largely unexplored. In this paper, we examine the determinants of earnings management location inside the firm. To empirically document whether parent companies exert influence on their subsidiaries to meet the reporting objectives of the firm as a whole, we study earnings management *within* multinational corporations (MNCs).

As the world economy has become increasingly globalized, the development of MNCs has been striking. A 2014 report by the United Nations Conference on Trade and Development (UCTAD) shows that about half of the world GDP stems from foreign subsidiaries of MNCs and that the world's largest 100 MNCs have 70% of their total assets invested abroad. Therefore, given their economic importance, financial reporting practices of MNCs warrant careful attention.

The corporate structures of MNCs are often very complex (La Porta et al., 1999; Claessens et al., 2000; Faccio and Lang, 2002). Corporate ultimate owners (i.e., MNC parent companies) typically control subsidiaries located in countries that differ, for instance, in terms of equity market development, strength of investor protection, rule of law, and quality of legal enforcement. Prior research documents the importance of country-level institutions over and above firm-level characteristics in explaining financial reporting quality (e.g., Ball et al., 2000; Leuz et al., 2003; Burgstahler et al., 2006; Bushman and Piotroski, 2006). However, most of these studies typically investigate earnings management at the "firm" level, focusing on financials statements that result from the consolidation of assets, liabilities, and income of parent

companies and their subsidiaries. As reporting practices of foreign subsidiaries are likely to be influenced by local as well as MNC headquarters-level factors, a better understanding of the within-firm determinants of group reporting quality becomes inherently important.

MNCs' reporting practices have lately been under the scrutiny of regulators. The Public Company Accounting Oversight Board (PCAOB) has recently expressed concern over financial reporting quality for MNCs with a significant number of foreign subsidiaries. Audits of these MNCs are largely based on the work of affiliated audit firms that are separate legal entities in other countries.[1]

Taking advantage of more granular financial data (i.e., parent and subsidiary financial reports), we shed light on how reporting quality is shaped *within* the firm. We study whether MNC headquarters influence subsidiary-level reporting to manage consolidated earnings. Since MNC headquarters have been shown to substantially influence subsidiary-level decision making with regards to financing and investment policies (Bartlett and Ghoshal, 1989; Robinson and Stocken, 2014), we hypothesize that MNCs utilize their subsidiaries to meet their consolidated reporting objectives. Because MNCs are confronted with the possibility to manage their consolidated earnings at the headquarters level *and* through a vast array of foreign and domestic (as well as public and private) subsidiaries, we argue that MNCs manage their earnings through an orchestrated reporting strategy across their subsidiaries.

Our analysis is based on a large sample of majority-owned (publicly-traded and privately-held) subsidiaries across 89 countries which we obtain from the Orbis database published by

[1] In his 2011 keynote speech at Baruch College, James R. Doty, PCAOB Chairman stated: "*My first concern is investor and public awareness. I have been surprised to encounter many savvy business people and senior policy makers who are unaware of the fact that an audit report that is signed by a large U.S. firm may be based, in large part, on the work of affiliated firms that are completely separate legal entities in other countries. For many large, multi-national companies, a significant portion of the audit may be conducted abroad - even half of the total audit hours. […] Based on our inspections, I can say the challenges of managing a multi-national audit are great. […] In many cases principal auditors rely on high-level reports from subsidiary auditors*" (2011 Keynote Address, Baruch College: The Reliability, Role and Relevance of the Audit: A Turning Point. http://pcaobus.org/News/Speech/Pages/05052011_KeynoteAddress.aspx).

Bureau van Dijk Electronic Publishing (BvDEP). The sample comprises 84,115 MNC-parent-subsidiary-year observations stemming from 2,156 unique MNCs observed during the period 2002-2010 for which we have parent and individual subsidiaries' financial and ownership information available.[2]

Our results show that MNC firm- and country-level factors explain subsidiary earnings management over and above subsidiary-level determinants. Most importantly, we document that MNCs systematically exploit regulatory arbitrage opportunities arising from differences in the institutional environments of their subsidiaries. We find evidence that MNC-parents from high-quality institutional environments, where the potential costs of earnings management are high, tend to manage their consolidated earnings more through subsidiaries from low-quality institutional environments. To fully exploit the benefits of regulatory arbitrage, MNCs manage earnings more: *a*) through highly-integrated subsidiaries, where the MNC-parent influence is particularly prominent (e.g., subsidiaries that are wholly owned, with interlocked boards, and named after their parents); and *b*) where detection of misreporting is less likely (e.g., subsidiaries that are foreign, private, and report under different GAAP). In contrast, when subsidiaries are more independent (e.g., horizontal subsidiaries, subsidiaries with specialized knowledge, and relatively larger subsidiaries) the MNC-parent influence on their reporting choices appears less pronounced.

To assess the robustness of our findings to potential endogeneity concerns, we exploit exogenous shocks improving the quality of parent companies' institutional environments. First, we examine how MNCs respond to the 2005 mandatory adoption of IFRS in MNC-parents' countries. We observe that, while on average subsidiary earnings management substantially decreases subsequent to IFRS adoption, MNCs cluster earnings management more in

[2] Hereafter, we refer to the MNC parent company as the *MNC-parent*.

subsidiaries from countries with more lenient regulation. Second, we document that those effects are particularly pronounced in countries where mandatory IFRS adoption is bundled with substantive changes in enforcement (Christensen et al., 2013). We interpret these findings as consistent with the idea that, in response to exogenous shocks to the quality of their home countries' institutions, MNCs rebalance their reporting strategies once regulatory changes render earnings management more costly. Stated differently, MNCs strategically arbitrage regulatory differences among the countries of their subsidiaries.

Our study contributes to the earnings management literature along three dimensions. First, by showing that parent-level factors influence subsidiary earnings management, we shed light on how earnings are managed within the firm. Prior evidence on earnings management in multinational firms is inconclusive and mainly confined to comparisons between U.S. domestic and foreign earnings (Thomas, 1999; Fan, 2012; Hope et al., 2008; Dyreng et al., 2012; Durnev et al., 2014).

Second, we contribute to the international accounting literature that examines how institutional factors, both at the country level (e.g., Ali and Hwang, 2000; Ball et al., 2000; Fan and Wong, 2002; Ball et al., 2003; Leuz et al., 2003 Bushman et al., 2004), and at the firm level (e.g., Ball and Shivakumar, 2005; Burgstahler et al., 2006; Bushman and Piotrosky, 2006), shape firms' reporting behavior. Moving beyond comparisons of reporting practices of firms from different countries, our study adds to this line of research by investigating whether firm- and country-level factors of both parents and subsidiaries jointly explain the location of earnings management inside the firm.

Third, by documenting substantial *regulatory arbitrage* opportunities for MNCs, we contribute to the debate on accounting regulation (e.g., Healy and Palepu, 2001; Bushee and Leuz, 2005; Engel et al., 2007; Leuz, 2007; Leuz et al., 2007; Zhang, 2007; Leuz and Wysocki,

2008). Our study provides evidence supporting the conjecture that, absent global policy coordination, the effects of domestic regulatory intervention to constrain misreporting may be limited. Being able to strategically arbitrage across their subsidiaries' different regulatory regimes, we show that MNCs respond to the introduction of more restrictive regulations by effectively clustering earnings management where the potential costs are lower.

The remainder of the paper proceeds as follows. In Section 2, we review the literature and present our hypotheses. In Section 3, we describe the sources of our data and discuss the sample selection. Section 4 provides the details of the research design. Section 5 presents our findings. Section 6 concludes.

2. Background and Hypotheses Development

2.1 The Consolidation Process

MNCs usually conduct their operations through a number of foreign and domestic affiliates, and hence their organizational structure is typically the one of large business groups. Business groups are the dominant organizational form for large firms especially outside the U.S. (Almeida and Wolfenzon, 2006). From a financial reporting point of view, a business group parent company is required to prepare consolidated (i.e., group) financial statements reflecting the interests in its controlled affiliates (i.e., subsidiary companies).[3] The purpose of consolidated statements is to present the results of operations, and the financial position of a parent company and its subsidiaries, as if the group were a single entity.[4] Typically, the process of consolidation consists of, apart from some specific adjustments (e.g., alignment of different accounting policies; elimination of intercompany transactions), the line-by-line aggregation of group firms'

[3] A *subsidiary* is an *affiliate* company in which the parent entity holds (directly or indirectly) more than 50% of the control rights. In some instances, control can be achieved also with less than 50% control rights (e.g., when the parent has the right to appoint or remove the majority of the subsidiary directors). Parent companies are required to consolidate also affiliates in which they have a *de facto* controlling interest.

[4] ASC 805 - *Business Combinations* and IFRS 10 - *Consolidated Financial Statements*.

assets and liabilities to form a consolidated balance sheet. In a similar way, revenues and expenses of all group firms are aggregated to form a consolidated income statement (Sutton, 2004). Thus, the financial results of individual subsidiaries contribute to the consolidated earnings reported by the MNC. While MNCs may shift profits within the group (e.g., for tax reasons) through related party transactions, the effects of intercompany transactions are typically "washed out" from the consolidated balance sheet and income statement.

2.2 Prior Literature

Evidence on how MNCs manage earnings within their boundaries is surprisingly scant. Prior studies show how capital market incentives and differences in the quality of country institutions affect listed firms' earnings management decisions (e.g., Ball et al., 2000; Leuz et al., 2003; Bushman and Piotroski, 2006). Similarly, other studies show that, compared to their listed peers, private firms exhibit lower earnings quality (Ball and Shivakumar, 2005), higher income shifting (Beuselinck et al., 2014), and respond differently to institutional factors such as book-tax conformity, outside investor protection, and capital market structure (Burgstahler et al., 2006). However, despite the obvious relevance of subsidiary-level reporting for group financial statements, most of the studies that investigate earnings quality in public firms analyze consolidated financials only. Similarly, studies on earnings quality in private firms usually focus on ultimate owners and exclude subsidiaries from their samples.[5]

Kedia and Rajgopal (2011) present evidence consistent with the idea that *location* matters for earnings management. They find that listed U.S. firms located closer to the Securities and

[5] Ball and Shivakumar (2005) exclude subsidiaries from their analysis arguing that subsidiary financial reports are of "internal" nature and hence play a different accounting role (see: p. 99). Burgstahler et al. (2006) similarly exclude privately held subsidiaries of listed companies from their analysis (see: p. 992).

Exchange Commission (SEC) premises, and in areas with greater past SEC enforcement activity, are more (less) likely to be investigated (manipulate their financial reports).

Three recent papers examine earnings management location decisions in the context of MNCs. Fan (2012) finds that U.S. MNCs manage foreign earnings to avoid losses. Similarly, Durnev et al. (2014) show that U.S. firms with offshore affiliates manage earnings more. Finally, Dyreng et al. (2012) find that U.S. MNCs with extensive foreign operations in weak rule of law countries have more foreign earnings management than companies with subsidiaries from countries where the rule of law is strong. These studies, however, rely mostly on segment disclosure (e.g., foreign sales) and hence offer limited insight on the within-group determinants of MNC earnings management location. Our study is, to the best of our knowledge, the first to use subsidiary-level data to analyze the factors driving the geography of earnings management within MNCs.

2.3 Hypotheses Development

Our study aims to provide evidence on the determinants of earnings management within MNCs. In particular, we investigate whether MNC parent-level factors systematically influence the degree of earnings management in subsidiaries. The finance literature has focused on how different organizational structures affect capital structure, dividend payout policy, and investment efficiency (Stein, 2002; Graham et al., 2011), while studies in accounting have examined the implications for performance evaluation, compensation, and budgeting (Baiman et al., 1995; Baldenius and Reichelstein, 2006).

We study the implications of MNC organizational structure for financial reporting quality. As the allocation of decision rights within firms is a determinant of success for MNCs (Hayek, 1945), understanding the amount of decision rights over subsidiary reporting choices retained at

the headquarters level is of crucial importance (Robinson and Stocken, 2013; Beuselinck and Deloof, 2014). We posit that MNCs manage their consolidated earnings through an orchestrated reporting strategy across subsidiaries over which they exert a significant influence. Stated differently, we argue that MNCs have incentives to influence the outcome of their subsidiaries' reporting choices to meet MNC-level reporting objectives. Accordingly, we expect the influence of MNC headquarters to explain subsidiary earnings management over and above subsidiary-specific determinants. Hence we formulate our first hypothesis:

H1: MNC-parent (firm and country) characteristics explain subsidiary-level earnings management over and above subsidiary characteristics.

The industrial organization literature studies the optimal allocation of decision rights within the firm (e.g., Grossman and Hart, 1986; Aghion and Tirole, 1997; Hart and Holmstrom, 2010). The influence of MNC headquarters on its subsidiaries is stronger the higher the degree of subsidiary *integration* within the MNC structure (Alfaro and Charlton, 2009). More specifically, MNC earnings management decisions may be translated more easily from the headquarters to subsidiaries if these are better integrated within the MNC.

In contrast, subsidiaries that are more decentralized from the headquarters tend to have more specialized knowledge and hence are more independent (Christie et al., 2001). If subsidiaries are delegated with high decision-powers, and make their corporate decisions with high degree of *independence*, it may be more difficult to persuade local managers to manage earnings to meet MNC-level reporting objectives.

Also, MNCs may find it more convenient to influence subsidiaries' reporting choices when the degree of earnings management *opportunities* offered by these subsidiaries is higher. Consistent with the idea that it may be less costly to manage earnings away from the "radar" of efficient enforcers, recent studies have documented that location is an important driver of

financial reporting quality (Kedia and Rajgopal, 2011). Thus, we conjecture that MNCs are more likely to engage in earnings management when the associated costs are lower (e.g., through foreign subsidiaries, subsidiaries from countries with less stringent regulations, private firms).

Based on the previous reasoning on the degree of MNC-parent/subsidiary integration, subsidiary independence, and earnings management opportunities offered by subsidiaries, we formulate the following cross-sectional hypotheses:

H2a: MNC-parent influence on subsidiary earnings management increases in the degree of subsidiary integration.

H2b: MNC-parent influence on subsidiary earnings management decreases in the level of subsidiary independence.

H2c: MNC-parent influence on subsidiary earnings management increases in the degree of earnings management opportunities offered by subsidiaries.

Next, we hypothesize that when MNCs are confronted with the possibility to manage their earnings at the headquarters and/or across a vast array of foreign and domestic subsidiaries, they may take advantage of international regulatory arbitrage opportunities. Regulatory arbitrage takes place when firms engage in rent-seeking behavior by exploiting differences in regulation across jurisdictions.[6] For instance, Houston et al. (2012) show that cross-country differences in regulation affect international bank flows. Banks exploit regulatory gaps to transfer funds to branches located in markets with fewer regulations. Similarly, we argue that MNCs may choose to manage their earnings in countries where the quality of the institutional infrastructures (e.g., the quality of reporting enforcement, auditing) and the level of scrutiny over financial reporting are lower in relative terms. Our conjecture departs from studies that document a negative

[6] For a comprehensive review of the regulatory arbitrage phenomenon we refer to Fleischer (2010).

association between a country's institutional quality and the level of earnings management (Leuz et al., 2003) as our focus is not on comparisons of firms from different countries. Rather, we seek to understand how the interaction between different financial reporting environments within the same firm affects reporting quality. Thus, we argue that MNCs opportunistically exploit differences in the institutional quality of the different countries in which they operate. More specifically, we hypothesize that MNCs from high quality regulatory environments exploit variation in institutional quality across the countries of their subsidiaries to manage earnings where the expected costs are lower. Hence, we formulate our third hypothesis:

H3: MNC-parents manage subsidiary earnings by exploiting regulatory arbitrage opportunities arising from cross-country differences in institutional quality.

3. Data and Sample Selection

We compile MNC ownership, governance, and financial data for MNCs and their subsidiaries from the Orbis database published by BvDEP. Orbis provides comprehensive coverage for over 130 million public and private companies around the world. BvDEP directly collects firm-level data from financial reports, as well as from a network of 120 well-established national and international data providers.[7]

In addition to Orbis, we obtain information on macroeconomic data (inflation and GDP growth) from the International Monetary Fund's World Economic Outlook Database (2013), country statutory tax rates from KPMG International (2011), and countries' rule of law indices from the Worldwide Governance Indicators created by the World Bank (Kaufmann et al., 2009).

[7] BvDEP has agreements with many data providers including: Cerved, CredInform, Creditreform, Crif, D&B, Dow Jones, the Economist Intelligence Unit, Ellisphere, EDGAR Online, Experian, Factset, Fitch Solutions, Informa, Jordans, Korea Information Service, Huaxia International Business Credit Consulting Company, LexisNexis, Mode Finance, Moody's, Newsedge, Standard & Poor's, Teikoku Databank, Thomson Reuters, Trucost, TSR D&B, UC, and World'Vest Base (Source: Bureau van Dijk).

Our sample selection starts with the mapping of MNC group structures for which we first need to retrieve available information on ultimate owners (i.e., business group parent companies) from Orbis. We identify ultimate owners by adopting an approach similar to Shroff et al. (2014) who follow the Orbis ultimate owner classification. A global ultimate owner is defined in Orbis as an independent parent company in which no single corporate shareholder holds more than 25% of the company's stock. For each global ultimate owner (parent firm), we then collect subsidiary information from the Orbis ownership files. We retrieve information about subsidiaries that are either directly (level 1 subsidiaries), or indirectly (level 2, 3, 4 and 5 subsidiaries) held by their respective parents through other subsidiaries. We discard subsidiaries with missing information on immediate ownership to mitigate the potential concern that a subsidiary, appearing multiple times at different levels of the control chain, may be double-counted.[8] We exclude parents with unavailable consolidated financials, all parents and subsidiaries from financial institutions (SIC codes 6000-6999), utilities (SIC codes 4800-4999), and quasi-regulated (SIC codes 4000-4499) industries, as well as parents and subsidiaries with total assets and sales lower than U.S. $10,000. Based on the above criteria, we are able to initially identify 9,969 unique parents and 40,172 unique subsidiaries. Next, to ensure that all the subsidiaries in our sample are actually consolidated in the group financial statements of their respective parents, we drop observations from non-controlled subsidiaries.[9] Also, we exclude

[8] Following the approach by Shroff et al. (2014), we retain, for example, level 3 subsidiaries only if information about the ownership links at each single level of the control chain up to the MNC-parent (i.e., in this case three ownership links) is non-missing. The MNC-parent control rights in the level 3 subsidiary are then computed as the weakest link in the chain of control rights (La Porta et al., 1999; Claessens et al., 2000; Nenova, 2003). For example, if a parent (P) holds 80% of the control rights of its level 1 subsidiary (S_1), which in turn owns 75% of the control rights of its level 2 subsidiary (S_2), which in turn holds 90% of the control rights of its level 3 subsidiary (S_3), then P controls 75% of S_3, where 75% is equal to min{80%;75%;90%}. We discard all subsidiaries with control rights below 50%. The choice of such a conservative cut-off mitigates the concern that we might be including unconsolidated subsidiaries in our sample, *albeit* with a potential loss of subsidiaries controlled by their parents through ownership stakes lower than 50%.

[9] To mitigate the potential concern of missing consolidated subsidiaries controlled through an ownership stake lower than our conservative 50%, we repeat our analyses using a 20% control rights threshold. The tenor of our findings stays unchanged.

business groups that are entirely domestic (i.e., non-MNCs), have less than two subsidiaries, as well as those observations with missing data for our analyses. Our final sample comprises 84,115 MNC-parent-subsidiary-year observations spanning 89 countries over the period 2002-2010, with 2,156 unique MNC-parents and 15,020 unique subsidiaries. Table 1, Panel A provides further details on the sample selection procedure.

- TABLE 1 ABOUT HERE -

Table 1, Panel B presents the distribution of MNC-parents and subsidiaries by year. There is higher coverage in later years with respect to both parents and subsidiaries, which is consistent with an increase in Orbis coverage over time. Table 1, Panel C shows the distribution of MNC-parents and subsidiaries by one-digit SIC code. Approximately, 70% of MNC-parents are in the manufacturing industry (one-digit SIC codes 2 and 3). Manufacturing is also the most represented industry among subsidiaries (39.48% of the sample), followed by wholesale trade (one-digit SIC code 5) with 34.53% of the sample observations.

MNC-parents and their subsidiaries in our sample are domiciled in 89 different countries. Table 1, Panel D presents the distribution of MNC-parent and subsidiary firm-year observations across these countries. Our MNC-parents are from 60 different countries. The most represented country for MNC-parents is Japan (20.54%), followed by U.S. (18.96%), and United Kingdom (8.19%). Subsidiaries are domiciled in 83 different countries with Japan (20.33%), France (18.12%), Spain (8.53%), and United Kingdom (6.08%) being the most represented. This cross-country heterogeneity reflects not only differences in economic magnitude but also differential reporting requirements (e.g., in the U.S. private firms are not required to disclose their financial statements).[10]

[10] In line with Shroff et al. (2014), we decide to keep in our sample also countries with very few MNC-parent and/or subsidiary firm-year observations. This is to avoid a potential "domino effect" in the sample selection procedure which could be induced by dropping countries with less than a defined threshold in terms of number of observations.

Panel E presents the geographic distribution of subsidiaries by region of their respective MNC-parent. Each row represents the overall number of subsidiaries in each MNC-parent country adding up to 100%.[11] The great majority of MNC-parents are located in Western Europe, East Asia, and North America, while a large proportion of subsidiaries are domiciled in Western Europe, East Asia, and Eastern Europe. The percentages reported on the diagonal are the proportions of subsidiaries located in the same region of their parents. This preference for proximity (i.e., MNCs investing in subsidiaries that are closer to their headquarters) is consistent with prior research documenting the home bias phenomenon (Portes and Rey, 2005). For example, 83.14% of Western European MNCs have their subsidiaries in Western Europe.[12]

4. Research Design

4.1 Absolute Discretionary Accruals as a Proxy for Earnings Management

The degree of managerial judgement in determining earnings is often associated with the relative magnitude of accruals (Dechow et al., 1996; Healy and Whalen, 1999). In our study, we measure the degree of subsidiary earnings management using the magnitude of absolute discretionary accruals for three reasons. First, we do not focus on a particular event around which one could hypothesize the direction of the reporting bias. Rather, we analyze the cross-section of subsidiaries, and absolute discretionary accruals have the advantage to capture the net

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For example, imposing a minimum of 20 subsidiary-years, would exclude subsidiary observations from Zambia (17 subsidiary-years). However, those subsidiaries might be controlled by, for example, 1 MNC-parent from Brazil (31 MNC-parent-years) that has hypothetically 1 domestic subsidiary corresponding to 9 subsidiary-years (i.e., assuming the subsidiary is controlled by the parent throughout the sample period). The exclusion of the subsidiary observations from Zambia therefore, would induce first the dropping of the Brazilian parent and, consequently, the reduction of the number of Brazilian subsidiary firm-years from 27 to 18, which would then imply the exclusion of all Brazilian subsidiaries (because observations fall below the 20 subsidiary-years threshold), and so on.

[11] The percentages reported in Table 1, Panel E are based on the number of subsidiaries and hence do not reflect size heterogeneity across subsidiaries. However, expressing percentages of subsidiary investment based on total assets (untabulated) yields qualitatively similar results.

[12] Results in Table 1 Panel E are potentially affected by financial data availability. For example, North American MNCs having only 12.4% of their subsidiaries domiciled in North American countries might also reflect the limited availability of financial statement data for private U.S. firms.

effect of both income-increasing and income-decreasing reporting choices. Second, compared to benchmark measures of earnings management, absolute discretionary accruals overcome the problem of misclassifying benchmark beaters as earnings manipulators when their results are due to improvements in operations (Kinney and Libby, 2002). Third, several influential studies use absolute discretionary accruals as a proxy for earnings management.[13] More recently, Dyreng et al. (2012) use absolute discretionary accruals to measure (parent-consolidated) earnings management in U.S. MNCs. Thus, we believe that the use of absolute discretionary accruals might also facilitate direct comparisons between the evidence from prior literature and that presented in our study.

We follow prior research and measure discretionary accruals using the residuals from a performance-adjusted modified Jones model (Dechow et al., 1995; Kothari et al., 2005), with estimations performed across all subsidiary countries within groups formed by two-digit SIC industry codes and years as follows:

$$\frac{TCA_{i,j,t}}{TOTASS_{i,j,t-1}} = \beta_0 \frac{1}{TOTASS_{i,j,t-1}} + \beta_1 \frac{\left(\Delta REV_{i,j,t} - \Delta RECT_{i,j,t}\right)}{TOTASS_{i,j,t-1}} + \beta_2 ROA_{i,j,t-1} + \beta_3 INFLATION_{i,t-1} + \beta_4 GDP\_GWT_{i,t-1} + \varepsilon_{i,j,t}, \quad (1)$$

where $TCA_{i,j,t}$ is total current accruals in year *t* for subsidiary *j* in country *i*; $TOTASS_{i,j,t-1}$ is firm *j*'s book value of total assets at the beginning of year *t*; $\Delta REV_{i,j,t}$ is subsidiary *j*'s change in revenues between year *t-1* and *t*; $\Delta RECT_{i,j,t}$ is subsidiary *j*'s change in receivables between year *t-1* and *t*; $ROA_{i,j,t-1}$ is lagged return on assets computed as operating income divided by book value of total assets, and is meant to control for subsidiary performance; $INFLATION_{i,t-1}$ and $GDP\_GWT_{i,t-1}$ are respectively controls for prior-year inflation and change in per-capita (in real

[13] See, e.g., Warfield et al. (1995), Dechow and Dichev (2002), Frankel, et al. (2002), Klein (2002), Chung and Kallapur (2003), Myers et al. (2003), Haw et al. (2004), and Bergstresser and Philippon (2006).

purchasing power based) GDP, both meant to capture the business cycle in each subsidiary country. The inclusion of these controls follows the approach by Chaney et al. (2011).[14]

We estimate equation (1) pooling observations across all subsidiary countries within two-digit SIC industry and year groups because of the small number of firms in each industry group in several countries. We require a minimum of ten observations for the discretionary accruals estimation in each two-digit SIC industry-year group. Then, for each subsidiary *j*, we calculate discretionary accruals ($DACC_{i,j,t}$) as the estimated residual from model (1).

Because we are mainly interested in the magnitude, rather than the direction, of earnings management as explained above, we take the absolute values of $DACC_{i,j,t}$ ($|DACC_{i,j,t}|$) so that larger values correspond to higher earnings management, independently of its direction.

In unreported sensitivity analyses (available upon request), we repeat all our tests using several alternative earnings management constructs. First, because cross-country estimation of discretionary accruals is effective only if the model properly controls for differences across countries, as an alternative strategy we estimate discretionary accruals within each subsidiary country in groups formed by Campbell (1996) twelve industries and years.[15] This alternative approach trades-off the benefit of within-country estimation with the (non-trivial) cost of losing observations from country-industry groups with limited number of firms. Second, we proxy for earnings management by using the absolute value of discretionary accruals based on the

[14] Following prior research (Dechow et al., 1995; Leuz et al., 2003), we compute total current accruals as $TCA_{j,t} = (\Delta CA_{j,t} - \Delta CASH_{j,t}) - (\Delta CL_{j,t} - \Delta STD_{j,t}) - DEPR_{j,t}$, where $TCA_{i,j,t}$ is total current accruals in year *t* for subsidiary *j*, $\Delta CA_{j,t}$ is change in total current assets in year *t* for subsidiary *j*, $\Delta CASH_{j,t}$ is change in cash and cash equivalents in year *t* for subsidiary *j*, $\Delta CL_{j,t}$ is change in total current liabilities in year *t* for subsidiary *j*, $\Delta STD_{j,t}$ is change in short-term debt in year *t* for subsidiary *j*, and $DEPR_{j,t}$ is depreciation and amortization expense in year *t* for subsidiary *j*.

[15] The Campbell (1996) twelve industry classification, compared to two-digit SIC grouping allows us to identify more populated industry groups within a country, *albeit* at the expense of industry specialization. In the within-country estimation, lagged inflation ($INFLATION_{i,t-1}$) and lagged change in per-capita GDP ($GDP\_GWT_{i,t-1}$) are dropped from model (1).

Dechow-Dichev (2002) model.[16] Third, we use a firm-level estimation approach and compute the absolute value of abnormal working capital accruals (DeFond and Park, 1994; Francis and Wang, 2008).[17] The main advantage of a firm-level estimation approach is that the earnings management construct does not rely on comparisons with the behaviour of industry (country) peers. Moreover, firm-level estimation *de facto* rules out cross-country differences in accounting practices.[18] Sensitivity tests conducted using these alternative proxies show that our inferences do not hinge on any specific earnings management construct, and hence yield qualitatively similar results.[19]

4.2 Baseline Model and Identification Strategy

We study the influence of MNCs over their subsidiary reporting behaviour using a large panel of MNC-parent-subsidiary-year observations from 89 countries around the world. Specifically, we investigate whether MNC-parent (country- and firm-level) characteristics explain cross-sectional variation in subsidiary earnings management over and above subsidiary

[16] We compute Dechow-Dichev (2002) discretionary accruals by estimating the following model pooling observations across subsidiary countries within two-digit SIC industry and year groups:

$$\frac{TCA_{i,j,t}}{TOTASS_{i,j,t-1}} = \beta_0 \frac{1}{TOTASS_{i,j,t-1}} + \beta_1 \frac{(CFO_{i,j,t-1})}{TOTASS_{i,j,t-2}} + \beta_2 \frac{(CFO_{i,j,t})}{TOTASS_{i,j,t-1}} + \beta_3 \frac{(CFO_{i,j,t+1})}{TOTASS_{i,j,t}} + \beta_4 INFLATION_{i,t-1} + \beta_5 GDP\_GWT_{i,t-1} + \varepsilon_{i,j,t},$$

where $CFO_{i,j,t}$ is cash flow from operations, calculated following the balance sheet approach as the difference between net income before extraordinary items and total accruals.

[17] To compute the abnormal working capital accruals measure (DeFond and Park, 1994; Francis and Wang, 2008), our computation of expected accruals is based on each firm's prior-year linear relation between sales and working capital plus long-term accruals as $AWCA_{i,t} = TCA_{i,t} - \left(\frac{TCA_{i,t}}{SALES_{i,t-1}} * SALES_{i,t-1}\right)$, where $AWCA_{i,t}$ represents abnormal working capital accruals, and all other variables are as previous defined.

[18] The use of these alternative proxies eliminates several smaller countries, and/or less populated industries, and/or subsidiaries with insufficient time-series data, and reduces the sample from 84,115 to 81,043 MNC-parent-subsidiary-year observations in the case of within-country estimation of discretionary accruals, to 77,827 MNC-parent-subsidiary-year observations in the case of absolute discretionary accruals computed following the Dechow-Dichev model, to 77,854 MNC-parent-subsidiary-year observations in the case of abnormal working capital accruals.

[19] The different proxies that we alternatively use to capture subsidiary earnings management are all highly correlated with the measure we use in our analyses (i.e., the absolute value of discretionary accruals calculated using a performance-adjusted modified Jones model estimated across all subsidiary countries within groups formed by 2-digit SIC industry codes and year). The Pearson (Spearman) correlation coefficients between the alternative measures and our proxy range from 0.535 to 0.941 (0.369 and 0.853) and are all significant at the 1% level (two-sided).

characteristics. To examine *H1*, we estimate the following subsidiary-level pooled, cross-sectional OLS regression model (where subscript *MNC* denotes a MNC-parent, subscript *SUB* denotes a subsidiary, and subscript *t* denotes the year):

$$|DACC_{SUB,t}| = \beta_0 + \beta_1 CHARACTERISTICS_{SUB,t} + \beta_2 CHARACTERISTICS_{MNC,t} + \sum_{j=1}^{k} \varphi_j \text{ FIXED\_EFFECTS}_j + \varepsilon_{SUB,t}. \quad (2)$$

The dependent variable ($|DACC_{SUB,t}|$) is the subsidiary absolute value of discretionary accruals computed following the procedure described in the previous section. $CHARACTERISTICS_{SUB,t}$ and $CHARACTERISTICS_{MNC,t}$ are, respectively, vectors of subsidiary- and MNC-parent-level characteristics (see Section 5.2). $FIXED\_EFFECTS_j$ is a series of fixed effects intended to capture unobservable characteristics that are likely to affect subsidiary-level earnings management. In its baseline specification, model (2) includes subsidiary-industry and year fixed effects to respectively account for differences in subsidiary earnings management across different industries and years. Moreover, since subsidiary firm-year observations within the same country-industry group may share common (and possibly unobservable) characteristics, we cluster standard errors in all specifications at the subsidiary-country and subsidiary-industry level.[20]

In our empirical specifications, we interpret an increase in explanatory power driven by MNC-parent-level factors (as well as higher levels of subsidiary earnings management when regulatory arbitrage opportunities can be exploited) as evidence consistent with our theory. However, because of the endogenous nature of ownership structures and the quality of

[20] Our clustering strategy is rather conservative, as it allows for unspecified correlation in the error terms across time and across subsidiaries in the same country and industry. In unreported robustness tests, we also perform our analyses applying alternative clustering strategies. First, we cluster standard errors at the subsidiary country and *within-country* subsidiary-industry level. Second, because residuals may be correlated across subsidiaries and/or over time, and hence OLS standard errors may be biased (Petersen, 2009; Gow et al., 2010), we alternatively cluster standard errors by subsidiary and year. The different clustering approaches yield qualitatively similar results (*albeit* changing the significance levels of some of the coefficients of interest) across all tests, and do not change the interpretation of our findings.

institutional environments, some unobserved factors, possibly associated with both our outcome variable and MNC-parent firm- and country-level factors, could bias our estimates.

We therefore use several empirical strategies to improve identification. First, country-level factors of both MNC-parents and their subsidiaries, such as their legal regimes and macroeconomic conditions, might affect both the MNC-parent propensity to manage earnings, and the actual extent of subsidiary earnings management. To mitigate the concern that macro factors might influence our estimates, we sequentially introduce an extensive set of fixed effects, and specifically: (*i*) subsidiary-country fixed effects to account for unobservable factors that affect subsidiary earnings management at the subsidiary country level; (*ii*) MNC-parent-country fixed effects to control for MNC-parent-country factors potentially affecting subsidiary earnings management; (*iii*) country-pair fixed effects to control for differences in the characteristics of subsidiary countries relative to their MNC-parent countries (e.g., corporate tax rates, economic growth, property rights).

Second, since some MNCs may be arguably better at exploiting their subsidiaries for earnings management objectives, we repeat our tests by including MNC-parent fixed effects to absorb unobservable MNC-level factors that might influence subsidiary earnings management. This fixed effects structure implies that our model provides within-group estimates of our variables of interest (i.e., the average subsidiary earnings management is estimated uniquely exploiting within-group variation in the key variables across subsidiaries).

Third, our results may be biased if earnings management is correlated across subsidiaries, and our controls fail to capture the underlying determinants of such earnings management. To mitigate this concern, and investigate whether our results are robust to such omitted determinants, we rely on a battery of MNC-parent- and subsidiary-level factors (both firm- and industry-level factors). Finally, since we do not directly observe MNC-parent influence over

subsidiary reporting choices, we cannot be entirely sure that such an influence is at play. In particular, we might not draw any causal conclusion on the extent to which MNC-parents exercise their influence to exploit subsidiary firm-level characteristics (or regulatory arbitrage opportunities) for the purpose of earnings management. To mitigate this concern, and draw a causal link between MNC-parent influence and extent of subsidiary earnings management, we exploit a quasi-experiment involving country-level exogenous shocks to the reporting environment of MNC-parents. Because measures such as the rule of law are sticky over time, we use the 2005 mandatory adoption of IFRS, and the introduction of substantive changes in reporting enforcement, as country-level proxies for a general improvement in MNC-parents' institutional quality. Prior research suggests that IFRS adoption, especially if bundled with changes in enforcement, is associated with higher reporting quality (Barth et al., 2008; Hung et al., 2014) and a significant reduction in information asymmetry (Daske et al., 2008; Wahid and Yu 2014; Hail et al., 2014). Moreover, as these events occur at the MNC-parent-country level, they are inherently exogenous to the individual subsidiary.

5. Empirical Results

5.1 Descriptive Statistics and Correlations

Table 2, Panel A presents descriptive statistics for the MNC-parent and subsidiary variables used in our analyses. The mean (median) value of the rule of law index for MNC-parent-countries is 0.829 (1.010), and for subsidiary-countries is 0.427 (0.500). This is consistent with the idea that MNCs tend to have their headquarters in high quality institutional environments, whereas, for several reasons, their subsidiaries tend to be domiciled in lower institutional environments (e.g., cheaper labor and production costs). The mean (median) level

of subsidiary earnings management ($|DACC_{SUB}|$) is 0.130 (0.074).[21] The average book value of subsidiary total assets ($TOTASS_{SUB}$) is 0.6% of the consolidated average book value of MNC-parent total assets ($TOTASS_{MNC}$). While subsidiaries are similar to parents in terms of profitability (with an average return on assets of 6.5%, close to the 6.8% average reported by MNC-parents), they exhibit higher sales growth (14.8% versus 10.9%), lower leverage (5.2% versus 13.5%), and higher volatility of operating cash flows (0.155 versus 0.064). Only 2.8% of subsidiaries in our sample are publicly listed firms.[22] Roughly half of the observations pertain to foreign subsidiaries ($FOREIGN_{SUB}$). MNC-parents hold 100% of their subsidiaries' control rights in about 40% of the cases ($WHOLLY\_OWN_{SUB}$), and the average MNC group has 22 subsidiaries.

- TABLE 2 ABOUT HERE -

To mitigate the concern that the signed discretionary accruals ($DACC_{SUB}$) of subsidiaries within the same MNC "cancel out" upon consolidation, (i.e., within the same business group, some subsidiary exhibit positive, while some others negative discretionary accruals with a zero average net effect), we analyze the distribution (Table 2, Panel B) of the *signed* $DACC_{SUB}$ correlation calculated across all subsidiaries *within* the same MNC, and the *signed* $DACC_{SUB}$ correlation calculated *across* all subsidiaries in the same country-industry group, excluding the ones in the same MNC. If subsidiary earnings management were to be a "zero-sum game" at the consolidated level, the average within-group correlation should be negative, and possibly lower than the across-group correlation. Our univariate results reveal, in contrast, that the mean

[21] We are able to retrieve unconsolidated financial data for a subsample of our MNC-parents (60% of the full sample). The mean (median) MNC-parent *unconsolidated* earnings management is 0.066 (0.037) and hence lower than the average subsidiary-level earnings management. This suggests that earnings management is more pervasive at the subsidiary level and is consistent with the idea that MNC-parents manage their *consolidated* earnings through their subsidiaries.

[22] In contrast, 85.3% of MNC-parents are listed in public equity markets (untabulated).

(0.034) within-group correlation is not only positive, but also larger than the mean (0.015) across-group correlation, with the difference being statistically significant (at the 1% level). [23]

Table 2 Panel C presents the Pearson (above the diagonal) and Spearman (below the diagonal) correlations between key variables. The documented correlations suggest that subsidiaries of MNC headquartered in strong rule of law countries exhibit higher levels of discretionary accruals. The subsidiary rule of law index, instead, appears to be negatively correlated with the extent of subsidiary earnings management, which is consistent with higher earnings management in countries with weak institutional quality, as documented by Leuz et al. (2003). All proxies for the level of MNC-parent/subsidiary integration, as well as the measures intended to capture earnings management opportunities are positively correlated with subsidiary earnings management. In contrast, all proxies for the degree of subsidiary independence are, as expected, negatively correlated with subsidiary earnings management.

5.2 MNC-Parent Influence over Subsidiary Earnings Management

Our first set of analyses aims at investigating whether MNC-parents exert influence over their subsidiaries' reporting choices. To examine *H1* and test whether MNC-parent firm-level factors explain cross-sectional variation in subsidiary earnings management *over and above* subsidiary characteristics, we estimate our baseline model (model (2) described in section 4.2) including several firm-level characteristics of both subsidiaries ($CHARACTERISTICS_{SUB,t}$) and their respective MNC-parents ($CHARACTERISTICS_{MNC,t}$). Prior studies document how differences in firm size, performance, growth, volatility of the operating environment, length of the operating cycle, and leverage represent fundamental determinants of earnings

[23] Moreover, we find that subsidiary earnings management is positively correlated with both consolidated and unconsolidated MNC-parent-level earnings management.

management.[24] Consequently, we include a set of firm-specific characteristics of both MNC-parents and subsidiaries (MNC-parent and subsidiary subscripts suppressed).[25] Since prior research shows that large firms tend to have lower levels of discretionary accruals compared to smaller firms, we include firm size (*LOG(TOTASS)*), measured as the natural logarithm of book value of total assets. As performance is correlated with discretionary accruals such that firms with lower (higher) earnings are more likely to have negative (positive) discretionary accruals (e.g., Dechow et al., 1995), we include the absolute value of return of assets (|*ROA*|), and the absolute value of cash from operations (|CFO|) to capture differences in performance. Because accruals are likely related to firm growth and growth opportunities (e.g., Lee et al., 2006), we include sales growth (*SALES_GWT*) measured as the annual percentage change in sales. To control for operating risk, we include two proxies: cash flow volatility (σ*(CFO)*), measured as the standard deviation of cash flow from operations scaled by book value of total assets, and sales volatility (σ*(SALES)*), measured as the standard deviation of sales scaled by book value of total assets. To capture differences in the length of the operating cycle, we include the sum of days receivables and days inventory (*OP_CYCLE*).[26] To take into account differences in financial distress and bankruptcy risk (DeFond and Jimbalvo, 1994), we include firm leverage (*LEVERAGE*), measured as the ratio of the sum of long-term debt and short-term debt to book value of total assets, and a dummy variable that identifies loss-making firms (*D_LOSS*).[27]

Along with the previous variables that are measured both at the MNC-parent and subsidiary levels, we also include the tax incentive measure introduced by Huizinga and Laeven (2008) that

[24] See Dechow (1994), Dechow and Dichev (2002), Hribar and Nichols (2007), and Liu and Wysocki (2008).
[25] MNC-parent variables are measured at the consolidated level.
[26] Days receivables is defined as 360 divided by the ratio of average receivables to sales. Similarly, days inventory is defined as 360 divided by the ratio of average inventory to cost of goods sold. Operating cycle is scaled by 10,000 for exposition.
[27] Our research design incorporates the solution proposed by Hribar and Nichols (2007) to alleviate potential problems with absolute discretionary accrual measures simply reflecting higher variance of cash flows. Our models include controls for size, sales volatility, and cash flow volatility both at the MNC-parent and subsidiary levels.

captures both the MNC incentive (and opportunity) to shift income in, or out of, a specific subsidiary, as well as the number of subsidiaries within each MNC group structure (*LOG(N_SUB)*). The tax incentive variable (*TAX_INCENTIVE*) controls for subsidiary-level earnings management due to tax considerations. The rationale for including the number of subsidiaries within the same group is that MNCs with more subsidiaries may have more earnings management opportunities. All continuous variables are winsorized at the 1st and 99th percentile of their distributions.[28] Detailed variable definitions are presented in the Appendix.

Table 3 presents the results from the estimation of model (2). Since evidence on subsidiary earnings management is scant and mainly indirect, to confirm that firm- and country-level determinants commonly identified in the literature for firms in general also drive *subsidiary* earnings management, we present in column (1) a regression of subsidiary earnings management on subsidiary firm-level determinants. The model includes subsidiary-industry and year fixed effects to control for unobservable industry- and year-specific determinants of earnings management.

- TABLE 3 ABOUT HERE -

Consistent with prior research, we find that size, performance, growth, risk, length of the operating cycle, financial distress, and tax incentives are important determinants of the observed level of discretionary accruals. In particular, we find that subsidiaries that are smaller, high-growth, more risky, loss-making, with longer operating cycles, and subject to MNC tax incentives to shift income, exhibit higher levels of discretionary accruals.

Prior research shows that country-level incentives explain a significant portion of variation in earnings management. To reinforce that this applies to subsidiaries as well, we include in the model presented in column (2) subsidiary-country fixed effects to the baseline specification. We

[28] Alternatively, we truncate all continuous variables at the 1st and 99th percentile of their distributions. This alternative design choice does not change the tenor of our findings.

report the p-value (0.000) from an F-test that strongly rejects the hypothesis that the coefficients on the subsidiary-country dummies are jointly equal to zero. The adjusted R^2 increases from 0.465 in column (1) to 0.467 in column (2) as we add subsidiary-country dummies. We also report the p-value (0.000) from a Vuong-test that strongly rejects the hypothesis of an insignificant difference in R^2.

In column (3) we examine the incremental explanatory power of MNC-parent characteristics for subsidiary-level discretionary accruals. Beaver et al. (2014) find that parent characteristics have explanatory power for subsidiary bankruptcy prediction models. Similarly, we show that MNC-parent factors explain subsidiary-level earnings management over and above subsidiary characteristics. Specifically, we find that subsidiaries in larger multinational groups, with high volatility of cash from operations, and longer operating cycles exhibit higher earnings management. In contrast, multinational groups with many subsidiaries seem to manage less, possibly because of better opportunities to diversify their earnings management across their subsidiaries.[29] We report the p-value (0.000) from an F-test that strongly rejects the hypothesis that the coefficients on MNC-parents' characteristics are jointly equal to zero. The adjusted R^2 increases from 0.467 in column (2) to an average of 0.468 in column (3) as we add parent-specific characteristics. We report the p-value (0.000) from a Vuong-test that strongly rejects the hypothesis of an insignificant difference in R^2.

In columns (4) and (5), we augment the specification presented in column (2) by introducing respectively MNC-parent-country and MNC-parent/subsidiary country-pair fixed effects. F-tests

[29] We retrieve data on auditor type for a subsample of our MNC-parents and subsidiaries. However, Orbis provides auditor information only for the most recent year. Therefore, the quality of a big4 auditor indicator variable would rely on the assumption that firms are somewhat sticky in their choice of auditor type. With this *caveat* in mind, in unreported tests results (available upon request), we include the auditor type indicators for both MNC-parents and subsidiaries and find that while, consistent with expectation hiring a highly reputed auditor in the subsidiary reduces the extent of subsidiary earnings management, the presence of a highly reputed auditor in the MNC-parent increases the likelihood of subsidiary earnings management. This finding is consistent with the parent managing earnings at the subsidiary when it is harder (i.e., more costly) to manage earnings at the parent level.

for the joint significance of the respective MNC-parent-country and country-pair dummies, and a Vuong-test for the difference in R^2, strongly reject the hypothesis that both unobservable MNC-parent-country and country-pair factors do not explain cross-sectional variation in subsidiary earnings management. The analyses in Section 5.4 shed light on how such country-level factors influence subsidiary reporting choices. Finally, in column (6) we introduce MNC-parent fixed effects. As expected, the inclusion of MNC-parent dummies absorbs most of the explanatory power of the individual MNC-parent characteristics which are then allowed to vary only in the time-series. Taken together, this evidence suggests the importance of MNC-parent (country- and firm-level) factors that are likely to influence the degree of subsidiary earnings management.

5.3 Cross-Sectional Variation in MNC-Parent Influence over Subsidiary Earnings Management

Having established that MNC-parent factors influence subsidiaries' reporting choices, we next investigate how the extent of this influence varies across different types of subsidiaries. To examine the cross-sectional variation in the strength of MNC-parent influence over its subsidiaries, we augment the model presented in column (3) of Table 3 by including proxies meant to capture the degree of MNC-parent/subsidiary *integration*, the extent of subsidiary *independence*, and the presence of *opportunities* to influence subsidiary reporting policies. In line with our cross-sectional hypotheses (*H2a*, *H2b*, and *H2c*), we expect that subsidiaries that are better integrated in the MNC structure, and those that offer earnings management opportunities, are more subject to the influence of their parents. In contrast, we expect more independent subsidiaries (i.e., where the balance of power is less skewed towards the MNC headquarters) to be less subject to the influence of their parents.

Our measures of integration include indicator variables for wholly-owned subsidiaries ($WHOLLY\_OWNED_{SUB}$), subsidiaries that are named after their MNC-parents ($SAME\_NAME_{SUB}$), and presence of interlocked directors ($D\_INTERLOCK_{SUB}$). The rationale behind full control (or same company name) is that a subsidiary in which the MNC-parent holds 100% of the control rights (or is named after its parent) is more likely to be under its influence. Inherently, parents exert higher influence over wholly-owned subsidiaries compared to subsidiaries with less than full ownership. Hence, conditional on having incentives to manage earnings, other things equal, parents may find it easier to manage earnings in wholly owned subsidiaries. Similarly, MNC-parents may exert control over their subsidiaries also through interlocked directors. Recent work of Chiu et al. (2013) shows that earnings management spreads between firms through shared directors, and Cai et al. (2014) provide evidence for interlocked directors to influence changes in corporate disclosure policies. Columns (1) to (3) in Table 4 present the results for this test. As expected, the coefficients for all three integration proxies are positive and highly significant.

- TABLE 4 ABOUT HERE -

Our measures of independence include indicator variables for horizontal subsidiaries ($HORIZONTAL_{SUB}$), subsidiaries in specialized-knowledge industries ($SPEC\_KNOWLEDGE_{SUB}$), and subsidiaries that are above the MNC median subsidiary size (REL_SIZE_{SUB}). Horizontal subsidiaries operate more independently from the headquarters compared to vertical subsidiaries due to superior knowledge and lower interdependence with the MNC (Alfaro and Charlton, 2009). Following the approach of Alfaro and Charlton (2009), we classify subsidiaries as independent if they are in the same industry group (based on two-digit SIC codes) of their respective MNC-parents. Christie et al. (2001) show that subsidiaries that are more decentralized from the headquarters tend to have more specialized knowledge and hence

are more independent. We follow the Christie et al. (2003) industry classification to measure the degree of knowledge specialization. Industries classified as generating relatively more specialized knowledge are coded as having knowledge specialization of one, those classified as generating relatively more non-specialized knowledge are coded as zero, and those producing mixed non-specialized and specialized knowledge are coded as one-half. Also, recent studies (Robinson and Stocken, 2013; Shroff et al., 2014) find that larger subsidiaries are more likely to be autonomous (i.e., have more decision-making rights) and therefore we expect financial reporting policies of larger subsidiaries to experience less influence from the MNC headquarters. We measure the relative size of a subsidiary within each MNC by sorting subsidiaries according to their book values of total assets. Subsidiaries with above the median book value of total assets are classified as having a higher relative size. Columns (4) to (6) in Table 4 present the results for this test. In line with our expectations, the coefficients for all three independence proxies are negative and highly significant.

Consistent with the idea that managing earnings away from the "radar" of efficient enforcers is less costly, we examine different proxies meant to capture the degree of earnings management opportunities offered by different types of subsidiaries. Our measures of subsidiary earnings management opportunity include two indicator variables for whether the subsidiary is located in a foreign country ($FOREIGN_{SUB}$), and whether the subsidiary is a private firm ($PRIVATE_{SUB}$), and a measure of distance between the accounting standards applied by the subsidiary and those applied for the MNC-parent for its consolidated accounts ($GAAP\_DIST_{SUB}$). Our foreign subsidiary proxy is motivated by Kedia and Rajgopal (2011) who show that U.S. firms located closer to the SEC premises, and in areas with greater past SEC enforcement activity, are more likely to be investigated and less likely to manipulate their financial reports. Hence, we argue

that MNC-parents may manage earnings more in foreign subsidiaries.[30] Our private-subsidiary proxy is motivated by prior studies (Ball and Shivakumar, 2005; Burgstahler et al., 2006) who generally find private firms to be more prone to earnings management as they face less stringent regulations. This explains why private subsidiaries, being less subject to regulatory scrutiny, may represent an earnings management opportunity for MNCs. Lastly, as different accounting standards may inherently generate some leeway for managers in handling the consolidation process, we hypothesize earnings management to be greater in MNC-parent/subsidiary pairs with greater GAAP distance. We measure the relative distance between the accounting standards applied by the respective subsidiary and its MNC-parent with the GAAP proximity scores reported by Bae et al. (2008). We standardize the GAAP distance measure between zero and one for exposition.[31] Columns (7) to (9) in Table 4 present the results for this test. The coefficients for all three opportunity proxies are, as expected, positive and highly significant.

5.4 Interplay of Country-Level Institutional Factors and Regulatory Arbitrage

Prior studies have shown an inverse relation between the institutional quality of the environment in which a firm operates and the extent of earnings management (e.g., Ball et al. 2003; Leuz et al., 2003). In the tests presented in Section 5.2, our fixed effects structure shows that factors related to MNC-parent and subsidiary countries *individually* (country fixed effects) and *jointly* (country-pair fixed effects) explain variation in subsidiary earnings management. To shed light on these factors, we next investigate whether the institutional quality of MNC-parent and subsidiary countries explain cross-sectional variation in subsidiary-level earnings

[30] Security regulators and enforcers are typically resource-constrained. Hence, the effectiveness of their enforcement actions is likely to be lower the greater the geographic distance between the subsidiary and its MNC headquarters. In unreported tests, we replace the foreign country indicator with the actual geographic distance between MNC countries and subsidiary countries. Our inferences remain unchanged.

[31] For countries with unavailable scores, we compute the measure following the Bae et al. (2008) approach by examining deviations from US GAAP for a list of 21 accounting rules (GAAP, 2001).

management. We test this conjecture in two steps. First, we explore the role of MNC-parent and subsidiary countries independently, by sequentially including in our baseline model (equation (2)) the rule of law index developed by the World Bank (Kaufmann et al., 2009) for subsidiary and MNC-parent countries. Second, we investigate the role of subsidiary country institutional quality relative to MNC-parent countries by simultaneously including their respective rule of law indices. The rule of law index measures the extent to which agents have confidence in, and abide by, the rules of society which include the effectiveness of the judicial system, the enforceability of contracts, and perceptions about the incidence of crime. The rule of law index is generally regarded as a summary indicator of the extent of compliance with laws and regulations that affect reporting quality by influencing factors such as investor protection, extent of self-dealing, and audit quality.[32]

Column (1) in Table 5 presents the baseline model for this test. Columns (2) and (3) show that subsidiaries located in high rule of law countries exhibit, on average, lower levels of discretionary accruals (a negative and significant coefficient on $RULE\_LAW_{SUB}$), while, subsidiaries with MNC-parents headquartered in high rule of law countries exhibit substantially higher levels of earnings management (as indicated by a positive and significant coefficient on $RULE\_LAW_{MNC}$). We report p-values of F-tests for the inclusion of rule of law indices with respect to the baseline model (column (1)), and the Vuong-tests for the differences in R^2 across the three models ((1) to (3)). Our findings are consistent with the idea that subsidiary-country and MNC-parent-country characteristics explain subsidiary earnings management above and

[32] Although our analyses rely on the rule of law index as a proxy for the institutional quality of a country, in additional sensitivity tests (unreported), we use alternative institutional quality constructs. Specifically, we investigate to what extent the degree of investor protection, control of corruption, self-dealing, anti-director rights, efficiency of the judicial system, public enforcement, influence earnings at the subsidiary level (Djankov et al., 2003; Djankov et al., 2008). Our results hold irrespective of the institutional quality proxy used.

beyond firm-level determinants.[33] Column (4) presents a specification in which the rule of law indices are introduced simultaneously, while columns (5) and (6) present the MNC rule of law regression (same specification as in column (3)) partitioned by *high* and *low* subsidiary rule of law index. Interestingly, and in line with the regulatory arbitrage hypothesis, MNC-parents headquartered in high rule of law countries seem to manage earnings more in subsidiaries located in low rule of law countries. The p-value of the χ^2-test (0.038) confirms that the difference in the $RULE\_LAW_{MNC}$ coefficients is statistically significant at conventional levels.

- TABLE 5 ABOUT HERE -

To provide some descriptive intuition for the regulatory arbitrage phenomenon, Figure 2 presents the extent of earnings management for a set of subsidiaries from low rule of law countries. Interestingly, we find that earnings management is on average more pronounced when subsidiaries' parents are from high rule of law countries.

In our second set of tests, we examine whether the institutional quality of both MNC-parents and subsidiaries *jointly* explain subsidiary-level earnings management. We estimate model (2) without intercept including four separate (non-overlapping) indicators for: (*i*) MNC-parent/subsidiary country-pairs where the MNC-parent country has a *high* rule of law index and the subsidiary country has a *low* rule of law index ($HIGH_{MNC}LOW_{SUB}$), (*ii*) MNC-parent/subsidiary country-pairs where the MNC-parent country has a *low* rule of law index and the subsidiary country has a *high* rule of law index ($LOW_{MNC}HIGH_{SUB}$), (*iii*) MNC-parent/subsidiary country-pairs where both MNC-parent and subsidiary countries have *high* rule of law indices ($HIGH_{MNC}HIGH_{SUB}$), (*iv*) MNC-parent/subsidiary country-pairs where both MNC-parent and subsidiary countries have *low* rule of law indices ($LOW_{MNC}\,LOW_{SUB}$).[34] With

[33] Figure 1 provides the intuition behind the importance of country institutions for earnings management. Countries in green (red) areas are those where the median level of earnings management is below (above) the world median.
[34] With *high* and *low* respectively defined as above and below the sample median rule of law index.

this coding, we can directly compare the extent of subsidiary earnings management across the four groups. In line with our regulatory arbitrage hypothesis (*H3*), we expect subsidiaries in the $HIGH_{MNC}LOW_{SUB}$ group to exhibit the highest levels of earnings management.[35]

- TABLE 6 ABOUT HERE -

Table 6 presents the results for our test of country-level determinants of subsidiary earnings management. In column (1), we regress our discretionary accruals proxy on the four groups mentioned above to examine how different combinations of institutional quality for pairs of MNC-parent/subsidiary countries potentially explain earning management at the subsidiary level. We find that subsidiary-level earnings management is highest for $HIGH_{MNC}LOW_{SUB}$ MNC-parent/subsidiary pairs. The model includes subsidiary-country fixed effects so that our identification comes from differences in the characteristics of subsidiary countries relative to those of their MNC-parent countries. F-tests that directly compare coefficients across the four groups show that differences are all highly significant with the $LOW_{MNC}LOW_{SUB}$ immediately following the $HIGH_{MNC}LOW_{SUB}$ group.

To descriptively assess whether our results hinge on the design choice to partition observations into groups based on the rule of law sample median, Figure 3 presents a three-dimensional surface plot which depicts subsidiary earnings management by quintiles of MNC-parent and subsidiary rule of law indices. Subsidiary earnings management appears to be more pronounced the higher the MNC-parent rule of law quintiles and the lower the subsidiary rule of law quintile, which is consistent with our regression results.

Columns (2) and (3) of Table 6 present the results from estimating the model in column (1) on high and low levels of subsidiary *Integration*. We partition observations based on the median

[35] According to this criterion, all the groups are well populated: 9.27% of the observations fall into the $HIGH_{MNC}LOW_{SUB}$ group, 48.10% of the observations fall into the $LOW_{MNC}HIGH_{SUB}$ group, 31.16% of the observations fall into the $HIGH_{MNC}HIGH_{SUB}$ group, and 48.10% of the observations fall into the $LOW_{MNC}\,LOW_{SUB}$ group.

value of the first principle component of our integration proxies ($WHOLLY\_OWNED_{SUB}$, $SAME\_NAME_{SUB}$, and $D\_INTERLOCK_{SUB}$). In line with our expectations, subsidiary earnings management clusters in the $HIGH_{MNC}LOW_{SUB}$ group even more if the level of subsidiary integration is high. Columns (4) and (5) present the results from estimating the model in column (1) on high and low levels of subsidiary *Independence*. Similarly, we partition observations based on the median value of the first principle component of our independence measures ($HORIZONTAL_{SUB}$, $SPEC\_KNOWLEDGE_{SUB}$, and REL_SIZE_{SUB}). In line with our expectations, subsidiary earnings management is more pronounced in the $HIGH_{MNC}LOW_{SUB}$ group when the level of subsidiary independence is low. Lastly, columns (6) and (7) present the results from estimating the model in column (1) on high and low levels of subsidiary earnings management *Opportunity*. We partition observations based on the median value of the first principle component of our opportunity proxies ($FOREIGN_{SUB}$, $PRIVATE_{SUB}$, and $GAAP\_DIST_{SUB}$). In line with our expectations, subsidiary earnings management clusters in the $HIGH_{MNC}LOW_{SUB}$ group even more when MNC-parents have more opportunities to exploit subsidiaries for financial reporting reasons. χ^2-tests confirm that differences across the high and low partitions are all statistically significant at conventional levels.

5.5 IFRS Adoption and Changes in Enforcement as an Exogenous Shocks to the Quality of MNC-Parent Institutions

In the last set of analyses, we use the 2005 mandatory adoption of IFRS, as well as the introduction of substantive enforcement changes, as country-level regulatory shocks inducing a general improvement in MNC-parents' reporting environments. As these events occur at the MNC-parent-country level, they are inherently exogenous to the individual subsidiary. We

exploit these sources of exogenous changes in the reporting environment of MNC-parents to study the effect of such changes on subsidiary earnings management.

To examine whether, subsequent to mandatory IFRS adoption (and substantive improvements in reporting enforcement), MNCs respond to increases in the quality of their reporting environment by rebalancing subsidiaries' reporting strategies, we use a difference-in-differences estimation approach where we effectively control for a general time trend by using a control sample of non-IFRS MNC-parent adopters. We exclude, from our full sample of MNC-parent/subsidiary country-pairs, subsidiaries domiciled in countries that mandatorily adopted IFRS in 2005 and both MNC-parents and subsidiaries voluntary IFRS adopters. Our treatment group consists of MNC-parent/subsidiary pairs where MNC-parents use local GAAP until 2004 and switch to IFRS afterwards and their subsidiaries use local GAAP before and after 2004 (i.e., MNC-parents are IFRS adopters and their subsidiaries are non-adopters). Our control group, instead, includes MNC-parent/subsidiary pairs where both MNC-parents and their subsidiaries use local GAAP before and after 2004 (i.e., both MNC-parents and their subsidiaries are non-adopters).[36] Our identification relies on the following model:

$$|DACC_{SUB,t}| = \beta_0 + \beta_1 POST2004 + \beta_2 IFRS\_ADOPTER_{MNC} +$$
$$\beta_3 POST2004 * IFRS\_ADOPTER_{MNC} + \beta_4 CHARACTERISTICS_{SUB,t} + \quad (3)$$
$$\beta_5 CHARACTERISTICS_{MNC,t} + \sum_{j=1}^{k} \varphi_j \text{ FIXED\_EFFECTS}_j + \varepsilon_{SUB,t},$$

where $POST2004$ is an indicator variable set to one for fiscal years after 2004, and zero otherwise. $IFRS\_ADOPTER_{MNC}$ is an indicator variable set to one if the MNC-parent is domiciled in a country that requires mandatory adoption of IFRS as of December 31, 2005, and zero otherwise. FIXED_EFFECTS_j is a set of year fixed effects, subsidiary-industry fixed effects,

[36] In this way, we exclude voluntary IFRS adopters from this sample in line with prior studies investigating the impact of mandatory IFRS adoption. Our IFRS-test sample includes observations spanning over the time period 2002-2007 so as to have an equal number of years in the pre (2002-2004) and post (2005-2007) IFRS adoption periods.

and subsidiary-country fixed effects. All other variables are as previously defined. Our coefficient of interest (β_3), the difference-in-differences estimator, captures the extent to which subsidiaries' earnings management changes in response to IFRS adoption by MNC-parents.

To further test whether MNC-parents respond to improvements in their home countries' reporting environment caused by mandatory IFRS adoption by clustering earnings management more in subsidiaries domiciled in countries with more lenient regulations (i.e., the regulatory arbitrage hypothesis), we exploit a *heterogeneous* IFRS treatment indicator. While the previous specification (model (3)) assumes the IFRS effect to be homogenous across all subsidiary countries, we now allow the effect of IFRS adoption in MNC-parent countries to vary with the quality of subsidiary-country institutions. Hence, we estimate the following model:

$$
\begin{aligned}
|DACC_{SUB,t}| = {} & \beta_0 + \beta_1 POST2004 + \beta_2 IFRS\_ADOPTER_{MNC} + \beta_3 LOW\_RULE\_LAW_{SUB} + \\
& \beta_4 POST2004 * IFRS\_ADOPTER_{MNC} + \beta_5 POST2004 * LOW\_RULE\_LAW_{SUB} + \\
& \beta_6 IFRS\_ADOPTER_{MNC} * LOW\_RULE\_LAW_{SUB} + \\
& \beta_7 POST2004 * IFRS\_ADOPTER_{MNC} * LOW\_RULE\_LAW_{SUB} + \beta_8 CHARACTERISTICS_{SUB,t} + \\
& \beta_9 CHARACTERISTICS_{MNC,t} + \sum_{j=1}^{k} \varphi_j \text{ FIXED\_EFFECTS}_j + \varepsilon_{SUB,t},
\end{aligned}
\tag{4}
$$

where $LOW\_RULE\_LAW_{SUB}$ is an indicator variable set to one if the respective subsidiary-country rule of law index is below the sample median, and zero otherwise. All other variables are as previously defined. Our identification comes from the coefficient (β_7) on the triple-interaction $POST2004 * IFRS\_ADOPTER_{MNC} * LOW\_RULE\_LAW_{SUB}$. If there is a causal link between regulatory arbitrage opportunities and subsidiary earnings management, we expect that, after IFRS adoption, MNC-parents from adopting countries cluster earnings management more in subsidiaries domiciled in low rule of law countries (i.e., only subsidiaries from high rule of law countries exhibit reduced earnings management after the IFRS treatment).

- TABLE 7 ABOUT HERE -

Table 7 provides the results for our difference-in-differences analysis. Column (1) presents the estimation of model (3). Our coefficient of interest (β_3), on the interaction term $POST_{2004} * IFRS\_ADOPTER_{MNC}$, is negative and significant in line with the idea that, after the mandatory introduction of IFRS in MNC-parent countries, there is a general reduction in the level of subsidiary earnings management. However, results from the estimation of model (4), presented in column (2), show that the adoption of IFRS by MNC-parent countries has a differential effect on subsidiary earnings management depending on the quality of the subsidiary country institutional environment. The coefficient on the triple-interaction $POST2004 * IFRS\_ADOPTER_{MNC} * LOW\_RULE\_LAW_{SUB}$ (β_7) is positive and significant, indicating that after the adoption of IFRS by MNC-parent countries, subsidiaries from low rule of law countries exhibit a relative increase (i.e., compared to subsidiaries from high rule of law countries) in absolute discretionary accruals. This result is consistent with MNC-parents from IFRS adopting countries responding to shocks to their home country reporting environment by clustering earnings management more in subsidiaries domiciled in low rule of law countries. As Christensen et al. (2013) show, in many adopting countries, the 2005 IFRS mandate is bundled with substantive changes to reporting enforcement and hence the two regulatory changes are clustered in time. Therefore, we expect the IFRS treatment to be stronger in MNC-parent countries where IFRS adoption is bundled with changes in enforcement. Our enforcement indicator is based on the Brown et al. (2014) measure and developed in the spirit of Christensen et al. (2013). In columns (3) and (4) we present regression results where the full IFRS-test sample is split into: (*i*) MNC-parent countries that adopt IFRS but are not experiencing changes in enforcement (column (3)); and (*ii*) MNC-parent countries that adopt IFRS and are experiencing changes in enforcement (column (4)). In line with our expectations, we find that when IFRS adoption is bundled with substantive changes in enforcement, MNCs cluster, even

more, earnings management in subsidiaries from low-quality countries (a positive a significant coefficient for $POST2004 * IFRS\_ADOPTER_{MNC} * LOW\_RULE\_LAW_{SUB}$ in column (4) but not in column (3)). A χ^2-test confirms that the difference in the $POST2004 * IFRS\_ADOPTER_{MNC} * LOW\_RULE\_LAW_{SUB}$ coefficient across the two groups is statistically significant at conventional levels.

This evidence is consistent with IFRS adoption playing a dual role. On the one hand, it constrains the general level of subsidiary earnings management but, on the other hand, produces non-trivial reallocation effects. In terms of economic magnitude, the adoption of IFRS in MNC-parent countries determines a 0.008 decrease in subsidiary absolute discretionary accruals which represents 6.1% of their average value (0.132). When examining the economic magnitude of the IFRS mandate bundled with changes in enforcement for subsidiaries located in low rule of law countries, we observe a relative increase (i.e., a lower decrease compared to the control group) in subsidiary absolute discretionary accruals of 0.019 which represents 14.6% of their average value (0.130). Hence, we interpret these as economically sizable effects.

Taken together, the findings from this last set of tests highlight how MNC-parents take advantage of cross-country differences in institutional environments to exploit regulatory arbitrage opportunities.

6. Conclusion

This paper examines the determinants of earnings management location *within* the firm. We take advantage of a large sample of MNCs and find that their earnings management is the result of an orchestrated reporting strategy across their subsidiaries. The analysis suggests that MNCs exert significant influence on the financial reporting decisions of their subsidiaries. In particular, we show that country-level factors, as well as firm-specific characteristics of both

MNC-parents and their subsidiaries, jointly explain the location of earnings management within the firm.

Consistent with our expectations, we document that the extent of MNC influence on the magnitude of subsidiary earnings management is increasing in the degree of subsidiary integration as well as in the extent of opportunities for earnings management provided by subsidiaries, and decreasing in the degree of subsidiary independence.

We find evidence that MNCs exploit regulatory arbitrage opportunities in that MNC-parents domiciled in high-quality institutional environments tend to manage their consolidated earnings more through subsidiaries located in low-quality institutional environments. To address concerns about potential endogeneity, we exploit exogenous shocks to the institutional quality of MNC-parents. In line with our predictions, we document that when regulatory shocks exogenously improve their reporting environment, MNCs rebalance their reporting strategies by clustering earnings management more in subsidiaries from countries with more lenient regulations. Our results have direct implications for regulatory design, highlight the limitations of domestic reforms, and support the call for better regulatory coordination across jurisdictions. To the extent that much of the reporting enforcement remains at the national level, policy interventions by domestic regulators may have limited ability to curb MNCs' incentives to manage earnings through regulatory arbitrage.

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Appendix: Variable Definitions

Variable (*)	*Description*
Dependent variable:	
$\lvert DACC_{SUB} \rvert$	Absolute value of discretionary accruals calculated following a performance-adjusted modified Jones model (Kothari et al., 2005) estimated across countries by two-digit SIC industry groups and year.
Country-level variables:	
RULE_LAW	Rule of law index for the respective country measured as of 2002 or the first year of coverage for countries with no index available in 2002 (Source: Worldwide Governance Indicators created by the World Bank (Kaufmann et al., 2009)).
$LOW\_RULE\_LAW_{SUB}$	Indicator variable set to one if the respective subsidiary country rule of law index is below the sample median, and zero otherwise (Source: Worldwide Governance Indicators created by the World Bank (Kaufmann et al., 2009)).
$HIGH_{MNC}LOW_{SUB}$ / $LOW_{MNC}HIGH_{SUB}$ / $HIGH_{MNC}HIGH_{SUB}$ / $LOW_{MNC}LOW_{SUB}$	Set of indicator variables set to one if the respective MNC-parent-country rule of law index is above (below) the sample median while the respective subsidiary-country rule of law index is above (below) the sample median, and zero otherwise (Source: Kaufmann et al., 2009).
$IFRS\_ADOPTER_{MNC}$	Indicator variable set to one if the MNC-parent is domiciled in a country that requires mandatory adoption of IFRS as of December 31, 2005, and zero otherwise.
POST2004	Indicator variable set to one for fiscal years after 2004, and zero otherwise.
Δ Enforcement	Indicator variable set to one (*Yes*) if the respective MNC-parent country has undertaken reforms resulting in substantive changes to the enforcement of financial reporting in 2005, and zero (*No*) otherwise. Enforcement changes are proxied using the measure developed by Brown et al. (2014) and in the spirit of the binary enforcement change indicator of Christensen et al. (2013).
INFLATION	Inflation index based on average consumer prices (Source: International Monetary Fund's World Economic Outlook Database, April 2013 (http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx).
GDP_GWT	Growth in real (purchasing power parity based) per-capita GDP (Source: International Monetary Fund's World Economic Outlook Database, April 2013 (http://www.imf.org/external/pubs/ft/weo/2013/01/weodata/index.aspx).
Firm-level characteristics:	
LOG(TOTASS)	Natural logarithm of book value of total assets (Source: Orbis).
$\lvert ROA \rvert$	Absolute value of return on assets calculated as net income before extraordinary items scaled by book value of total assets (Source: Orbis).

(*continued*)

Appendix (continued)

Variable (*)	*Description*
|CFO|	Absolute value of cash flow from operations scaled by book value of total assets. Cash flow from operations is calculated, following the balance sheet approach, as the difference between net income before extraordinary items and total accruals (Source: Orbis).
SALES_GWT	Sales growth calculated as the annual percentage change in sales (Source: Orbis).
σ(CFO)	Cash flow volatility measured as the standard deviation of cash flow from operations scaled by total assets. Standard deviations are calculated based on rolling windows of previous five annual observations. Cash flow from operations is calculated, following the balance sheet approach, as the difference between net income before extraordinary items and total accruals (Source: Orbis).
σ(SALES)	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 five annual observations. (Source: Orbis).
OP_CYCLE	Length of the firm's operating cycle, defined as the number of days receivables plus days inventory. Days receivables is defined as 360 divided by the ratio of average receivables to sales. Similarly, days inventory is defined as 360 divided by the ratio of average inventory to cost of goods sold. Operating cycle is scaled by 10,000 for exposition (Source: Orbis).
LEVERAGE	Firm leverage calculated as the ratio of the sum of long-term debt and short-term debt to book value of total assets (Source: Orbis).
D_LOSS	Indicator variable set to one if the respective firm reports a loss in the previous fiscal year, and zero otherwise (Source: Orbis).
TAX_INCENTIVE	Tax incentive variable derived by Huizinga and Laeven (2008) and defined as follows: $TAX_{INCENTIVE} = \frac{1}{(1-t_i)} \frac{\Sigma_{i \neq j}^{n} \frac{SALES_j (t_i - t_j)}{(1-t_k)}}{\Sigma_{j=1}^{n} \frac{SALES_j}{(1-t_j)}}$, where t_i is the subsidiary country statutory tax rate (Source: KPMG International, 2011), and $SALES_j$ is the sales figure for the subsidiary *j* (Source: Orbis). By taking into account the sales-weighted statutory tax rate differential for all subsidiaries within a MNC, this measure captures both the MNC incentive and the opportunity to shift income in or out of a specific subsidiary.
LOG(N_SUB)	Natural logarithm of the number of subsidiaries within each MNC group structure (Source: Orbis).
Variables used in cross-sectional tests:	
$WHOLLY\_OWNED_{SUB}$	Indicator variable set to one if the MNC-parent has a (direct or indirect) 100% stake in the respective subsidiary, and zero otherwise.
$SAME\_NAME_{SUB}$	Indicator variable set to one if the respective subsidiary is named after its MNC-parent, and zero otherwise (Source: Orbis).

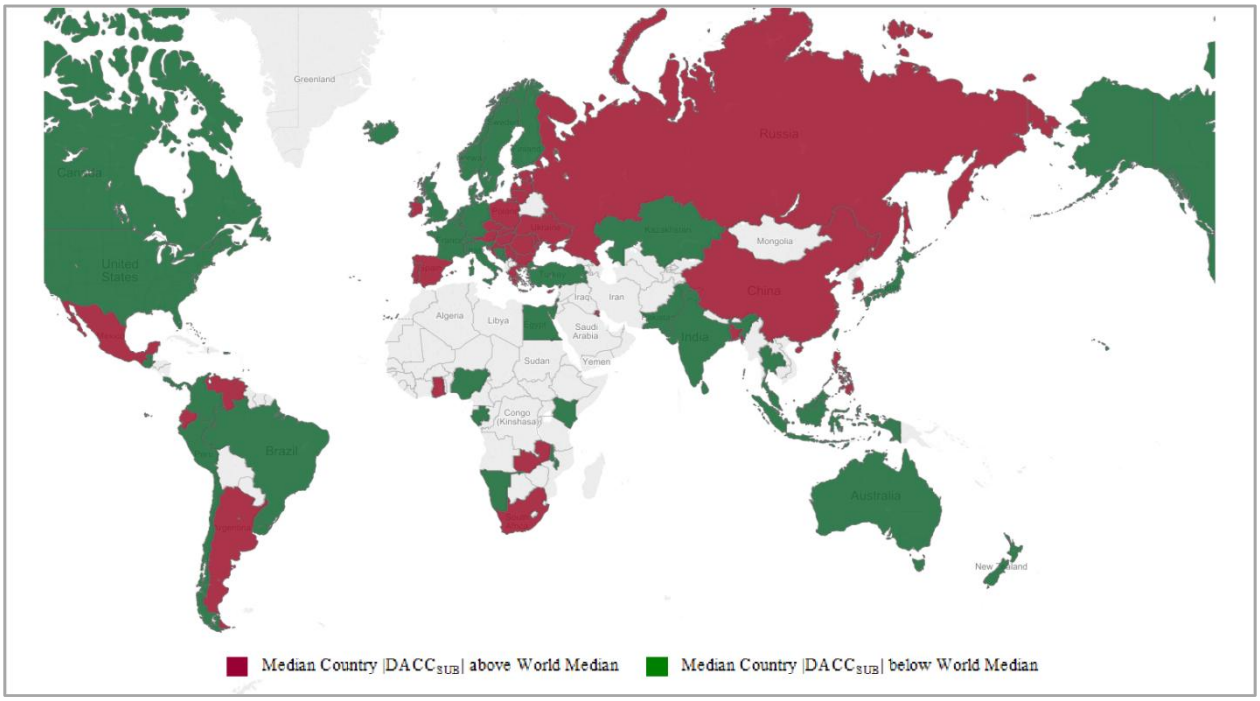
(*continued*)

Appendix (continued)

Variable (*)	*Description*
$D\_INTERLOCK_{SUB}$	Indicator variable set to one if at least one subsidiary board member sits on the board of the respective parent (i.e., the MNC-parent and subsidiary boards are interlocked), and zero otherwise (Source: Orbis).
Integration	Indicator variable set to one (*High*) if the first principal component of the *integration* proxies (*WHOLLY_OWNED*, *SAME_NAME*, *D_INTERLOCK*) is above the sample median, and zero (*Low*) otherwise.
$HORIZONTAL_{SUB}$	Indicator variable set to one if the MNC-parent and the respective subsidiary belong to the same industry group (based on two-digit SIC codes), and zero otherwise (following the approach of Alfaro and Charlton, 2009) (Source: Orbis).
$SPEC\_KNOWLEDGE_{SUB}$	Indicator variable capturing the degree of knowledge specialization. Following the approach by Christie et al. (2003), industries classified as generating relatively more specialized knowledge are coded as having knowledge specialization one, those classified as generating relatively more non-specialized knowledge are coded as zero, and those classified as producing mixed non-specialized and specialized knowledge are coded as one-half.
REL_SIZE_{SUB}	Indicator variable set to one if the respective subsidiary is above the median size (measured using book value of total assets) relative to the other subsidiaries owned by the same MNC-parent firm, and zero otherwise (following the approach of Shroff et al., 2014) (Source: Orbis).
Independence	Indicator variable set to one (*High*) if the first principal component of our proxies for independence (*HORIZONTAL*, *SPEC_KNOWLEDGE*, *REL_SIZE*) is above the sample median and zero (*Low*) otherwise.
$FOREIGN_{SUB}$	Indicator variable set to one if the respective subsidiary is domiciled in a different country from the MNC headquarters and zero otherwise (Source: Orbis).
$PRIVATE_{SUB}$	Indicator variable set to one if the respective subsidiary is not listed in public equity markets, and zero otherwise (Source: Orbis).
$GAAP\_DIST_{SUB}$	Relative distance between the accounting standards applied by the respective subsidiary and its MNC-parent (consolidated financial statements) calculated following the GAAP proximity scores reported by Bae et al. (2008). For countries with unavailable scores, the measures are computed following the Bae et al. (2008) approach by examining deviations from U.S. GAAP for a list of 21 accounting rules (GAAP, 2001). GAAP distance measures are standardized between zero and one for exposition.
Opportunity	Indicator variable set to one (*High*) if the first principal component of the *opportunity* proxies (*FOREIGN*, *PRIVATE*, *GAAP_DIST*) is above the sample median, and zero (*Low*) otherwise.

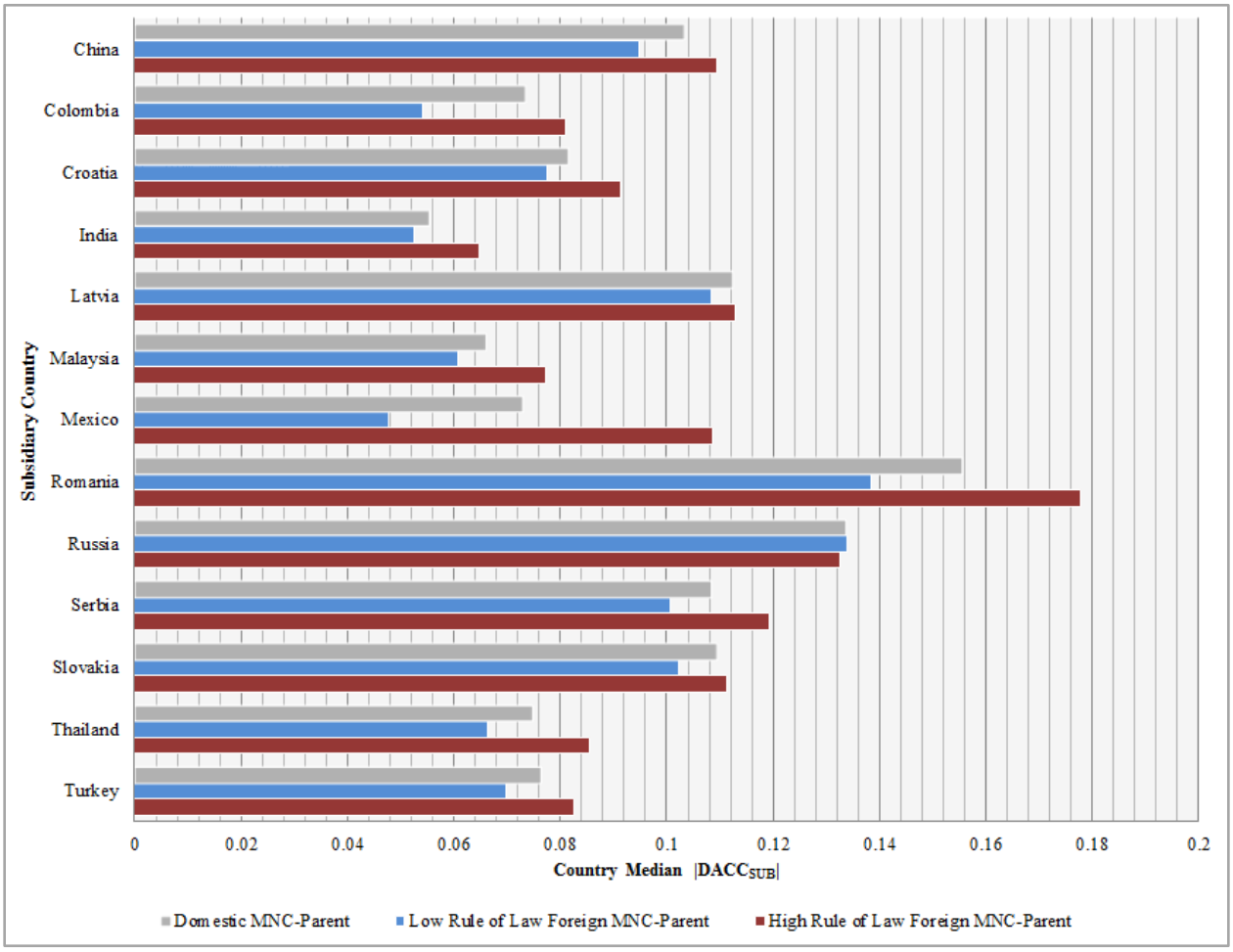
(*) The subscript *MNC* (*SUB*) indicates that the respective variable is measured at the MNC-parent (subsidiary) level. Unsubscripted variables in the *Firm-level characteristics* group refer to both MNC-parents and subsidiaries measures. Within each group, variables are presented in the order in which they appear in the empirical analyses.

Figure 1: Subsidiary Earnings Management around the World



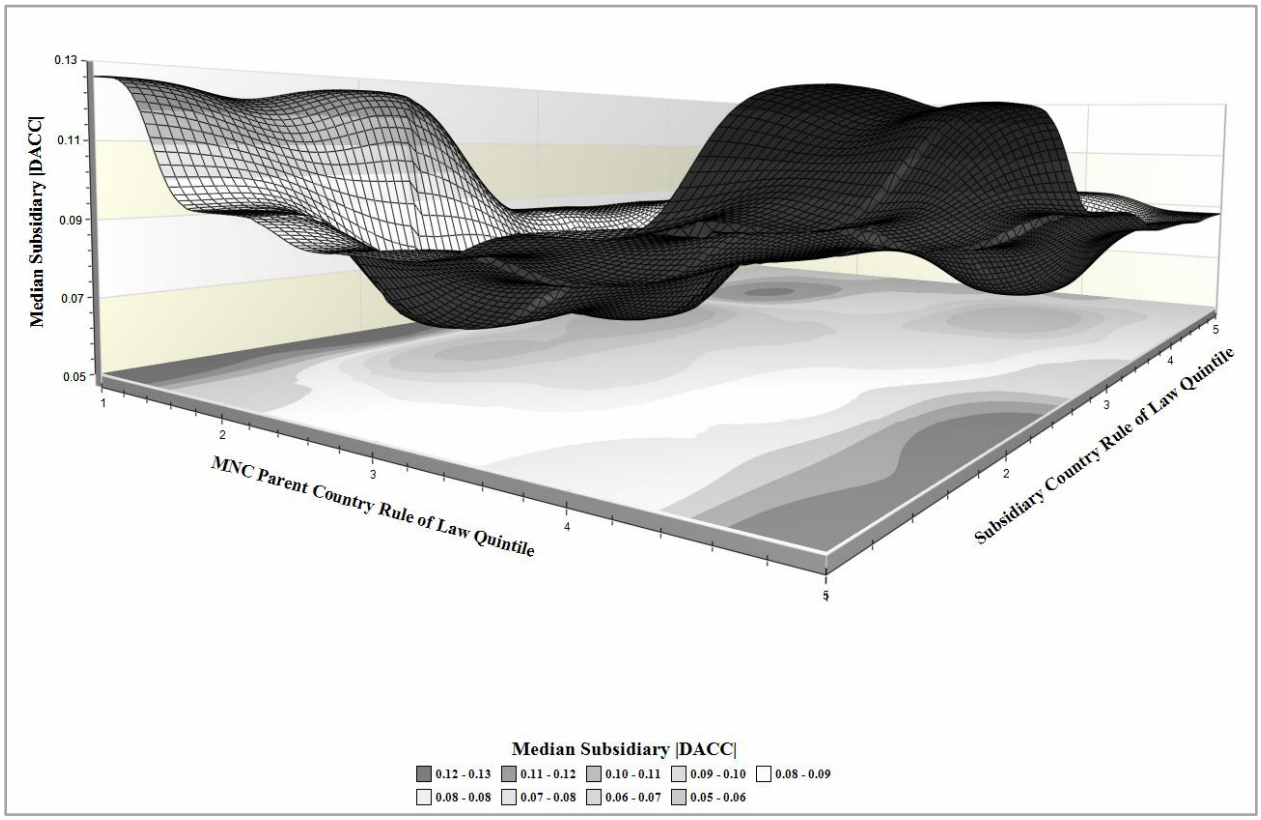
The figure illustrates the extent of subsidiary earnings management around the world. For our sample of MNC-parent-subdiary-year observations we compute subsidiary country medians of our earnings management proxy (i.e., absolute discretionary accruals ($|DACC_{SUB}|$)) and rank subsidiary countries accordingly. Green (red) areas indicate countries where the country median level of earnings management is below (above) the world median.

Figure 2: Subsidiary Country-Median Earnings Management by MNC Rule of Law



The figure presents the subsidiary country-median level of earnings management (absolute value of discretionary accruals ($|DACC_{SUB}|$)) for a set of *low* rule of law subsidiary countries for which at least fifty subsidiary-year observations from each of the following three different types of MNC-parents are available: i) domestic MNC-parents, ii) *low* rule of law foreign MNC-parents, and iii) *high* rule of law foreign MNC-parents.

Figure 3: Median Subsidiary Earnings Management by Quintiles of MNC-Parent and Subsidiary Rule of Law



The figure presents a tridimensional surface plot which captures the extent of subsidiary earnings management (absolute value of discretionary accruals ($|DACC_{SUB}|$)) by quintiles of MNC-parent and subsidiary rule of law indices. We partition our sample of MNC-parent-subsidiary-years by double-sorting observations into bins based on quintiles of rule of law indices of MNC-parents and their respective subsidiary. We then compute, for each bin, the median level of earnings management.

Table 1: Sample Selection and Composition

Panel A: Sample Selection Criteria

Unique parents (ultimate owners) with available ownership and consolidated financial data, with total assets and sales greater than U.S. $10,000, excluding financial institutions (SIC codes 6000-6999), utilities (SIC codes 4800-4999), and quasi-regulated industries (SIC codes 4000-4499)	9,969
Unique subsidiaries (levels 1 to 5) with available ownership and financial data, with total assets and sales greater than U.S. $10,000, excluding financial institutions (SIC codes 6000-6999), utilities (SIC codes 4800-4999), and quasi-regulated industries (SIC codes 4000-4499)	40,172
Initial parent-subsidiary-year observations	503,712
- Exclude non-controlled subsidiaries (i.e., control rights below 50%)	(216,756)
- Exclude domestic business groups (i.e., with no foreign subsidiaries)	(96,876)
- Exclude MNC business groups with less than two subsidiaries	(14,441)
- Exclude observations with missing data for analysis	(91,524)
Final sample of MNC-parent-subsidiary-year observations	84,115
Unique subsidiaries	15,020
Unique MNC-parents	2,156

Panel B: Firm-Year Observations by Year

Year	MNC-parents		Subsidiaries	
	Obs.	%	Obs.	%
2002	841	6.01%	4,140	4.92%
2003	1,296	9.27%	7,643	9.09%
2004	1,378	9.85%	7,871	9.36%
2005	1,514	10.83%	9,004	10.70%
2006	1,653	11.82%	9,881	11.75%
2007	1,737	12.42%	10,545	12.54%
2008	1,834	13.11%	11,389	13.54%
2009	1,877	13.42%	11,657	13.86%
2010	1,855	13.26%	11,985	14.25%
Total	13,985	100.00%	84,115	100.00%

Panel C: Firm-Year Observations by Industry

One-Digit SIC	MNC-parents		Subsidiaries	
	Obs.	%	Obs.	%
0	84	0.60%	460	0.55%
1	708	5.06%	9,397	11.17%
2	3,317	23.72%	12,107	14.39%
3	6,448	46.11%	21,102	25.09%
4	195	1.39%	1,262	1.50%
5	1,592	11.38%	29,041	34.53%
7	1,641	11.73%	10,746	12.78%
Total	13,985	100.00%	84,115	100.00%

Table 1 (continued)

Panel D: Sample Composition by Country

Country	Rule of Law (Score)	MNC-parents		Subsidiaries	
		Obs.	%	Obs.	%
Argentina	-0.82	9	0.06%	386	0.46%
Australia	1.75	64	0.46%	73	0.09%
Austria	1.86	58	0.41%	315	0.37%
Bahamas	1.36	0	0.00%	4	0.00%
Bangladesh	-0.90	0	0.00%	1	0.00%
Barbados	1.45	3	0.02%	4	0.00%
Belgium	1.32	363	2.60%	3,405	4.05%
Bermuda	1.21	48	0.34%	0	0.00%
Bosnia and Herzegovina	-0.67	0	0.00%	46	0.05%
Brazil	-0.30	31	0.22%	27	0.03%
Bulgaria	-0.10	8	0.06%	330	0.39%
Canada	1.66	145	1.04%	84	0.10%
Cayman Islands	1.47	20	0.14%	0	0.00%
Chile	1.30	14	0.10%	21	0.02%
China	-0.41	33	0.24%	679	0.81%
Colombia	-0.81	1	0.01%	149	0.18%
Costa Rica	0.62	0	0.00%	11	0.01%
Croatia	-0.17	21	0.15%	391	0.46%
Cyprus	0.96	5	0.04%	4	0.00%
Czech Republic	0.83	0	0.00%	1,612	1.92%
Denmark	1.87	165	1.18%	39	0.05%
Ecuador	-0.76	0	0.00%	20	0.02%
Egypt	0.05	5	0.04%	30	0.04%
Estonia	0.76	8	0.06%	555	0.66%
Finland	1.90	719	5.14%	1,635	1.94%
France	1.20	831	5.94%	15,243	18.12%
Gabon	-0.21	0	0.00%	9	0.01%
Germany	1.61	831	5.94%	3,231	3.84%
Ghana	-0.03	0	0.00%	6	0.01%
Greece	0.71	159	1.14%	721	0.86%
Guatemala	-1.01	0	0.00%	2	0.00%
Hong Kong	1.24	20	0.14%	0	0.00%
Hungary	0.93	12	0.09%	125	0.15%
Iceland	1.87	2	0.01%	12	0.01%
India	-0.04	120	0.86%	157	0.19%
Indonesia	-0.97	0	0.00%	50	0.06%
Ireland	1.59	67	0.48%	303	0.36%
Israel	1.06	76	0.54%	63	0.07%
Italy	0.70	591	4.23%	5,765	6.85%
Ivory Coast	-1.38	0	0.00%	1	0.00%
Japan	1.14	2,873	20.54%	17,099	20.33%
Kazakhstan	-1.12	0	0.00%	3	0.00%
Kenya	-0.91	0	0.00%	29	0.03%
Kuwait	0.60	0	0.00%	2	0.00%
Latvia	0.28	12	0.09%	328	0.39%

(*continued*)

Table 1 (continued)

Panel D (continued)

Country	Rule of Law (Score)	MNC-parents		Subsidiaries	
		Obs.	%	Obs.	%
Lithuania	0.35	0	0.00%	192	0.23%
Luxembourg	1.86	37	0.26%	144	0.17%
Macedonia	-0.63	4	0.03%	0	0.00%
Malawi	-0.47	0	0.00%	3	0.00%
Malaysia	0.50	18	0.13%	366	0.44%
Malta	1.44	1	0.01%	30	0.04%
Marshall Islands	0.13	4	0.03%	0	0.00%
Mexico	-0.35	38	0.27%	184	0.22%
Moldova	-0.64	0	0.00%	8	0.01%
Montenegro	-0.36	0	0.00%	12	0.01%
Namibia	0.26	0	0.00%	1	0.00%
Netherlands	1.69	693	4.96%	1,085	1.29%
New Zealand	1.79	4	0.03%	104	0.12%
Nigeria	-1.48	0	0.00%	20	0.02%
Norway	1.84	219	1.57%	1,838	2.19%
Pakistan	-0.75	0	0.00%	26	0.03%
Panama	-0.10	0	0.00%	2	0.00%
Peru	-0.54	0	0.00%	27	0.03%
Philippines	-0.43	0	0.00%	224	0.27%
Poland	0.63	116	0.83%	2,205	2.62%
Portugal	1.29	46	0.33%	1,416	1.68%
Romania	-0.27	9	0.06%	603	0.72%
Russia	-0.87	52	0.37%	1,577	1.87%
Saint Vincent and The Grenadines	0.90	0	0.00%	4	0.00%
Serbia	-0.97	7	0.05%	323	0.38%
Singapore	1.44	64	0.46%	63	0.07%
Slovakia	0.24	17	0.12%	508	0.60%
Slovenia	0.96	53	0.38%	210	0.25%
South Africa	0.05	22	0.16%	6	0.01%
South Korea	0.91	222	1.59%	1,691	2.01%
Spain	1.21	669	4.78%	7,174	8.53%
Sri Lanka	0.32	6	0.04%	14	0.02%
Sweden	1.84	4	0.03%	2,894	3.44%
Switzerland	1.92	367	2.62%	35	0.04%
Taiwan	0.85	149	1.07%	286	0.34%
Thailand	0.37	25	0.18%	1,556	1.85%
Turkey	-0.06	10	0.07%	84	0.10%
Ukraine	-0.87	0	0.00%	336	0.40%
United Kingdom	1.64	1,146	8.19%	5,111	6.08%
United States	1.49	2,652	18.96%	763	0.91%
Uruguay	0.59	0	0.00%	1	0.00%
Venezuela	-1.17	0	0.00%	2	0.00%
Virgin Islands	1.21	17	0.12%	0	0.00%
Zambia	-0.39	0	0.00%	17	0.02%
Total		13,985	100.00%	84,115	100.00%

Table 1 (continued)

Panel E: Distribution of MNC-Parents and Subsidiaries by Geographic Region

MNC-parent \ Subsidiary		Africa	East Asia	Eastern Europe	Middle East	North America	Oceania	South America	South East Asia	Western Europe	Total	
											Obs.	%
Africa		35.90%	0.00%	20.51%	5.13%	0.00%	10.26%	0.00%	0.00%	28.21%	39	*0.05%*
East Asia		0.02%	71.73%	2.86%	0.05%	0.53%	0.11%	0.12%	6.14%	18.46%	24,317	*28.91%*
Eastern Europe		0.00%	0.00%	93.57%	0.46%	0.10%	0.00%	0.00%	0.00%	5.87%	1,975	*2.35%*
Middle East		0.00%	3.24%	18.62%	11.74%	0.00%	0.00%	0.00%	0.00%	66.40%	247	*0.29%*
North America		0.00%	2.62%	8.00%	0.40%	7.14%	0.53%	1.93%	9.50%	69.88%	10,595	*12.60%*
Oceania		0.00%	0.97%	1.94%	0.00%	2.91%	22.33%	1.94%	5.83%	64.08%	103	*0.12%*
South America		0.00%	0.00%	0.00%	0.00%	2.02%	0.00%	71.72%	0.00%	26.26%	99	*0.12%*
South East Asia		0.00%	4.37%	5.46%	0.00%	1.09%	0.51%	0.58%	58.19%	29.79%	1,373	*1.63%*
Western Europe		0.23%	0.60%	12.87%	0.19%	0.29%	0.13%	0.75%	1.81%	83.14%	45,367	*53.93%*
Total	Obs.	122	18,064	9,361	178	1,039	177	652	4,122	50,400	84,115	
	%	*0.15%*	*21.48%*	*11.13%*	*0.21%*	*1.24%*	*0.21%*	*0.78%*	*4.90%*	*59.92%*		*100.00%*

The sample in the empirical tests consists of MNC-parent-subsidiary-year observations from 89 countries around the world (60 unique MNC-parent countries and 83 unique subsidiary countries) over the period 2002-2010. Panel A presents the details of the sample selection procedure. Panel B presents the sample composition of MNC-parent and subsidiary firm-years by year. Panel C presents the sample composition of MNC-parent and subsidiary firm-years by industry (one-digit SIC). Panel D presents the sample composition by MNC-parent and subsidiary countries. Panel E presents the distribution of MNC-parent-year observations (vertical axis) and subsidiary-year observations (horizontal axis) by geographic region.

Table 2: Descriptive Statistics and Correlations

Panel A: Descriptive Statistics for Variables Used in the Earnings Management Regressions

	Obs.	Mean	Std. Dev.	P1	P25	Median	P75	P99
Country-level variables:								
$RULE\_LAW_{SUB}$	83	0.427	0.991	-1.480	-0.410	0.500	1.320	1.920
$RULE\_LAW_{MNC}$	60	0.829	0.852	-0.970	0.090	1.010	1.540	1.920
Subsidiary-level variables:								
$\|DACC_{SUB}\|$	84,115	0.130	0.166	0.001	0.031	0.074	0.159	0.990
$TOTASS_{SUB}$ (U.S. $000)	84,115	141,746	421,263	328	6,814	23,582	83,887	3,234,685
ROA_{SUB}	84,115	0.065	0.138	-0.476	0.011	0.054	0.121	0.519
CFO_{SUB}	84,115	0.060	0.201	-0.653	-0.025	0.050	0.144	0.764
$SALES\_GWT_{SUB}$	84,115	0.148	0.472	-0.672	-0.075	0.082	0.250	3.126
$\sigma(CFO_{SUB})$	84,115	0.155	0.167	0.004	0.057	0.105	0.190	1.066
$\sigma(SALES_{SUB})$	84,115	0.351	0.421	0.010	0.111	0.218	0.419	2.688
OP_CYCLE_{SUB}	84,115	0.013	0.011	0.000	0.007	0.010	0.015	0.082
$LEVERAGE_{SUB}$	84,115	0.052	0.132	0.000	0.000	0.000	0.018	0.746
D_LOSS_{SUB}	84,115	0.225	0.418	0.000	0.000	0.000	0.000	1.000
$TAX\_INCENTIVE_{SUB}$	84,115	0.042	0.049	0.000	0.006	0.023	0.063	0.215
$WHOLLY\_OWNED_{SUB}$	84,115	0.408	0.491	0.000	0.000	0.000	1.000	1.000
$SAME\_NAME_{SUB}$	84,115	0.415	0.493	0.000	0.000	0.000	1.000	1.000
$D\_INTERLOCK_{SUB}$	84,115	0.186	0.389	0.000	0.000	0.000	0.000	1.000
$HORIZONTAL_{SUB}$	84,115	0.213	0.409	0.000	0.000	0.000	0.000	1.000
$SPEC\_KNOWLEDGE_{SUB}$	84,115	0.545	0.448	0.000	0.000	0.500	1.000	1.000
REL_SIZE_{SUB}	84,115	0.457	0.498	0.000	0.000	0.000	1.000	1.000
$FOREIGN_{SUB}$	84,115	0.512	0.500	0.000	0.000	1.000	1.000	1.000
$PRIVATE_{SUB}$	84,115	0.972	0.164	0.000	1.000	1.000	1.000	1.000
$GAAP\_DIST_{SUB}$	84,115	0.367	0.324	0.000	0.000	0.389	0.667	1.000
MNC-parent-level variables:								
$TOTASS_{MNC}$ (U.S. $000)	13,985	23,300,000	38,900,000	34,486	1,069,421	5,668,931	30,200,000	225,000,000
ROA_{MNC}	13,985	0.068	0.063	-0.123	0.032	0.060	0.097	0.281
CFO_{MNC}	13,985	0.075	0.074	-0.172	0.037	0.073	0.113	0.308
$SALES\_GWT_{MNC}$	13,985	0.109	0.220	-0.392	-0.027	0.094	0.213	0.894
$\sigma(CFO_{MNC})$	13,985	0.064	0.057	0.003	0.028	0.048	0.080	0.291
$\sigma(SALES_{MNC})$	13,985	0.130	0.127	0.007	0.052	0.090	0.159	0.754
OP_CYCLE_{MNC}	13,985	0.014	0.007	0.003	0.010	0.014	0.017	0.041
$LEVERAGE_{MNC}$	13,985	0.135	0.121	0.000	0.024	0.115	0.209	0.477
D_LOSS_{MNC}	13,985	0.173	0.378	0.000	0.000	0.000	0.000	1.000
N_SUBS_{MNC}	13,985	22	26	2	5	11	30	83

Panel B: Within-Group and Across-Groups Subsidiary Earnings Management Correlation

Variable: Signed $DACC_{SUB}$	Within-Group Correlation	Across-Groups Correlation	Difference
Mean	0.034	0.015	0.018***
Median	0.031	0.012	0.019***

Table 2 (continued)

Panel C: Pearson and Spearman Correlations Coefficients between Key Variables

	A	B	C	D	E	F	G	H	I	J	K	L
A: $\|DACC_{SUB}\|$		**-0.057**	**0.106**	**0.084**	**0.020**	**0.047**	**-0.002**	**-0.065**	**-0.106**	**0.123**	**0.058**	**0.135**
B: $RULE\_LAW_{SUB}$	**-0.073**		**-0.045**	**-0.031**	**-0.009**	**-0.037**	**-0.060**	**-0.022**	**0.054**	**-0.250**	**0.049**	**-0.320**
C: $RULE\_LAW_{MNC}$	**0.119**	**-0.045**		**0.239**	**0.145**	**0.107**	**0.111**	**-0.058**	**-0.026**	**0.493**	**0.077**	**0.224**
D: $WHOLLY\_OWNED_{SUB}$	**0.096**	**-0.031**	**0.239**		**0.105**	**0.188**	**0.087**	**-0.034**	**0.019**	**0.185**	**0.125**	**0.189**
E: $SAME\_NAME_{SUB}$	**0.027**	**-0.009**	**0.145**	**0.105**		**0.039**	**0.011**	**-0.128**	**0.066**	**0.242**	**0.021**	**0.018**
F: $D\_INTERLOCK_{SUB}$	**0.060**	**-0.037**	**0.107**	**0.188**	**0.039**		**0.101**	0.002	**0.072**	**-0.018**	**-0.044**	**-0.011**
G: $HORIZONTAL_{SUB}$	**-0.002**	**-0.060**	**0.111**	**0.087**	**0.011**	**0.101**		**0.210**	**0.081**	**0.087**	**-0.040**	**0.031**
H: $SPEC\_KNOWLEDGE_{SUB}$	**-0.063**	**-0.024**	**-0.057**	**-0.033**	**-0.127**	0.003	**0.206**		**0.117**	**-0.144**	**-0.087**	**-0.061**
I: REL_SIZE_{SUB}	**-0.122**	**0.054**	**-0.026**	**0.019**	**0.066**	**0.072**	**0.081**	**0.118**		**-0.092**	**-0.099**	**-0.079**
J: $FOREIGN_{SUB}$	**0.149**	**-0.250**	**0.493**	**0.185**	**0.242**	**-0.018**	**0.087**	**-0.140**	**-0.092**		**0.061**	**0.480**
K: $PRIVATE_{SUB}$	**0.071**	**0.049**	**0.077**	**0.125**	**0.021**	**-0.044**	**-0.040**	**-0.087**	**-0.099**	**0.061**		**0.093**
L: $GAAP\_DIST_{SUB}$	**0.146**	**-0.289**	**0.231**	**0.200**	**0.012**	-0.006	**0.029**	**-0.055**	**-0.075**	**0.470**	**0.101**	

This table presents distributional characteristics and correlations of the dependent variable and independent variables used in the analyses. Panel A provides descriptive statistics for our dependent variable, as well as for country-, subsidiary-, and MNC-parent-level independent variables. The dependent variable ($|DACC_{SUB}|$) is the subsidiary-level absolute value of discretionary accruals estimated across countries. The set of firm-level (MNC-parent and subsidiary) independent variables consists of the following measures: *TOTASS* is the book value of total assets in thousand U.S. dollars; *ROA* is return on assets, calculated as net income before extraordinary items scaled by book value of total assets; CFO is cash flow from operations scaled by book value of total assets; *SALES_GWT* is the annual percentage change in sales; *σ(CFO)* is cash flow volatility, measured as the standard deviation cash flow from operations scaled by book value of total assets; *σ(SALES)* is sales volatility, measured as the standard deviation of sales scaled by book value of total assets; *OP_CYCLE* is the length of the firm's operating cycle, defined as the number of days receivables plus days inventory; *LEVERAGE* is firm leverage, calculated as the ratio of sum of long-term debt and short-term debt to book value of total assets; *D_LOSS* is an indicator variable set to one if the respective firm reports a loss in the previous fiscal year, and zero otherwise; *TAX_INCENTIVE* is the tax incentive variable derived by Huizinga and Laeven (2008); *N_SUB* is the number of subsidiaries within each MNC group structure; *WHOLLY_OWNED* is an indicator variable set to one if the MNC-parent has a (direct or indirect) 100% stake in the respective subsidiary, and zero otherwise; *SAME_NAME* is an indicator variable set to one if the respective subsidiary is named after its MNC-parent, and zero otherwise; *D_INTERLOCK* is an indicator variable set to one if at least one of the subsidiary board members sits on the board of the MNC-parent (i.e., MNC-parent and subsidiary boards are interlocked), and zero otherwise; *HORIZONTAL* is an indicator variable set to one if the MNC-parent and the respective subsidiary belong to the same industry group; *SPEC_KNOWLEDGE* is an indicator variable capturing the degree of knowledge specialization; *REL_SIZE* is an indicator variable set to one if the respective subsidiary is above the median size (measured using book value of total assets) relative to the other subsidiaries owned by the same MNC-parent, and zero otherwise; *FOREIGN* is an indicator variable set to one if the respective subsidiary is domiciled in a different country from the MNC headquarters, and zero otherwise; *PRIVATE* is an indicator variable set to one if the respective subsidiary is not listed in public equity markets, and zero otherwise; *GAAP_DIST* is the relative distance between the accounting standards applied by the respective subsidiary and its MNC-parent. Financial and governance data are from the Orbis database. The rule of law index (*RULE_LAW*) is from the Worldwide Governance Indicators created by the World Bank (Kaufmann et al., 2009) The country-level distance between MNC-parent and subsidiary accounting standards (*GAAP_DIST*) is based on the GAAP proximity scores reported by Bae et al. (2008). All continuous variables are winsorized at the 1st and 99th percentile of their distributions. Detailed variable definitions are presented in the Appendix. The subscripts *MNC* and *SUB* indicate whether the respective variable is measured at the MNC-parent or subsidiary level. Panel B reports the average and median (within-groups and across-groups) earnings management correlations. The within-group earnings management correlation is computed

between the respective subsidiary and all other subsidiaries controlled by the same MNC-parent. The across-groups earnings management correlation is computed between the respective subsidiary and all other subsidiaries in the same country-industry group other than those controlled by the same MNC-parent. To compute these correlations, we limit our sample to subsidiaries with at least five years of available data. In Panel C Pearson (Spearman) correlations are above (below) the diagonal. Significant correlations at the 1% level (two-sided) appear in bold print.

Table 3: MNC-Parent Influence over Subsidiary Earnings Management

	Dependent variable: $\|DACC_{SUB}\|$					
Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.064***	0.039***	0.030***	0.019*	0.022**	0.081*
	(7.42)	(4.57)	(2.95)	(1.81)	(2.54)	(1.85)
Subsidiary firm-level characteristics:						
$LOG(TOTASS_{SUB})$	-0.003***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(-7.34)	(-5.32)	(-4.84)	(-4.53)	(-3.14)	(-2.84)
$\|ROA_{SUB}\|$	-0.131***	-0.132***	-0.132***	-0.133***	-0.133***	-0.132***
	(-8.51)	(-9.44)	(-9.94)	(-9.79)	(-10.51)	(-11.49)
$\|CFO_{SUB}\|$	0.518***	0.518***	0.519***	0.519***	0.520***	0.525***
	(25.97)	(26.25)	(26.46)	(26.45)	(26.55)	(27.22)
$SALES\_GWT_{SUB}$	0.070***	0.069***	0.069***	0.069***	0.068***	0.068***
	(12.07)	(11.95)	(11.98)	(11.90)	(11.86)	(11.29)
$\sigma(CFO_{SUB})$	0.175***	0.171***	0.170***	0.169***	0.168***	0.160***
	(14.09)	(12.70)	(12.83)	(12.59)	(11.76)	(10.99)
$\sigma(SALES_{SUB})$	0.028***	0.026***	0.027***	0.027***	0.027***	0.026***
	(8.72)	(8.76)	(9.24)	(8.46)	(9.25)	(8.40)
OP_CYCLE_{SUB}	0.246**	0.196**	0.174**	0.168**	0.159*	0.133*
	(2.55)	(2.17)	(2.06)	(2.07)	(1.92)	(1.88)
$LEVERAGE_{SUB}$	-0.014	-0.015	-0.016	-0.016	-0.016	-0.010
	(-1.19)	(-1.28)	(-1.36)	(-1.38)	(-1.37)	(-0.83)
D_LOSS_{SUB}	0.008**	0.008**	0.007**	0.007**	0.007**	0.005*
	(2.48)	(2.37)	(2.37)	(2.30)	(2.08)	(1.75)
$TAX\_INCENTIVE_{SUB}$	0.039***	0.028***	0.030***	0.035***	0.039	0.048
	(5.20)	(4.44)	(4.22)	(6.07)	(0.00)	(0.00)
MNC-parent firm-level characteristics:						
$LOG(TOTASS_{MNC})$			0.001***	0.001***	0.000	0.002
			(3.39)	(2.89)	(0.70)	(0.59)
$\|ROA_{MNC}\|$			-0.017	-0.025	-0.026	-0.034
			(-0.72)	(-1.19)	(-1.29)	(-1.11)
$\|CFO_{MNC}\|$			-0.012	-0.011	-0.011*	-0.004
			(-1.35)	(-1.33)	(-1.72)	(-0.00)
$SALES\_GWT_{MNC}$			0.005	0.004	0.005	0.003
			(1.53)	(1.41)	(1.42)	(0.78)
$\sigma(CFO_{MNC})$			0.037***	0.033***	0.036**	-0.009
			(4.62)	(3.30)	(2.46)	(-0.67)
$\sigma(SALES_{MNC})$			0.004	0.003	0.005	0.001
			(0.94)	(0.90)	(1.07)	(0.26)
OP_CYCLE_{MNC}			0.281***	0.287***	0.223**	0.043
			(3.16)	(3.03)	(1.99)	(0.40)
$LEVERAGE_{MNC}$			-0.008	-0.009	-0.007	0.003
			(-1.04)	(-1.64)	(-1.54)	(0.26)
D_LOSS_{MNC}			0.000	0.000	-0.000	-0.001
			(0.16)	(0.08)	(-0.09)	(-0.67)
$LOG(N\_SUBS_{MNC})$			-0.003***	-0.003***	-0.003***	-0.001
			(-4.98)	(-3.92)	(-3.47)	(-0.39)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Subsidiary-industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Subsidiary-country fixed effects	No	Yes	Yes	Yes	No	No
MNC-parent-country fixed effects	No	No	No	Yes	No	No
Country-pair fixed effects	No	No	No	No	Yes	Yes
MNC-parent fixed effects	No	No	No	No	No	Yes

(*continued*)

Table 3 (continued)

(*continued*)

	Dependent variable: $\lvert DACC_{SUB} \rvert$					
Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)
Tests for the inclusion of subsidiary country dummies (2)-(1)						
F-test [p-value]:	[0.000]					
Vuong-test [p-value]:	[0.000]					
Tests for the inclusion of MNC-parent controls (3)-(2)						
F-test [p-value]:	[0.000]					
Vuong-test [p-value]:	[0.000]					
Tests for the inclusion of MNC-parent country dummies (4)-(3)						
F-test [p-value]:	[0.000]					
Vuong-test [p-value]:	[0.000]					
Tests for the inclusion of country-pair dummies (5)-(4)						
F-test [p-value]:	[0.000]					
Vuong-test [p-value]:	[0.000]					
Tests for the inclusion of MNC-parent dummies (6)-(5)						
F-test [p-value]:	[0.000]					
Vuong-test [p-value]:	[0.000]					
Obs.	84,115	84,115	84,115	84,115	84,115	84,115
Adj. R^2	0.465	0.467	0.468	0.468	0.472	0.479

This table reports the results of regressions relating MNC-parent and subsidiary characteristics to the extent of subsidiary-level earnings management. Columns (1) and (2) examine the role of subsidiary (firm- and country-level) determinants. Columns (3) to (5) examine the incremental role of MNC-parent (firm- and country-level) determinants. Column (6) examines the role of unobservable MNC-parent factors by including MNC-parent fixed effects in the empirical specification. The dependent variable ($|DACC_{SUB}|$) is the subsidiary-level absolute value of discretionary accruals. The set of firm-level (MNC-parent and subsidiary) characteristics consists of the following variables: *LOG(TOTASS)* is the natural logarithm of book value of total assets; |*ROA*| is the absolute value of return on assets, calculated as net income before extraordinary items scaled by book value of total assets; |CFO| is the absolute value of cash flow from operations scaled by book value of total assets; *SALES_GWT* is sales growth, calculated as the annual percentage change in sales; *σ(CFO)* is cash flow volatility, measured as the standard deviation cash flow from operations scaled by book value of total assets; *σ(SALES)* is sales volatility, measured as the standard deviation of sales scaled by book value of total assets; *OP_CYCLE* is the length of the firm's operating cycle, defined as the number of days receivables plus days inventory; *LEVERAGE* is firm leverage, calculated as the ratio of sum of long-term debt and short-term debt to book value of total assets; *D_LOSS* is an indicator variable set to one if the respective firm reports a loss in the previous fiscal year, and zero otherwise; *TAX_INCENTIVE* is the tax incentive variable derived by Huizinga and Laeven (2008); *LOG(N_SUB)* is the natural logarithm of the number of subsidiaries within each MNC group structure. The subscripts *MNC* and *SUB* indicate whether the respective variable is measured at the MNC-parent or subsidiary level. A detailed presentation of all the variable definitions is provided in the Appendix. We include, without reporting the coefficients, the following series of fixed effects: year (all specifications); subsidiary industry (all specifications); subsidiary country (columns (2) to (5)); MNC-parent country (column (4)); country-pair (columns (5) and (6)); MNC-parent (column (6)). We report p-values (in squared brackets) from Wald F-tests assessing that the coefficients for: subsidiary-country dummies (in columns (2)), MNC-parent controls (in model (3)), MNC-parent-country dummies (in column (4)), country-pair dummies (in column (5)), MNC-parent dummies (in column (6)) are (respectively) jointly equal to zero. We also report p-values (in squared brackets) from Vuong-tests assessing the increase in R^2 resulting from the inclusion of: subsidiary country dummies (comparison of specifications in columns (2) and (1)), MNC-parent controls (comparison of specifications in columns (3) and (2)), MNC-parent country dummies (comparison of specifications in columns (4) and (3)), country-pair dummies (comparison of specifications in columns (5) and (4)), MNC-parent dummies (comparison of specifications in columns (6) and (5)). The table reports OLS coefficient estimates and (in parentheses) *t*-statistics based on heteroskedasticity-robust standard errors clustered by subsidiary country and subsidiary industry. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 4: MNC-Parent/Subsidiary Integration, Subsidiary Independence, and Subsidiary Earnings Management Opportunities

	Dependent variable: $\lvert DACC_{SUB} \rvert$								
	Integration			Independence			Opportunity		
Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	0.029***	0.030***	0.025**	0.030**	0.047***	0.016***	0.029***	0.023**	0.029***
	(2.97)	(3.07)	(2.28)	(1.99)	(4.72)	(8.12)	(2.95)	(2.21)	(3.15)
$WHOLLY\_OWNED_{SUB}$	0.003***								
	(4.62)								
$SAME\_NAME_{SUB}$		0.005***							
		(3.57)							
$D\_INTERLOCK_{SUB}$			0.004***						
			(4.98)						
$HORIZONTAL_{SUB}$				-0.002**					
				(-2.50)					
$SPEC\_KNOWLEDGE_{SUB}$					-0.018***				
					(-8.67)				
REL_SIZE_{SUB}						-0.004***			
						(-2.71)			
$FOREIGN_{SUB}$							0.006***		
							(3.02)		
$PRIVATE_{SUB}$								0.006***	
								(3.19)	
$GAAP\_DIST_{SUB}$									0.003***
									(2.84)
Subsidiary firm-level characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MNC-parent firm-level characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subsidiary-industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subsidiary-country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	84,115	84,115	84,115	84,115	84,115	84,115	84,115	84,115	84,115
Adj. R^2	0.468	0.468	0.468	0.468	0.468	0.467	0.468	0.468	0.468

This table presents regressions relating subsidiary-level earnings management to the degree of subsidiary integration within the MNC structure, the degree of subsidiary independence (autonomy), and the extent of earnings management opportunities stemming from the nature of the respective subsidiary or the link between the respective MNC-parent and its subsidiary. The dependent variable ($\lvert DACC_{SUB} \rvert$) is the subsidiary-level absolute value of discretionary accruals. $WHOLLY\_OWNED_{SUB}$ is an indicator variable set to one if the MNC-parent has a (direct or indirect) 100% stake in the respective subsidiary, and zero otherwise; $SAME\_NAME_{SUB}$ is an indicator variable set to one if the respective subsidiary is named after its MNC-parent, and zero otherwise; $D\_INTERLOCK_{SUB}$ is an indicator variable set to one if at least one of the subsidiary board members sits on the board of the parent (i.e., MNC-parent and subsidiary boards are interlocked), and zero otherwise; $HORIZONTAL_{SUB}$ is an indicator variable set to one if the MNC-parent and the respective subsidiary belong to the same industry group; $SPEC\_KNOWLEDGE_{SUB}$ is an is an indicator variable capturing the degree of knowledge specialization; REL_SIZE_{SUB} is an indicator variable set to one if the respective subsidiary is above the median size (measured using book value of total assets) relative to the other subsidiaries owned by the same MNC-parent firm, and zero otherwise; $FOREIGN_{SUB}$ is an indicator variable set to one if the respective subsidiary is domiciled in a different country from the MNC headquarters, and zero otherwise; $PRIVATE_{SUB}$ is an indicator variable set to one if the respective subsidiary is not listed in

public equity markets, and zero otherwise; $GAAP\_DIST_{SUB}$ is the relative distance between the accounting standards applied by the respective subsidiary and its MNC-parent. The subscript *SUB* indicates that the respective variable is measured at the subsidiary level. A detailed presentation of all the variable definitions is provided in the Appendix. We include, without reporting the coefficients, subsidiary and MNC-parent firm-level characteristics, year fixed effects, subsidiary-industry fixed effects, and subsidiary-country fixed effects in all models. The table reports OLS coefficient estimates and (in parentheses) *t*-statistics based on heteroskedasticity-robust standard errors clustered by subsidiary country and subsidiary industry. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 5: Subsidiary Earnings Management and Country-Level Institutional Factors

	Dependent variable: $\lvert DACC_{SUB} \rvert$					
	Full sample				$RULE\_LAW_{SUB}$	
					Low	*High*
Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.059***	0.063***	0.057***	0.061***	0.085***	0.051***
	(6.09)	(7.76)	(5.87)	(7.46)	(4.01)	(5.75)
$RULE\_LAW_{SUB}$		-0.006*		-0.006*		
		(-1.80)		(-1.86)		
$RULE\_LAW_{MNC}$			0.005**	0.005***	0.009***	0.003
			(2.51)	(2.72)	(3.03)	(1.37)
Subsidiary firm-level characteristics	Yes	Yes	Yes	Yes	Yes	Yes
MNC-parent firm-level characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Subsidiary-industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Test for difference in $RULE\_LAW_{MNC}$ (5)-(6)						
χ^2-test [p-value]: Low = High	[0.038]					
Obs.	84,115	84,115	84,115	84,115	17,440	66,675
Adj. R^2	0.465	0.466	0.466	0.466	0.409	0.482

This table examines the influence of the institutional quality of both MNC-parent and subsidiary countries on the magnitude subsidiary-level earnings management. The dependent variable ($|DACC_{SUB}|$) is the subsidiary-level absolute value of discretionary accruals. *RULE_LAW* is the rule of law index from the Worldwide Governance Indicators created by the World Bank (Kaufmann et al., 2009). The subscripts *MNC* and *SUB* indicate whether the respective variable is measured at the MNC-parent or subsidiary level. A detailed presentation of all the variable definitions is provided in the Appendix. We report the p-value (in squared brackets) from a χ^2-test for the difference in the $RULE\_LAW_{MNC}$ coefficient across *Low* (column (5)) and *High* (column (6)) $RULE\_LAW_{SUB}$. We include, without reporting the coefficients, subsidiary and MNC-parent firm-level characteristics, year fixed effects, and subsidiary-industry fixed effects. The table reports OLS coefficient estimates and (in parentheses) *t*-statistics based on heteroskedasticity-robust standard errors clustered by subsidiary country and subsidiary industry. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 6: Subsidiary Earnings Management and Regulatory Arbitrage

	Dependent variable: $\|DACC_{SUB}\|$						
	Full sample	Integration		Independence		Opportunity	
		Low	*High*	*Low*	*High*	*Low*	*High*
Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)	(7)
MNC-parent/subsidiary groups based on Rule of Law:							
$HIGH_{MNC}LOW_{SUB}$	0.035***	0.026*	0.034***	0.049**	0.023*	0.007	0.036***
	(3.60)	(1.69)	(2.95)	(2.43)	(1.67)	(0.49)	(2.95)
$LOW_{MNC}HIGH_{SUB}$	0.004	0.007	-0.036**	0.128***	0.003	0.039*	-0.012
	(0.33)	(0.36)	(-2.13)	(6.15)	(0.21)	(1.87)	(-0.69)
$HIGH_{MNC}HIGH_{SUB}$	0.008	0.013	-0.032*	0.132***	0.006	0.035	-0.006
	(0.62)	(0.65)	(-1.83)	(5.98)	(0.38)	(1.58)	(-0.33)
$LOW_{MNC}LOW_{SUB}$	0.027**	0.016	0.029***	0.042**	0.014	0.026***	0.025*
	(2.55)	(0.84)	(2.60)	(2.15)	(0.90)	(3.39)	(1.75)
Subsidiary firm-level characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MNC-parent firm-level characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subsidiary-industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subsidiary-country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Test for differences across groups (1)							
F-test [p-value]: $HIGH_{MNC}LOW_{SUB} = LOW_{MNC}HIGH_{SUB}$		[0.000]					
F-test [p-value]: $HIGH_{MNC}LOW_{SUB} = HIGH_{MNC}HIGH_{SUB}$		[0.000]					
F-test [p-value]: $HIGH_{MNC}LOW_{SUB} = LOW_{MNC}LOW_{SUB}$		[0.030]					
Test for difference in $HIGH_{MNC}LOW_{SUB}$							
χ^2-test [p-value]: *Low* Integration = *High* Integration *(2)-(3)*		[0.000]					
χ^2-test [p-value]: *Low* Independence = *High* independence *(4)-(5)*		[0.000]					
χ^2-test [p-value]: *Low* Opportunity = *High* Opportunity *(6)-(7)*		[0.000]					
Obs.	84,115	42,897	41,218	46,631	37,484	41,716	42,399
Adj. R^2	0.671	0.669	0.673	0.679	0.660	0.667	0.674

This table examines the joint influence of MNC-parent and subsidiary countries' institutional quality on subsidiary-level earnings management. The dependent variable ($|DACC_{SUB}|$) is the subsidiary-level absolute value of discretionary accruals. *RULE_LAW* is the rule of law index from the Worldwide Governance Indicators created by the World Bank (Kaufmann et al., 2009). Four groups ($HIGH_{MNC}LOW_{SUB}$, $LOW_{MNC}HIGH_{SUB}$, $HIGH_{MNC}HIGH_{SUB}$, and $LOW_{MNC}LOW_{SUB}$) are formed based on whether the rule of law of the respective pair of MNC-parent and its subsidiary have their rule of law index above (below) the sample median. All models are estimated without intercepts to allow direct comparisons across different MNC-parent/subsidiary country rule of law combinations. *Integration* is an indicator variable set to one (*High*) if the first principal component of *D_INTERLOCK*, *SAME_NAME*, and *WHOLLY_OWNED* is above the sample median, and zero (*Low*) otherwise. *Independence* is an indicator variable set to one (*High*) if the first principal component of *HORIZONTAL*, *REL_SIZE*, and *SPEC_KNOWLEDGE* is above the sample median, and zero (*Low*) otherwise. *Opportunity* is an indicator variable set to one (*High*) if the first principal component of *GAAP_DIST*, *FOREIGN*, and *PRIVATE* is above the sample median, and zero (*Low*) otherwise. The subscripts *MNC* and *SUB* indicate whether the respective variable is measured at the MNC-parent or subsidiary level. A detailed presentation of all the variable definitions is provided in the Appendix. We report p-values (in squared brackets) from Wald F-

tests assessing the statistical significance of the differences in the coefficients across groups (i.e., $HIGH_{MNC}LOW_{SUB}$, $LOW_{MNC}HIGH_{SUB}$, $HIGH_{MNC}HIGH_{SUB}$, and $LOW_{MNC}LOW_{SUB}$). We also report p-values (in squared brackets) from χ^2-tests for the difference in the $HIGH_{MNC}LOW_{SUB}$ coefficients across: *Low* (column (2)) and *High* (column (3)) *Integration*; *Low* (column (4)) and *High* (column (5)) *Independence*; and *Low* (column (6)) and *High* (column (7)) *Opportunity*. We include, without reporting the coefficients, subsidiary and MNC-parent firm-level characteristics, year fixed effects, subsidiary-industry fixed effects, and subsidiary-country fixed effects in all models. The table reports OLS coefficient estimates and (in parentheses) *t*-statistics based on heteroskedasticity-robust standard errors clustered by subsidiary country and subsidiary industry. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.

Table 7: IFRS Adoption and Changes in Enforcement as Shocks to the MNC-Parent Country Institutional Quality

	Dependent variable: $\lvert DACC_{SUB} \rvert$			
	Full IFRS-test sample		Δ Enforcement	
			No	*Yes*
Independent variables:	(1)	(2)	(3)	(4)
Intercept	0.029	0.060***	0.169***	0.071***
	(0.00)	(7.97)	(16.16)	(3.11)
POST2004	-0.003	-0.002	-0.011*	-0.002
	(-1.57)	(-1.51)	(-1.71)	(-0.16)
$IFRS\_ADOPTER_{MNC}$	0.011***	0.014***	0.002	0.021***
	(4.40)	(3.61)	(0.86)	(3.63)
$LOW\_RULE\_LAW_{SUB}$		0.008**	-0.004*	0.013**
		(2.13)	(-1.88)	(2.10)
$POST2004*IFRS\_ADOPTER_{MNC}$	-0.008***	-0.010***	0.001	-0.019***
	(-3.65)	(-5.29)	(0.29)	(-5.68)
$POST2004*LOW\_RULE\_LAW_{SUB}$		-0.007*	-0.002	-0.014***
		(-1.71)	(-0.53)	(-8.13)
$IFRS\_ADOPTER_{MNC}*LOW\_RULE\_LAW_{SUB}$		-0.001	-0.001	0.000
		(-0.25)	(-0.14)	(0.04)
$POST2004*IFRS\_ADOPTER_{MNC}*LOW\_RULE\_LAW_{SUB}$		0.010***	0.003	0.019***
		(2.56)	(0.71)	(3.00)
Subsidiary firm-level characteristics	Yes	Yes	Yes	Yes
MNC-parent firm-level characteristics	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Subsidiary-industry fixed effects	Yes	Yes	Yes	Yes
Subsidiary-country fixed effects	Yes	No	No	No
Test for differential IFRS effect in low rule of law country subsidiaries (3)-(4)				
χ^2-test [p-value]: *No* Δ Enforcement = *Yes* Δ Enforcement	[0.022]			
Obs.	45,922	45,922	5,929	16,825
Adj. R^2	0.482	0.479	0.454	0.457

This table reports results of regressions relating the effect of IFRS adoption (and changes in reporting enforcement) by MNC-parent countries to subsidiary-level earnings management. The sample (full IFRS-test sample) comprises 45,922 MNC-parent-subsidiary-year observations over the period 2002-2007 (i.e., three years before and after mandatory IFRS adoption) and excludes: i) voluntary IFRS-adopting MNC-parents; ii) voluntary IFRS-adopting subsidiaries; and iii) subsidiary countries subject to mandatory IFRS adoption. Our treatment group comprises MNC-parent-subsidiary-years with MNC-parents applying local GAAP up to 2004 and IFRS after 2004, while their subsidiaries apply local GAAP throughout the period 2002-2007. Our control group comprises MNC-parent-subsidiary-years with both MNC-parents and their subsidiaries applying local GAAP throughout the period 2002-2007. The dependent variable ($\lvert DACC_{SUB} \rvert$) is the subsidiary-level absolute value of discretionary accruals

estimated across countries. *RULE_LAW* is the rule of law index from the Worldwide Governance Indicators created by the World Bank (Kaufmann et al., 2009) and measured as of 2002 or the first year of coverage for countries with no index available in 2002. $LOW\_RULE\_LAW_{SUB}$ is an indicator variable set to one if the respective country's rule of law score from Kaufmann et al. (2009) is below the sample median, and zero otherwise. $IFRS\_ADOPTER_{MNC}$ is an indicator variable set to one if the MNC-parent is domiciled in a country that requires mandatory adoption of IFRS as of December 31, 2005, and zero otherwise. *POST2004* is an indicator variable set to one for fiscal years after 2004, and zero otherwise. Δ *Enforcement* is an indicator variable set to one if the respective MNC-parent country has undertaken reforms resulting in substantive changes to the enforcement of financial reporting in 2005, and zero otherwise. The subscripts *MNC* and *SUB* indicate whether the respective variable is measured at the MNC-parent or subsidiary level. A detailed presentation of all the variable definitions is provided in the Appendix. We report the p-value (in squared brackets) from a χ^2-test for the difference in the $POST2004*IFRS\_ADOPTER_{MNC}*LOW\_RULE\_LAW_{SUB}$ interaction term across *No* (column (3)) and *Yes* (column (4)) Δ *Enforcement*. We include, without reporting the coefficients, subsidiary and MNC-parent firm-level characteristics (all specifications), year fixed effects (all specifications), subsidiary-industry fixed effects (all specifications), and subsidiary-country fixed effects (column (1)). The table reports OLS coefficient estimates and (in parentheses) *t*-statistics based on heteroskedasticity-robust standard errors clustered by subsidiary country and subsidiary industry. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels (two-tailed), respectively.