

Tax Avoidance and Geographic Earnings Disclosure

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Abstract

This study tests the relation between corporate tax avoidance and disclosure of geographic earnings. After the adoption of Statement of Financial Accounting Standards No. 131 in 1998, firms opting to no longer disclose geographic segment earnings in their financial reports experience a decrease in their worldwide effective tax rates through reduced foreign tax rates. These results are consistent with firms shifting income to lower-tax foreign operations and attempting to mask this tax avoidance behavior by no longer disclosing geographic earnings. However, evidence of the relation between tax avoidance and non-disclosure exists only until implementation of Schedule M-3 in the annual corporate tax filing beginning in 2004. Schedule M-3 requires firms to provide detailed information, including profitability, of foreign entities that are part of the consolidated financial group but whose net income is excluded from consolidated taxable income. Thus, Schedule M-3 reduces the ability of firms to hide geographic profits in lower-tax jurisdictions, making tax avoidance behavior more apparent to the IRS. This study contributes to our understanding of the interaction between financial reporting behavior and tax reporting behavior.

Key words: Tax Avoidance, Geographic Earnings Disclosure, SFAS 131, Schedule M-3

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1. Introduction

Multinational firms can avoid taxes through structured transactions among different jurisdictions (e.g., Rego 2003), such as reallocating taxable income from high-tax jurisdictions to low-tax ones (Collins et al. 1998). This type of income shifting significantly reduces tax revenues of governments in high-tax jurisdictions and potentially hinders domestic economic growth and other social benefits (e.g., GAO 2008a; GAO 2008b; U.S. Senate 2006). Policy makers around the world, including the U.S., European Union, and Canada, have either enacted or are considering regulations related to multinational firms' cross-jurisdictional income shifting and tax avoidance behavior.¹ However, relatively little is known about the determinants of multinational corporate tax avoidance behavior (Hanlon and Heitzman 2010), though such knowledge provides a basis for making and enforcing related rules.² This study investigates how geographic earnings disclosure relates to multinational firms' tax avoidance behavior.

We predict that firms engaging in tax-motivated income shifting are more likely not to disclose geographic earnings. If disclosed, abnormally high geographic earnings in low-tax jurisdictions increase the possibility of an IRS audit and subsequent costs associated with tax avoidance (e.g., Collins et al. 1998; Sullivan 2004; Christian and Schultz 2005). These costs include the expected cost of a monetary penalty imposed by the IRS as well as reputational damage due to an IRS audit (e.g., Chen et al. 2010).³ This prediction is supported by both

¹ Some examples are the tax holidays provided by American Jobs Creation Act of 2004 (AJCA) and the foundation of a profit consolidation system for multinational firms in the European Union.

² To date, the definition of tax avoidance is still an unsettled issue. In this study, the implied means of tax avoidance is firms' (legal or illegal) shifting of income from higher-tax (domestic or foreign) segments to lower-tax foreign segments. Even if legal, such shifting could result in negative publicity, reputational damage, and additional IRS scrutiny of all operations.

³ Regardless of whether the abnormal portion of earnings in low-tax jurisdictions are shifted from the U.S. or other high-tax foreign jurisdictions, the abnormally high earnings in these low-tax jurisdictions can attract the attention of the IRS and increase the possibility of an IRS audit. Foreign tax authorities might also use geographic segment

anecdotal evidence and prior studies which suggest that geographic earnings information plays an important role in determining the visibility of income shifting. For example, in response to a request from the U.S. Senate Committee on Finance, the Government Accountability Office (2008, 2) states, “Reporting of the geographic sources of income is susceptible to manipulation for tax planning purposes and appears to be influenced by differences in tax rates across countries. Most of the countries studied with relatively low effective tax rates have income shares significantly larger than their shares of the business measures least likely to be affected by income shifting practices.”

Two recent U.S. regulations provide natural experiments for testing our prediction. First, we examine U.S. firms’ decisions of whether to disclose geographic earnings in their financial reports following adoption of Statement of Financial Accounting Standards No. 131 (SFAS 131). SFAS 131 regulates multinational companies’ geographic segment reporting. Prior to SFAS 131, all multinational firms were required to disclose sales, total assets, and earnings for each (material) geographic segment. After implementation of SFAS 131, disclosure of geographic sales, identifiable assets, and earnings is still required if the firm defines primary operating segments by geographic area. However, for those firms defining primary segments by any other means (e.g., industry), only disclosure of geographic sales and identifiable assets is required; disclosure of geographic earnings is voluntary. Given that the vast majority of firms report operating segments by industry classification, disclosure of geographic earnings is voluntary for most firms, and most firms choose not to disclose (Herrmann and Thomas 2000). We expect that firms engaging in more income shifting to avoid taxes will no longer disclose geographic segment earnings.

earnings information to detect income shifting. Foreign tax authorities might have information about earnings of subsidiaries in their jurisdictions but not a U.S. parent firm’s earnings in other geographic regions.

The other natural experiment is implementation of Schedule M-3 in 2004 in the annual corporate tax report. Schedule M-3 requires U.S. multinational firms to report to the IRS each foreign entity that is included in consolidated financial net income but excluded from the consolidated tax group. For each of these foreign entities, U.S. companies must provide details of the entity's name and net income (or loss), along with other items such as total assets and total liabilities. The information provided in the Schedule M-3 plays an important role in determining which firms will be audited (Boynton et al. 2006). Thus, beginning in 2004, firms' ability to hide profits in low-tax geographic regions through non-disclosure in the financial report is reduced by disclosure to the IRS in the tax report. Accordingly, we expect that the relation between tax avoidance and non-disclosure of geographic earnings in the financial report will exist only prior to implementation of Schedule M-3. See Appendix I for an illustration of the three reporting regimes examined in this study.

Using a sample of 12,646 firm-year observations for the 13 years surrounding the adoption of SFAS 131 and Schedule M-3 (1996-2008), we compare effective tax rates in the pre-SFAS 131 period (January 1996 to November 1998), post-SFAS 131 period (December 1998 to November 2004), and post-M-3 period (December 2004 to December 2008) to test our predictions.⁴ We find that firms no longer disclosing geographic earnings in the post-SFAS 131 period have effective tax rates that are 4.3 percentage points lower than do firms that continue to disclose geographic earnings, controlling for many firm-level factors and fixed effects for year and industry.⁵ However, prior to implementation of SFAS 131 (when all firms were required to disclose geographic earnings in financial reports), eventual non-disclosers' effective tax rates

⁴ To be clear, SFAS 131 remains in effect so the post-SFAS 131 period technically includes any period after December 1998 to the present. However, for simplicity in labeling reporting regimes, we refer to the post-SFAS 131 period as beginning in December 1998 and ending in November 2004. The post-M-3 period begins in December 2004 and extends to the end of our sample period.

⁵ Our measure of effective tax rate is also referred to as the current effective tax rate in some prior studies.

were not significantly different from those of eventual disclosers. Overall, the results are consistent with firms choosing non-disclosure of geographic earnings to help conceal their tax avoidance behavior.

We further find that, after implementation of Schedule M-3 (when all firms were required to disclose geographic earnings to the IRS), non-disclosers' effective tax rates were not significantly different from those of disclosers. This finding is consistent with increases in tax reporting requirements (i.e., disclosure of geographic earnings in Schedule M-3) mitigating deficiencies in financial reporting (i.e., non-disclosure of geographic earnings in the financial report). These conclusions are robust to controlling for a number of firm characteristics, using cash effective tax rate as an alternative measure of tax avoidance, and several other tests.

We provide further supportive evidence by using foreign and domestic effective tax rates as a *within-firm control*. To the extent that non-disclosure of geographic earnings allows firms to shift income to low-tax foreign segments, only *foreign* effective tax rates are expected to be affected.⁶ Testing for changes in *domestic* effective tax rates across reporting regimes allows for a within-firm control for changes in business operations which could naturally affect firms' effective tax rates. Thus, the ability to split the worldwide effective tax rate into its domestic and foreign components allows for more reliable conclusions regarding firms' tax avoidance behavior.⁷ Supporting these arguments, we find that non-disclosure of geographic earnings is associated with lower foreign effective tax rates but is *not* associated with domestic effective tax rates. In the post-SFAS 131 period, non-disclosers' *foreign* effective tax rate is 4.5 percentage points lower than disclosers', but the difference in *domestic* effective tax rates (−0.2 percentage

⁶ For firms with operations in more than one foreign jurisdiction, income shifting to the low-tax foreign jurisdiction lowers the foreign effective tax rate but not the domestic effective tax rate.

⁷ Firms must continue to disclose *total* foreign and domestic earnings as part of SEC Regulation §210.4-08(h). Non-disclosure of geographic earnings under SFAS 131 hides only specific foreign sources of earnings.

points) is not significant. These findings further validate the effect of geographic earnings information on corporate tax avoidance behavior.

We provide several additional tests of the association between geographic earnings disclosure and tax avoidance in the post-SFAS 131 period. First, we find that the relation between non-disclosure of geographic earnings and tax avoidance is less pronounced for firms with stronger monitoring environments, measured by higher probability of an IRS audit, higher quality auditor, and greater takeover threat (G-Index). These results are consistent with the agency perspective of tax avoidance, which suggests that managers' incentives to derive private benefits play an important role in motivating firms' tax avoidance behavior (e.g., Scholes, Wolfson, Erickson, Maydew, and Shevlin 2005; Desai and Dharmapala 2004, 2006; Kim, Li, and Zhang 2011).

Second, we find the relation between non-disclosure of geographic earnings and tax avoidance is weaker when firms have material operations in tax havens. Consistent with the theoretical model developed by Mintz and Smart (2004), this finding suggests that material operations located in low-tax regions reduce firms' need to use cross-jurisdictional income shifting to avoid taxes.

This study makes several contributions. First, it addresses the calls for research on the interaction between financial reporting behavior and tax reporting behavior by Shackelford and Shevlin (2001) and Hanlon and Heitzman (2010). Our results suggest that firms engaging in income shifting to avoid taxes attempt to mask this behavior through non-disclosure in financial reports. However, increases in tax reporting requirements help to mitigate these financial reporting deficiencies.

Second, this study adds to a long line of research on the determinants of disclosure quality. For example, some studies suggest that firms increase disclosure quality to mitigate agency costs associated with information asymmetry, while other studies show that firms decrease disclosure quality to avoid proprietary costs. We show that firms' disclosure quality is also impacted by managers' attempts to conceal their firms' tax avoidance behavior. In our study, we measure disclosure quality using firms' decision on whether to disclose geographic earnings in their financial reports.

Third, this research has potential implications for policy makers around the world. Our findings suggest that geographic earnings disclosure can potentially be used to regulate multinationals' tax reporting behavior, and the effect on multinationals' tax reporting behavior should be considered in future regulatory proposals related to geographic earnings disclosure by tax authorities around the world. In the U.S., there is a debate over the benefits of requiring Schedule M-3 versus the costs due to extensive preparation effort (e.g., AICPA 2011). Our findings imply that Schedule M-3 has a significant impact in reducing the impact of financial disclosure quality (i.e., non-disclosure of geographic earnings) on firms' income-shifting behavior. Tax authorities may want to carefully consider any future proposals to ease filing requirements of Schedule M-3. Moreover, our analyses also suggest a substitution between material operations located in low-tax regions and tax-motivated cross-jurisdictional income shifting, supporting the theoretical predictions of Mintz and Smart (2004). Therefore, if regulations constrain U.S. multinationals' capacity to shift income, these firms may more aggressively avoid taxes through strategically locating real investments in low-tax jurisdictions rather than in the U.S., a relatively high-tax jurisdiction. These implications should be of interests to policy makers.

The next section reviews the relevant literature and develops the hypotheses. Section 3 presents the research design and sample selection. Section 4 discusses the main empirical findings and corroborative findings. Section 5 shows additional findings. Finally, Section 6 concludes the paper.

2. Prior Literature and Hypotheses Development

2.1 Multinational Corporate Tax Avoidance and U.S. Tax Law

Tax avoidance is downward management of taxes through tax planning activities (Hanlon and Heitzman 2010),⁸ and multinational firms' tax avoidance has been discussed extensively in the literature (e.g., Collins and Shackelford 1999; Rego 2003). Firms with multiple geographic segments can reallocate taxable income from high-tax to low-tax segments and avoid taxes through structuring transactions between segments, such as royalty payments, dividend repatriations, and intrafirm debt (Dyreng and Lindsey 2009; Dharmapala et al. 2009). One of the major methods for multinational firms to reallocate taxable income is transfer pricing, which refers to strategically adjusting prices charged by one segment of the firm for products and services provided to another segment of the firm. In transactions between high-tax segments and low-tax segments, multinational firms gain tax benefits by reducing (increasing) prices of products or services provided by (to) the high-tax segments. Though most governments require firms to use transfer prices that would be used in similar transactions with unrelated parties, it is

⁸ Presumably, tax savings increase cash flows to the firm and therefore firm value. However, research also documents a negative relation between firm value and proxies for tax avoidance (e.g., Lev and Nissim 2004; Hanlon 2005). While the reason for this negative relation is not settled in the literature, some suggest that tax avoidance reflects managers' attempt to mask their own value-destroying, rent extraction activities (Scholes, Wolfson, Erickson, Maydew, and Shevlin 2005; Desai and Dharmapala 2004 and 2006). In contrast, others argue that tax avoidance may not be associated with managerial rent extraction (Blaylock 2011).

difficult to enforce this requirement, particularly when the transactions relate to products or services without active markets, such as patent rights (Dharmapala et al. 2009).

To minimize the tax impact of income shifting, the U.S. government collects taxes on U.S. multinationals' worldwide earnings. Specifically, U.S. multinationals are required to pay tax for earnings of their foreign subsidiaries when foreign earnings are repatriated. For example, U.S. multinationals operating in a jurisdiction with a foreign tax rate of 25% will pay taxes of 25% to the foreign government and, if those earnings are repatriated to the U.S., an additional 10% to the IRS (assuming a 35% U.S. tax rate). Thus, the firm obtains no tax benefit through income shifting. If, however, those foreign earnings are not repatriated, then the 10% U.S. tax payment is deferred. In this case, U.S. multinationals gain tax benefits by shifting income from the U.S. to foreign segments through transfer pricing and other methods (e.g., Harris et al. 1993; Hines and Rice 1994; Dharmapala and Riedel 2011).⁹

Graham, Hanlon, and Shevlin (2010) attempt to understand the consequences of non-repatriation of foreign earnings by surveying tax executives' response to the one-time dividends received deduction in the American Jobs Creation Act of 2004.¹⁰ They found that most of the repatriated funds during this period came from overseas cash holdings, suggesting that many firms are willing to hold large cash balances overseas to avoid taxes. Respondents indicated that they used those funds consistent with the intentions of the Act (e.g., U.S. capital investment, hiring and training of U.S. employees, and U.S. research and development expenditures). In addition, companies were willing to incur significant costs to avoid repatriation prior to the Act.

⁹ When the foreign tax rate is greater than the U.S. tax rate, the company does not receive an immediate domestic tax deduction or benefit for the difference unless those earnings are repatriated.

¹⁰ Briefly, the Act granted a one-time 85% deduction on dividends repatriated from foreign earnings to the U.S., effectively reducing the tax rate on these repatriated earnings from 35% to 5.25%.

These costs include issuing debt in the U.S. (rather than using those foreign sources of cash) and investing in foreign assets with rates of return lower than those in the U.S.

2.2 SFAS 131

Beginning in 1977, SFAS 14 required disclosure of sales, total assets, and earnings for each industry and geographic segment of the firm. Then, the FASB issued SFAS 131 (effective for fiscal years beginning December 15, 1997), which created a two-tiered segment reporting structure. SFAS 131 maintains the disclosure of sales, assets, and earnings for each *primary* segment, but for *secondary* segments, disclosure of only sales and identifiable assets is required; disclosure of earnings for secondary segments is voluntary. Herrmann and Thomas (2000) show that nearly all firms that operate in multiple industries and geographic areas choose industry segments as their primary segments. Thus, disclosure of earnings for geographic (secondary) segments has become voluntary for most firms, and most firms choose to no longer disclose.¹¹

Prior studies suggest that disclosure of segment earnings has both benefits and costs to firms. On one hand, geographic earnings disclosure under SFAS 131 can benefit firms by helping investors monitor managerial behavior. When not monitored well, managers pursue their own objectives at the expense of shareholders. Berger and Hann (2007) argue that managers may hide segment information to avoid revealing underlying agency problems associated with suboptimal cross-segment transfer of resources. Hope and Thomas (2008) find that managers conceal geographic earnings information to grow foreign operations in order to expand the total size of the “empires” they manage. On the other hand, disclosure of segment information can result in significant proprietary costs of providing sensitive information to competitors (Hayes

¹¹ While there has been some debate in the literature, several studies support the usefulness of geographic segment earnings data (e.g., Boatsman, Behn, and Patz 1993; Thomas 2000; Behn, Nichols, and Street 2002; CFA Institute 2006; Hope, Kang, Thomas, and Vasvari 2009; Hope, Thomas, and Winterbotham 2009).

and Lundholm 1996; Harris 1998; Botosan and Stanford 2005; Bens, Berger, and Monahan 2011). In addition, when geographic earnings are disclosed, missing certain earnings benchmarks at the segment level can impose costs on the firm. Consistent with this notion, prior literature shows that managers want to manage earnings upward to avoid reporting losses or earnings decreases at the individual segment level (Hann and Lu 2008).

Multinational firms' tax avoidance and income shifting behavior are partially revealed through reported geographic earnings. As multinational firms shift taxable income across different segments, the reported earnings for each segment changes. Thus, the distribution of earnings across geographic areas (at least partially) informs financial statement users about firms' cross-segment income shifting (Collins et al. 1998; Berger and Hann 2007). Therefore, non-disclosure of geographic earnings under SFAS 131 potentially leads to lower visibility of multinational firms' tax avoidance behavior.

2.3 Schedule M-3

Related to growing concerns by the Department of Treasury over the growing difference between financial statement income and tax return income, firms were required to file Schedule M-1 prior to 2004. This schedule provided an aggregate reconciliation of book income and tax income, but the schedule did not provide details about corporate geographic performance. Motivated in part by recommendation of Mills and Plesko (2003), the IRS put forth Schedule M-3. Most publicly traded and privately held firms with assets of at least \$10 million are required to adopt Schedule M-3 for tax years ending on or after December 2004. Schedule M-3 is an attachment to Form 1120. "The goal of the Schedule M-3 is greater transparency and uniform organization in book-tax data at the time of return filing so that the data may be used to

determine what returns will and will not be audited and to determine what issues will and will not be examined on the returns selected for audit” (Boynton et al. 2006, 944). Related to this study, Schedule M-3 requires firms to provide information about specific foreign entities that are included in consolidated net income but excluded from taxable income. This information includes items such as the entity’s name, net income, total assets, and total liabilities. Schedule M-3 also requires specific details on intercompany transactions between entities included in taxable income and those excluded from taxable income, such as the name of the excluded entity and the nature and amount of the intercompany transaction. Thus, after implementation of Schedule M-3, the IRS has considerably more information about multinational firms’ geographic performance.¹²

2.4 Hypotheses Development

We argue that firms engaging in tax-motivated income shifting are more likely not to disclose geographic earnings. If disclosed, abnormally high geographic earnings in low-tax jurisdictions increase the probability of an IRS audit and subsequent costs associated with tax avoidance. These costs include the expected cost of a monetary penalty imposed by the IRS, as well as reputational damage due to an IRS audit (Chen et al. 2010). This prediction is based on the argument that geographic earnings information helps tax authorities and other financial information users detect tax-motivated income shifting behavior (Collins et al. 1998; Sullivan 2004; Christian and Schultz 2005). For example, using a sample from the pre-SFAS 131 period,

¹² In addition to being available to the IRS, the information in M-3 is potentially available also to certain investors (which should strengthen the effect of M-3 in our setting). Specifically, Lenter, Slemrod, and Shackelford (2003) discuss the exceptions to the general rule of confidentiality. They explain that shareholders who own at least one percent of the outstanding stock of the corporation may inspect the corporation’s return by making a written request to the IRS. However, it is a felony for one-percent shareholders to disclose to other persons tax return information they obtain from the IRS.

Collins et al. (1998) find that investors recognize firms' tax-motivated income shifting behavior by analyzing geographic earnings information. Further, in a study to assist the IRS in its effort to quantify the compliance problem caused by the income shifting activities of U.S. multinational corporations, Christian and Schultz (2005) view abnormally high geographic earnings in low-tax jurisdictions as indicators to identify potential income shifters. Sullivan (2004) also employs geographic earnings to estimate the amount of earnings that U.S. firms shifted to low-tax jurisdictions.

Based on the discussion above, we formally state the first hypothesis as:

H1: After adoption of SFAS 131 and before implementation of Schedule M-3, firms that no longer provide geographic earnings disclosure engage in greater tax avoidance behavior than do firms that provide such disclosure.

After the adoption of Schedule M-3, non-disclosure of geographic earnings in the financial report does not allow firms to withhold geographic earnings information from the IRS. Therefore, the prediction of a positive relation between non-disclosure of geographic earnings under SFAS 131 and tax avoidance will be reduced after the adoption of Schedule M-3. The second hypothesis is formally stated as:

H2: After implementation of Schedule M-3, the positive relation between tax avoidance and nondisclosure of geographic earnings under SFAS 131 will diminish.

3. Research Design and Sample

3.1 Model Specification

To test the hypotheses, we use the following empirical model (see Appendix II for variable definitions).

$$\begin{aligned} ETR_{i,t} = & \alpha_0 + \alpha_1 NoDisc_{i,t} + \alpha_2 LnMV_{i,t} + \alpha_3 Lev_{i,t} + \alpha_4 MB_{i,t} + \alpha_5 NOL_{i,t} + \alpha_6 \Delta NOL_{i,t} \\ & + \alpha_7 NI_{i,t} + \alpha_8 FI_{i,t} + \alpha_9 PPE_{i,t} + \alpha_{10} RD_{i,t} + \alpha_{11} EqInc_{i,t} + \alpha_{12} Intang_{i,t} \\ & + YearFixedEffects + IndustryFixedEffects + \varepsilon_{i,t} \end{aligned} \quad (1)$$

Following prior literature (e.g., Dyreng and Lindsey 2009), we use the effective tax rate (*ETR*) as our primary measure of tax avoidance, defined as current tax expense divided by pretax income.¹³ This measure is meant to capture the firm's tax burden and provide an inverse indicator of tax avoidance. While exclusion of deferred taxes in our measure of *ETR* is commonly employed in the literature, doing so has an additional benefit in our study. Any income that is shifted to foreign jurisdictions that is not repatriated (but also not classified as permanently reinvested) will be included in the firm's deferred tax amount. Thus, including deferred taxes in our measure of *ETR* would reduce our ability to measure multinational firms' tax avoidance behavior.

Following Hope and Thomas (2008), we classify a firm as a non-discloser (*NoDisc*) if the firm does not report earnings for at least two foreign segments in the first two years after adopting SFAS 131.¹⁴ If firms that no longer disclose geographic earnings engage in more tax avoidance behavior than do firms that continue to provide geographic earnings disclosure, the coefficient on *NoDisc* should be negative ($\alpha_1 < 0$). If the relation between non-disclosure of

¹³ We also use cash tax rates in additional tests as an alternative measure.

¹⁴ In our sample, firms that report earnings for at least two foreign segments in the first two years after adopting SFAS 131 disclose at least two foreign segments in each and every year after the post-SFAS 131 period. This validates this classification method.

geographic segment earnings and tax avoidance is mitigated after the adoption of Schedule M-3, the coefficient on *NoDisc* should be zero in the post M-3 period.

We include a number of control variables that may affect the level of *ETR* as documented in the literature (e.g., Manzon and Plesko 2002; Mills 1998; Rego 2003; Dyreng et al. 2008; Frank et al. 2006). The first set of control variables (*LnMV*, *Lev*, *MB*, *NOL*, Δ *NOL*, *NI*, and *FI*) capture tax planning incentives and opportunities. Larger firms face more political costs in the form of higher tax payments (e.g., Zimmerman 1983; Omer, Molloy and Ziebart 1993), and consequently we control for firm size (*LnMV*). We include leverage (*Lev*) as more leveraged firms may not need to engage in tax planning activities due to tax shield benefit of debt financing. We also control for growth by including the market-to-book ratio (*MB*). We use the presence of net operating loss carryforward (*NOL*) and the direction of the change in the *NOL* balance (Δ *NOL*) to capture whether firms can use (have used) the tax benefits associated with loss carry forwards. We include net income scaled by lagged total assets (*NI*) to capture profitability, as profitable firms might have more incentives for tax planning (Chen et al. 2010). Lastly, we include foreign net income scaled by lagged total assets (*FI*) as firms with foreign operations may naturally operate in jurisdictions with different statutory tax rates.

The second set of control variables (*PPE*, *RD*, *EqInc*, and *Intang*) capture differences in book and tax reporting that can affect our tax avoidance measures. Capital intensive firms are more affected by the different treatments of depreciation expense for tax and financial reporting purposes, and we include *PPE*. We include research and development expense (*RD*), equity in earnings (*EqInc*), and intangible assets (*Intang*) in the regressions to control for the differential book and tax treatments of intangible assets and consolidated earnings accounted for using the

equity method. Finally, year and industry fixed effects are included to control for macro-economic conditions and changes in tax laws that differ across years and across industries.

3.2 Sample Selection

All data are from *Compustat*. We focus on the 13 years surrounding the adoption of SFAS 131 and Schedule M-3 (1996-2008). To ensure that firms in our sample have sufficient foreign operations, we require availability of domestic and foreign performance measures in the current and previous year, as well as foreign sales.¹⁵ We also require that each sample firm have the necessary data to estimate our model. Then, we delete firms with total assets less than \$10 million in the post-M-3 period and firms with negative effective tax rates. Following prior studies (e.g., Dyreng et al. 2010), we further winsorize firms with effective tax rates greater than one to equal one. All the other continuous variables are winsorized at the 1% and 99% levels.¹⁶ The final sample includes 12,646 firm-year observations. In the pre-SFAS 131 period 1,607 of 1,861 observations include firms that are eventual non-disclosers of geographic segment earnings. The post-SFAS 131 period consists of 5,332 observations, of which 4,459 represent firms that no longer disclose geographic earnings. In the post-M-3 period, 4,834 of 5,453 observations come from firms not disclosing geographic earnings in the post-SFAS 131 period.

3.3 Descriptive statistics

Table 1 presents univariate statistics separately for disclosers and non-disclosers. In the post-SFAS 131 period (Panel B), non-disclosers' *ETR* (0.25) is lower than disclosers' *ETR* (0.30). In the pre-SFAS 131 period (Panel A), the difference is less; non-disclosers have slightly

¹⁵ SEC Regulation §210.4-08(h) requires firms to report total foreign and domestic earnings.

¹⁶ Results are not sensitive to truncating the sample at the 1% and 99% levels for the continuous variables.

lower *ETR* (0.28) than do disclosers (0.30). In Panel C, which uses the subsample of the post-M-3 period, non-disclosers still have slightly lower *ETR* (0.26) than do disclosers (0.28). In addition, non-disclosers tend to have lower market value of equity (*LnMV*), lower market-to-book ratio (*MB*), lower leverage (*Lev*), and lower profitability (*NI*). The distributions for the other variables are generally similar for the two subsamples.

Table 2 presents correlations between the variables. The top half of the table shows the Pearson correlations; the bottom half shows the Spearman correlations. *ETR* is significantly negatively correlated with non-disclosure of geographic earnings (*NoDisc*). In untabulated analyses, the Pearson correlation between *ETR* and *NoDisc* in the pre-SFAS 131 (post-SFAS 131) [post-M-3] period is -0.033 (-0.101) [-0.030]. Non-disclosure of geographic earnings is most significantly related to lower effective tax rates in the post-SFAS 131 period. However, simple correlations do not control for a number of firm-specific variables expected to relate to *ETR*, so we base conclusions on multiple regression tests reported below. *ETR* is also significantly correlated with all other variables.¹⁷

4. Primary Empirical Results

4.1 Univariate Analyses

We provide three figures to demonstrate the temporal movement in *ETR* for disclosers and non-disclosers over the three reporting regimes, again recognizing that these results do not control for a number of firm characteristics expected to relate to *ETR*. Figure 1 shows the effective tax rate (*ETR*) for the disclosers and non-disclosers of geographic earnings. In December 1998, SFAS 131 went into effect. Before this transition year, eventual non-disclosers

¹⁷ We test the Variance Inflation Factors (VIF) for all regressions. The maximum VIF is 6, relieving concerns about multicollinearity.

tend to have slightly lower *ETR* than do continuing disclosers.¹⁸ But, in the years immediately following 1998, non-disclosers have substantially lower *ETR* than do disclosers. These results are consistent with the view that multinational firms engaging in tax avoidance attempt to hide these activities through non-disclosure of geographic earnings. The difference in *ETR* then diminishes in the post-M-3 period.

Figure 2 shows the foreign effective tax rate (*ETR_For*) for the disclosers and non-disclosers of geographic earnings. Similar to Figure 1, the differences are relatively minor between disclosers and non-disclosers in *ETR_For* before and after the post-SFAS 131 period. However, during the post-SFAS 131 period, non-disclosers have substantially lower *ETR_For* than do disclosers. These results suggest that non-disclosure of geographic earnings is associated with lower foreign tax rates.

Finally, Figure 3 depicts the domestic effective tax rate (*ETR_Dom*) for disclosers and non-disclosers of geographic earnings. Over the entire sample period, the differences in *ETR_Dom* for disclosers versus non-disclosers are relatively minor. The within-firm design of looking at *ETR_For* versus *ETR_Dom* provides greater confidence that differences in worldwide effective tax rates of disclosers and non-disclosers are unlikely the result of differences in normal business operations which may naturally affect firms' effective tax rates. Instead, the overall results point more toward a reduction in effective tax rates by avoiding taxes through foreign operations.

¹⁸ We use fiscal year as the horizontal axis, because certain regulatory policies can lead to year fixed effects on tax rates, such as the tax holidays provided by American Jobs Creation Act of 2004.

4.2 Regression Analyses

Table 3 shows the estimation results for model (1). To provide a set of “difference-in-differences” tests, we separate the sample into three periods: pre-SFAS 131 period (January 1996 to November 1998), post-SFAS 131 (December 1998 to November 2004), and post-M-3 period (December 2004 to December 2008). The first column uses observations from the pre-SFAS 131 period; the second column uses observations from the post-SFAS 131; the third column uses observations from the post-M-3 period. For the control variables, *ETR* is positively associated with *LnMV*, *Intang*, and *Lev*, but negatively related to *MB*, *NOL*, *RD* and *NI*. These findings are generally consistent with expectations.

In the second column of results, the coefficient on *NoDisc* is negative and significant (-0.043 ; t -statistic = -3.78). This result can be interpreted to mean that, controlling for other firm characteristics and fixed effects for year and industry, non-disclosers’ effective tax rates are 4.3 percentage points lower than those of disclosers in the post-SFAS 131 period. These results are consistent with H1. Firms that no longer provide geographic earnings disclosure engage in more tax avoidance behavior than do firms that provide such segment disclosure. In other words, firms utilize non-disclosure of geographic segment earnings to conceal their tax avoidance behavior. Importantly, in the first column (in the pre-SFAS 131 period), we do not observe the same relation between *NoDisc* and *ETR*. The coefficient on *NoDisc* is insignificant (-0.005 , t -statistic = -0.32). Furthermore, untabulated results show that the coefficient on *NoDisc* in the pre-SFAS 131 period is significant less negative than the coefficient on *NoDisc* in the post-SFAS 131 period at the 0.01 level.

With respect to H2, for the post-M-3 period, the final column shows that the coefficient on *NoDisc* is insignificant (-0.001 , t -statistic = -0.08) and significantly less negative than the

coefficient on *NoDisc* in the post-SFAS 131 period at the 0.01 level (untabulated). These results support H2 and are consistent with the idea that IRS monitoring through greater access to firms' foreign operations reduces the ability of non-disclosure of geographic earnings in the financial reports to hide firms' tax avoidance behavior. This was the explicit purpose in mandating Schedule M-3.

We also consider that our sample contains more non-disclosures than disclosers. This alone, however, should not bias the coefficient on *NoDisc*. In addition, our conclusions hold when we include controls to account for cross-sectional differences in *ETR* between disclosers and non-disclosers (Table 3) and when we exclude controls (Figure 1 and Tables 1 and 2). Nevertheless, to provide additional evidence of whether unequal sample sizes affect conclusions, we perform matched-firm analyses. Specifically, we match each disclosers with either one or two non-disclosers based on year, industry (two-digit SIC code), and firm size. For size, we require matched firms to have an absolute difference in *LnMV* less than one.

For the post-SFAS 131 period, we find a one-to-one match for 1,514 observations (i.e., 757 disclosers and 757 non-disclosers). In an untabulated regression of *ETR* on *NoDisc* and control variables, the coefficient on *NoDisc* is negative and significant (-0.028 , t-statistic = -1.99). For our analysis using a one-to-two match (recommended over one-to-one matching by Cram, Karan, and Stuart 2009, as it may reduce noise in the matched sample), we obtain 2,154 observations (i.e., 718 disclosers and 1,436 non-disclosers). The coefficient on *NoDisc* remains significantly negative (-0.028 , t-statistic = -2.26).

4.3. Within-Firm Control Using Foreign versus Domestic Tax Rates

The results to this point are consistent with non-disclosers shifting more income from higher-tax jurisdictions (such as the U.S. or other foreign operations) to lower-tax foreign jurisdictions in the post-SFAS 131 period. If this is the case, then we should observe the reduction in the worldwide effective tax rate occurring for its foreign component (ETR_For) but not for its domestic component (ETR_Dom).¹⁹ We expect a negative relation between $NoDisc$ and ETR_For . Alternatively, testing the relation between $NoDisc$ and ETR_Dom serves as a *within-firm control* for changes in effective tax rates that could occur for natural changes in business operations across reporting regimes. If the reduced worldwide effective tax rate we observe for non-disclosers during the post-SFAS 131 period is being caused by factors not controlled for in the model, then we are more likely to observe a negative relation between $NoDisc$ and ETR_Dom as well. If, however, we observe a reduction only in the foreign effective tax rate for non-disclosers during the post-SFAS 131 period, then it is more likely the case that firms utilize non-disclosure of geographic earnings to mask their income shifting to lower-tax foreign jurisdictions. The predictions are (1) a negative coefficient on $NoDisc$ when ETR_For is the dependent variable and (2) an insignificant coefficient on $NoDisc$ when ETR_Dom is the dependent variable.²⁰

$$\begin{cases} ETR_FOR_{i,t} \\ ETR_DOM_{i,t} \end{cases} = \alpha_0 + \alpha_1 NoDisc_{i,t} + \alpha_2 LnMV_{i,t} + \alpha_3 Lev_{i,t} + \alpha_4 MB_{i,t} + \alpha_5 NOL_{i,t} \\ + \alpha_6 \Delta NOL_{i,t} + \alpha_7 NI_{i,t} + \alpha_8 FI_{i,t} + \alpha_9 RD_{i,t} + \alpha_{10} EqInc_{i,t} \\ + \alpha_{11} PPE_{i,t} + \alpha_{12} Intang_{i,t} + YearFixedEffects + IndustryFixedEffects + \varepsilon_{i,t} \quad (3)$$

¹⁹ Simplified, the U.S. tax code has a corporate income tax rate structure that produces a flat 34% tax rate on incomes from \$335,000 to \$10,000,000, gradually increasing to a flat rate of 35% on incomes above \$18,333,333. In practice the tax rate is quite flat over a wide range of incomes applicable to our sample.

²⁰ We delete firms with missing values and observations with ETR_For or ETR_Dom less than zero. Firms with ETR_For or ETR_Dom greater than one are reset to 1.

Where,

ETR_For = Foreign effective tax rate, measured as current foreign tax expense/foreign pretax income

ETR_Dom = Domestic effective tax rate, measured as current domestic tax expense/domestic pretax income

Table 4 shows the estimation results for model (3). The sample is from the post-SFAS 131 period (December 1998 to November 2004). The first column uses foreign effective tax rates (*ETR_For*) as the dependent variable, and the second column uses domestic effective tax rates (*ETR_Dom*) as the dependent variable. Consistent with expectations, we find a negative coefficient on *NoDisc* when *ETR_For* is the dependent variable (-0.045 , t -statistic = -2.44) and an insignificant coefficient on *NoDisc* when *ETR_Dom* is the dependent variable (-0.017 , t -statistic = -0.96). This finding suggests that after adopting SFAS 131, firms that no longer provide geographic earnings disclosure engage in more foreign tax avoidance behavior than do firms that provide such disclosure. In other words, geographic earnings disclosure is associated with multinational firms avoiding taxes by shifting income to lower-tax foreign segments and is not related to changes in underlying business operations.²¹

5. Additional Tests

5.1 The Role of Monitoring

As briefly discussed earlier, some studies suggest that tax avoidance activities are affected by managers' rent extraction behavior (e.g., Scholes, Wolfson, Erickson, Maydew, and Shevlin 2005; Desai and Dharmapala 2004, 2006; Kim, Li, and Zhang 2011). We argue that IRS

²¹ Untabulated tests show that in the pre-SFAS 131 period and in the post-M-3 period, neither *ETR_Dom* nor *ETR_For* relates to *NoDisc*.

agents, Big N auditors,²² and takeover threats can monitor the activities of managers and reduce their incentives to derive private benefits. Therefore, for firms with strong monitoring environments, we predict that the relation between effective tax rates and non-disclosure of geographic earnings will weaken.

The first monitoring mechanism we investigate is the probability of an IRS audit. Prior studies find that a higher threat of an IRS audit increases financial reporting quality (Hanlon, Hoopes, and Shroff 2011) and lowers the cost of equity and debt financing (e.g., Guedhami and Pittman 2008; Ghoul, Guedhami, and Pittman 2011).²³ Their results are attributed to the monitoring role of tax enforcement. The second monitoring mechanism we investigate is Big N auditors. The role of high quality auditors in monitoring managerial behavior has been documented in a variety of settings, and high quality auditors can reduce managers' reporting discretion.²⁴ We separate observations based on whether the firm hires a Big N auditor or not. Finally, we use takeover threat to measure monitoring. Gompers et al. (2003) suggest that firms with a low G-Index significantly higher takeover threats than do other firms. Several studies find evidence in different contexts that takeover threat serves as a strong mechanism in monitoring managerial tax reporting behavior.²⁵ Therefore, observations with a greater takeover threat are expected to be more highly monitored. Following Gompers et al. (2003), we separate observations based on whether the firm's G-Index is less than or equal to thirteen. Data for the G-Index are obtained from *IRRC*.

²² Big N refers to Big 5 before 2001 and Big 4 after 2001.

²³ In these studies, firms are classified as having a high probability of receiving an IRS audit if they have total assets greater than \$250 million and operate in any of the following industries: Natural Resources, Construction, Heavy Manufacturing, and Transportation (two digit SIC : 07-09, 12-17, 34, 37, 45 and 47). For further details, see data provided by Transactional Records Access Clearinghouse (2007a, 2007b).

²⁴ High-quality auditors should have a greater ability to monitor complex transactions related to cross-jurisdictional income shifting.

²⁵ For example, Kim et al. (2011) suggest that takeover threat mitigates the relation between corporate tax avoidance and managers' bad news hoarding behavior.

Table 5 reports the results for the post-SFAS 131 period. The first three columns of results use observations that have low monitoring (i.e., low probability of an IRS audit, low auditor quality, and low takeover threat). For all three, we find that the relation between effective tax rates and non-disclosure of geographic earnings remains significantly negative. In the second three columns, where monitoring is high, we find no evidence of a relation between effective tax rates and non-disclosure when there is a high probability of IRS audit or when there is a high takeover threat. These two coefficients are also significantly less negative than the two coefficients, respectively, in the high monitoring sample at the 0.03 level or better. For the high audit quality sample, however, we continue to find a significant negative relation between *ETR* and *NoDisc*, but this coefficient is marginally significantly less negative than the coefficient in the low audit quality sample at the 0.09 level (using a one-tailed test). Overall, we conclude that the results support our expectations that more closely monitored firms are less likely to have a relation between tax avoidance and non-disclosure of geographic segment earnings.

5.2 The Role of Material Operations in Tax Havens

Prior research shows that operations in tax havens can bring U.S. multinational firms tax benefits (e.g., Dyreng and Lindsey 2009). The theoretical model developed by Mintz and Smart (2004) predicts that material operations located in low-tax regions substitute firms' use of cross jurisdictional income shifting to avoid taxes. In other words, when firms already have material operations in low-tax jurisdictions, they have less of a need to avoid tax through income shifting. Therefore, for firms with operations in one or more tax havens, we predict the relation between effective tax rates and non-disclosure of geographic earnings to be weaker.

To test this prediction, we separate firms based on whether they disclose at least one tax haven as a separate segment or not. Then, we re-estimate equation (1) in the two separate

subsamples. To identify tax havens, we adopt a list of tax havens from Dyreng and Lindsey (2009). The list identifies a country or area as a tax haven if it is listed as a tax haven in at least three of the four following sources: Organization for Economic Co-Operation and Development, the U.S. Stop Tax Havens Abuse Act, the International Monetary Fund, and the Tax Research Organization. Appendix III shows the list.

Table 6 reports the results for the post-SFAS 131 period. The first column of results uses observations with at least one tax haven segment, while the second column uses the rest of the sample. We find the coefficient on *NoDisc* is insignificant for firms that operate in one or more tax havens (-0.023 ; t-statistic = -0.74). For the sample of firms with no tax haven segments, the coefficient on *NoDisc* is significantly negative (-0.040 ; t-statistic = -3.49). Consistent with the theoretical model by Mintz and Smart (2004), the findings provide some indication that having operations in tax havens weakens the impact that non-disclosure of geographic earnings has on firms' tax avoidance behavior.²⁶

5.3 Cash Tax Rate as an Alternative Measure of Tax Avoidance

The main analyses use effective tax rates as a measure of tax avoidance. An advantage of using the *ETR* is that it can be further decomposed into foreign effective tax rate and domestic tax rate. This subsection uses cash effective tax rate (*ETR_Cash*) as an alternative measure of tax avoidance. *ETR_Cash* is measured by cash tax expense divided by pretax income (Dyreng et al. 2008). Data are not available to calculate domestic and foreign *ETR_Cash*. We re-estimate equation (1) using *ETR_Cash* as the dependent variable.²⁷

²⁶ We note that a caveat to these results is that the coefficient on *NoDisc* in the sample with no tax havens is not statistically significantly more negative than the coefficient on *NoDisc* in the sample with at least one tax haven.

²⁷ We delete observations with *ETR_Cash* less than zero. For *ETR_Cash* greater than one, we winsorize to one.

The results are reported in Table 7. The first column uses observations from the pre-SFAS 131 period; the second column uses observations from the post-SFAS 131 period; the third column uses observations from the post-M-3 period. In the post-SFAS 131 period, the coefficient on *NoDisc* is negative and significant (-0.047 ; t -statistic = -3.84). Importantly, in the pre-SFAS 131 period and in the post-M-3 period, we do not observe the same relation between *NoDisc* and *ETR_Cash*. The coefficient on *NoDisc* is insignificant in the pre-SFAS 131 period (-0.001 , t -statistic = -0.05) and insignificant in the post-M-3 period (-0.008 , t -statistic = -0.62). The coefficient on *NoDisc* in the post-SFAS 131 period is significantly more negative than the coefficients in the other periods at the 0.01 level. For univariate results of the trend in *ETR_Cash* over time, see Figure 4. Consistent with H1 and H2, the findings suggest that after adopting SFAS 131 and before adopting Schedule M-3, firms that no longer provide geographic earnings disclosure engage in more tax avoidance behavior than do firms that provide such segment disclosure.

6. Concluding Remarks

Corporate tax avoidance has attracted considerable attention from financial scholars. However, the relation between tax avoidance behavior and a firm's financial reporting behavior is largely unexplored. We argue that firms attempt to mask their tax avoidance behavior by reducing the quality of disclosures related to those tax avoidance activities. Specifically, we consider that many multinational firms may wish to shift income to low-tax foreign jurisdictions to avoid taxes, and thus they would be more likely to mask disclosures related to foreign operations when engaging in such activity.

We test our conjecture using natural experiments provided by two recent U.S. regulations. First, after implementation of SFAS 131 in December 1998, most firms can

voluntarily decide whether to disclose geographic earnings and most firms choose not to disclose. Second, after the adoption of Schedule M-3 in December 2004, multinational firms are required to report specific information (e.g., net income) of foreign entities that are included in financial net income but excluded from taxable net income. Thus, after implementation of Schedule M-3, non-disclosure of geographic earnings in the financial reports has less of an impact in concealing the profitability of firms' foreign operations from the IRS.

Using a sample of 12,646 firm-year observations for the 13 years surrounding the adoption of SFAS 131 and Schedule M-3 (1996-2008), we compare effective tax rates in the pre-SFAS 131 period (January 1996 to November 1998), post-SFAS 131 period (December 1998 to November 2004), and post-M-3 period (December 2004 to December 2008) to test our predictions. We find that firms that no longer disclose geographic earnings in the post-SFAS 131 period have effective tax rates that are 4.3 percentage points lower than those of firms that continue to disclose geographic earnings. However, prior to implementation of SFAS 131 (when all firms were required to disclose geographic earnings in segment reports), eventual non-disclosers' effective tax rates were not materially different from those of continual disclosers. After implementation of Schedule M-3 (when all firms were required to disclose detailed foreign profits to the IRS), disclosers' and non-disclosers' effective tax rates were again not significantly different. These results are robust to several firm-level control variables and several other tests. Collectively, our study suggests that firms' decisions on whether to disclose geographic earnings (i.e., their financial reporting behavior) are affected by their attempt to conceal tax avoidance behavior.

We acknowledge that our study has limitations, and we emphasize the following facts. First, the validity of our arguments depends on the reliability of our measure for tax avoidance.

In the main analyses, we use the effective tax rate. This measure has been widely used as a proxy for tax avoidance in the literature. To provide additional comfort, we use cash effective tax rate as an alternative measure and find consistent results. Second, it is possible that other events around the adoptions of SFAS 131 and Schedule M-3 could explain the results. However, in an attempt to control for these potentially unobservable variables, our study employs a difference-in-differences approach to compare disclosers and non-disclosers tax avoidance activity before and after adoptions of SFAS 131 and Schedule M-3. We also employ a matched-sample design and obtain consistent results. To further improve the power of our analyses, we decompose the effective tax rate into foreign tax rates and domestic tax rates, and this design makes the underlying relations between segment disclosure and tax avoidance more transparent.

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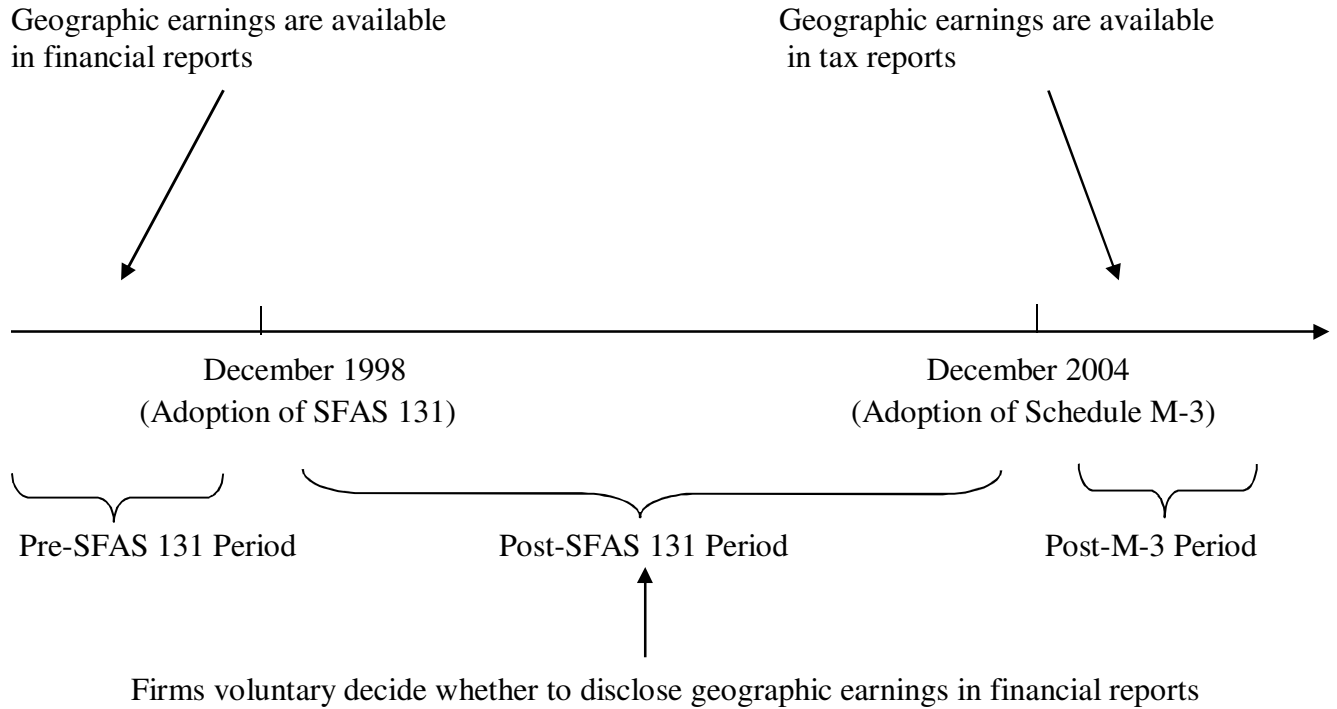
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Appendix I. Time Line for Reporting Regimes

In December 1998, SFAS 131 went into effect. In December Schedule M-3 went into effect. In the pre-SFAS 131 period, firms were required to report geographic earnings information in their financial reports. In the post-SFAS 131 period, most firms could voluntarily decide whether to report geographic earnings information in their financial reports. In the post-M-3 period, firms were required to report geographic earnings information in corporate tax reports.



Appendix II. Variable Definitions

<i>ETR</i>	=	Current tax expense (TXT–TXDI) / pretax income (PI)
<i>ETR_For</i>	=	Current foreign tax expense (TXFO–TXDFO) / foreign pretax income (PIFO)
<i>ETR_Dom</i>	=	Current domestic tax expense (TXFED–TXDFED) / domestic pretax income (PIDOM)
<i>ETR_Cash</i>	=	Cash tax expense (TXPD) / pretax income (PI)
<i>NoDisc</i>	=	Indicator equal to 1 for observations that do not disclose geographic earnings in the post-SFAS 131 period, 0 otherwise
<i>LnMV</i>	=	Natural log of the market value (PRCC × CSHO)
<i>Lev</i>	=	Total debt (LT) / lagged total assets (AT)
<i>MB</i>	=	Ratio of market value (PRCC × CSHO) to book value (CEQ)
<i>NOL</i>	=	Indicator variable equal to 1 if loss carry forward (TLCF) is negative at the beginning of year t
<i>ΔNOL</i>	=	Indicator variable equal to 1 if loss carry forward (TLCF) is lower at the end of year t than the beginning of year t, 0 otherwise
<i>NI</i>	=	Net income (NI) / lagged total assets (AT)
<i>FI</i>	=	Foreign net income (PIFO) / lagged total assets (AT)
<i>PPE</i>	=	Plant, property and equipment (PPENT) / lagged total assets (AT)
<i>RD</i>	=	Research and development expense (XRD) / lagged total assets (AT)
<i>EqInc</i>	=	Equity Income (ESUB) / lagged total assets (AT)
<i>Intang</i>	=	Intangible assets (INTAN) / lagged total assets (AT)
<i>AudQaul</i>	=	Auditor quality, equal to 1 if the firm has a Big N auditor, 0 otherwise.
<i>TakeOver</i>	=	Takeover threat, equal to 1 if the firm has a G-INDEX less than or equal to 13, 0 otherwise.

Appendix III. List of Tax Havens

Andorra	Lebanon
Anguilla	Liberia
Antigua and Barbuda	Liechtenstein
Aruba	Luxembourg
Bahamas	Macao
Bahrain	Macau
Barbados	Maldives
Belize	Malta
Bermuda	Marshall Islands
Botswana	Mauritius
British Virgin Islands	Monaco
Brunei Darussalam	Montserrat
Cape Verde	Nauru
Cayman Islands	Netherlands Antilles
Cook Islands	Niue
Costa Rica	Palau
Cyprus	Panama
Dominica	Samoa
Gibraltar	San Marino
Grenada	Seychelles
Guernsey and Alderney	Singapore
Hong Kong	St. Lucia
Ireland	St. Vincent and the Grenadines
Isle of Man	Switzerland
Jersey	U.S. Virgin Islands
Kitts and Nevis	Uruguay
Latvia	Vanuatu

The list identifies a country or area as a tax haven if it is listed as a tax haven in at least three of the four following sources: (1) Organization for Economic Co-Operation and Development, (2) the U.S. Stop Tax Havens Abuse Act, (3) the International Monetary Fund, and (4) the Tax Research Organization.

Figure 1. Geographic Earnings Disclosure and Effective Tax Rate

This figure shows the effective tax rate (*ETR*) for disclosers and non-disclosers of geographic earnings under the provisions of SFAS 131. In December 1998, SFAS 131 went into effect. In December 2004, Schedule M-3 went into effect.

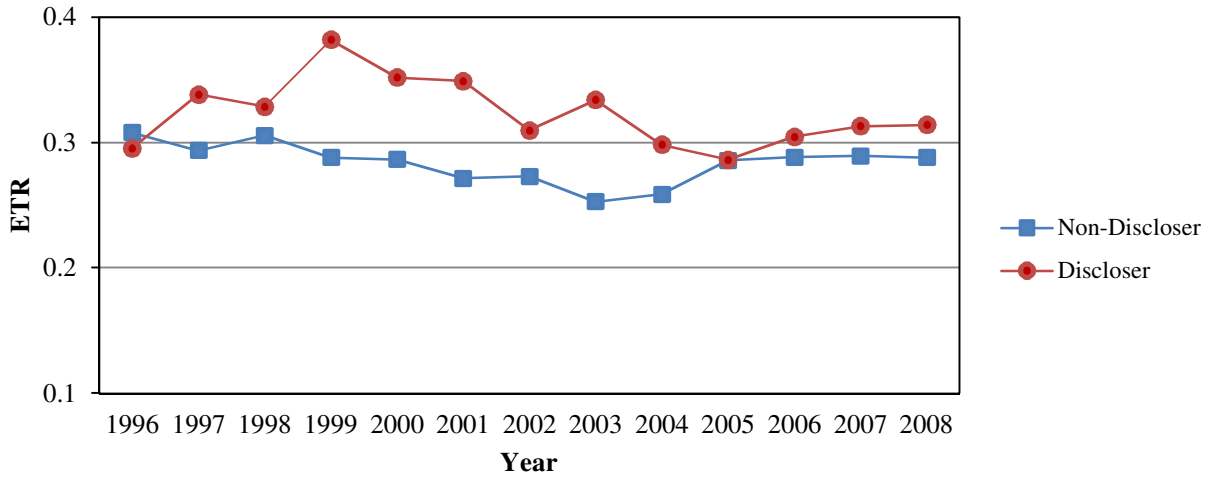


Figure 2. Geographic Earnings Disclosure and Foreign Effective Tax Rate

This figure shows the foreign effective tax rate (*ETR_For*) for disclosers and non-disclosers of geographic earnings. In December 1998, SFAS 131 went into effect. In December 2004, Schedule M-3 went into effect.

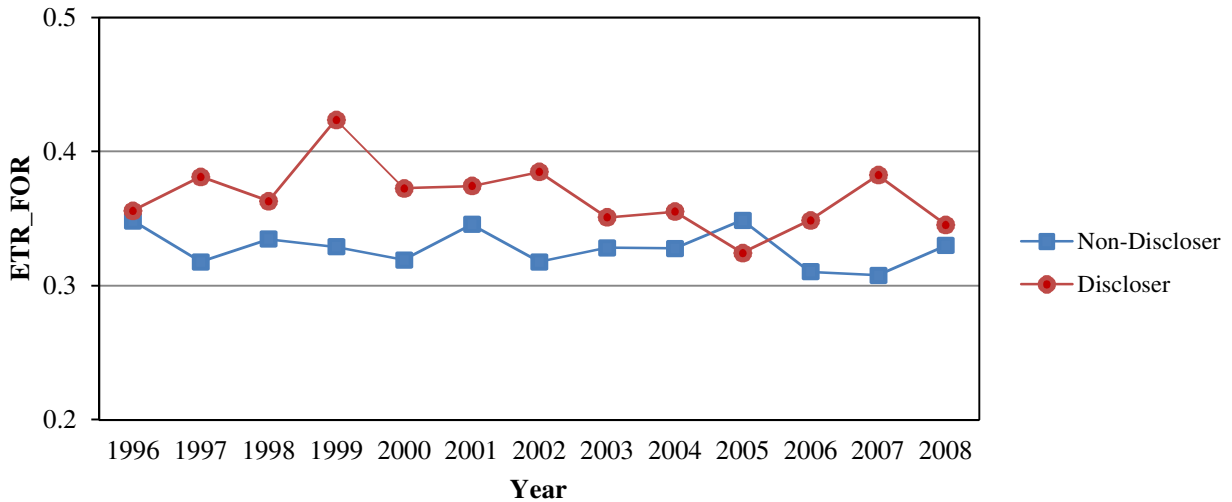


Figure 3. Geographic Earnings Disclosure and Domestic Effective Tax Rate

This figure shows the domestic effective tax rate (*ETR_Dom*) for the disclosers and non-disclosers of geographic earnings. In December 1998, SFAS 131 went into effect. In December 2004, Schedule M-3 went into effect.

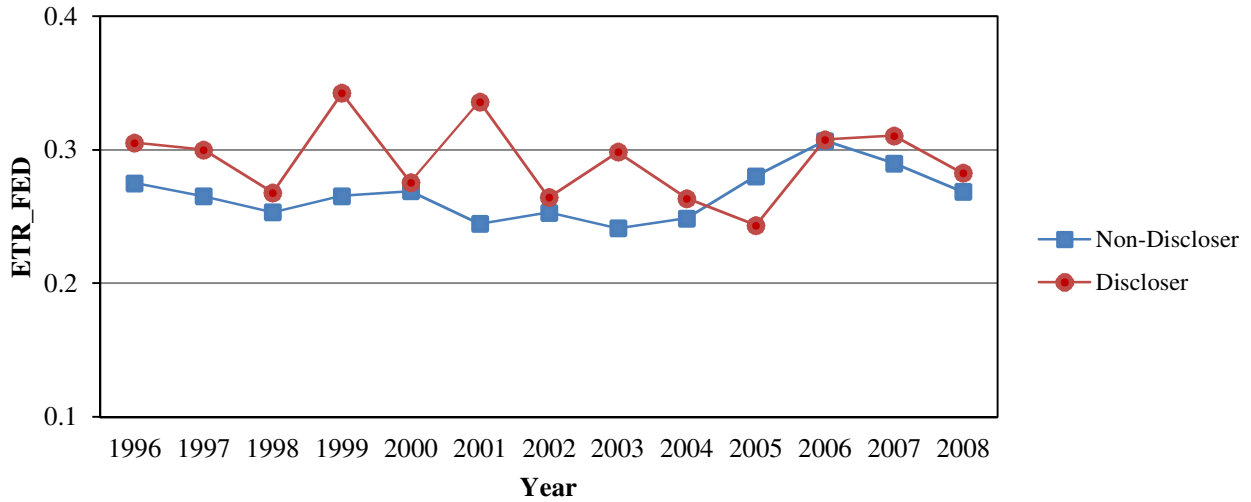


Figure 4. Geographic Earnings Disclosure and Cash Effective Tax Rate

This figure shows the cash effective tax rate (*ETR_Cash*) for the disclosers and non-disclosers of geographic earnings. In December 1998, SFAS 131 went into effect. In December 2004, Schedule M-3 went into effect.

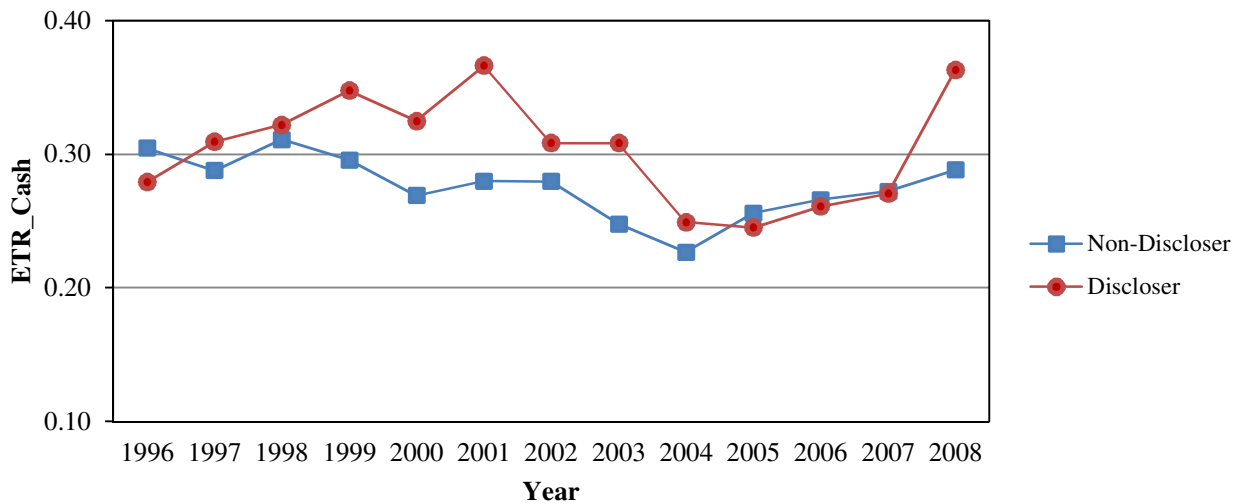


Table 1. Descriptive Statistics*Panel A: Pre-SFAS 131 Period (N=1,861)*

Variable	<u>Non-Disclosers</u>			<u>Disclosers</u>		
	N	Mean	Std.Dev.	N	Mean	Std.Dev.
<i>ETR</i>	1,607	0.28	0.19	254	0.30	0.17
<i>NoDisc</i>	1,607	1.00	0.00	254	0.00	0.00
<i>LnMV</i>	1,607	5.65	2.24	254	6.18	2.12
<i>Lev</i>	1,607	0.58	0.35	254	0.58	0.31
<i>MB</i>	1,607	2.88	3.71	254	3.84	4.90
<i>NOL</i>	1,607	0.36	0.48	254	0.38	0.49
ΔNOL	1,607	0.17	0.38	254	0.25	0.44
<i>NI</i>	1,607	0.03	0.17	254	0.06	0.11
<i>FI</i>	1,607	0.02	0.06	254	0.04	0.06
<i>PPE</i>	1,607	0.05	0.08	254	0.06	0.08
<i>RD</i>	1,607	0.00	0.00	254	0.00	0.00
<i>EqInc</i>	1,607	0.33	0.25	254	0.28	0.23
<i>Intang</i>	1,607	0.11	0.19	254	0.07	0.12

Panel B: Post-SFAS 131 Period (N=5,332)

Variable	<u>Non-Disclosers</u>			<u>Disclosers</u>		
	N	Mean	Std.Dev.	N	Mean	Std.Dev.
<i>ETR</i>	4,459	0.25	0.19	873	0.30	0.19
<i>NoDisc</i>	4,459	1.00	0.00	873	0.00	0.00
<i>LnMV</i>	4,459	5.94	2.38	873	6.56	2.37
<i>Lev</i>	4,459	0.57	0.35	873	0.57	0.34
<i>MB</i>	4,459	2.82	3.95	873	3.14	4.05
<i>NOL</i>	4,459	0.37	0.48	873	0.39	0.49
ΔNOL	4,459	0.18	0.39	873	0.18	0.39
<i>NI</i>	4,459	0.01	0.20	873	0.04	0.15
<i>FI</i>	4,459	0.02	0.07	873	0.04	0.07
<i>PPE</i>	4,459	0.05	0.08	873	0.05	0.07
<i>RD</i>	4,459	0.00	0.01	873	0.00	0.00
<i>EqInc</i>	4,459	0.27	0.23	873	0.25	0.22
<i>Intang</i>	4,459	0.17	0.21	873	0.15	0.52

(Table 1 continued on next page)

Table 1. Descriptive Statistics

Panel C: Post-M-3 Period (n=5,453)

Variable	<u>Non-Disclosers</u>			<u>Disclosers</u>		
	N	Mean	Std.Dev.	N	Mean	Std.Dev.
<i>ETR</i>	4,834	0.26	0.19	619	0.28	0.17
<i>NoDisc</i>	4,834	1.00	0.00	619	0.00	0.00
<i>LnMV</i>	4,834	6.72	2.06	619	7.41	2.09
<i>Lev</i>	4,834	0.52	0.32	619	0.52	0.27
<i>MB</i>	4,834	2.73	3.56	619	3.11	2.69
<i>NOL</i>	4,834	0.33	0.47	619	0.39	0.49
ΔNOL	4,834	0.29	0.45	619	0.28	0.45
<i>NI</i>	4,834	0.05	0.15	619	0.07	0.13
<i>FI</i>	4,834	0.03	0.07	619	0.06	0.06
<i>PPE</i>	4,834	0.05	0.08	619	0.04	0.06
<i>RD</i>	4,834	0.00	0.00	619	0.00	0.00
<i>EqInc</i>	4,834	0.23	0.23	619	0.22	0.20
<i>Intang</i>	4,834	0.22	0.28	619	0.20	0.23

This table shows the descriptive statistics. The sample period is January 1996 to December 2008. Panel A uses a subsample of observations from the pre-SFAS 131 period (January 1996 to November 1998); Panel B uses a subsample of observations from the post-SFAS 131 (December 1998 to November 2004); Panel C uses a subsample of observations from the pre-SFAS 131 period (December 2004 to December 2008). In both panels, the first column reports results for firms not disclosing geographic earnings in the post-SFAS 131 period; the second column uses a subsample of firms disclosing geographic earnings. All data are from *Compustat Industrial* database. Variable definitions are provided in Appendix II.

Table 2. Correlation Matrix

	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>
<i>1.ETR</i>	1.00	-0.06	0.18	0.02	-0.01	0.01	-0.05	0.20	0.13	-0.13	0.01	-0.03	0.07
		<.01	<.01	0.01	0.25	0.45	<.01	<.01	<.01	<.01	0.25	0.00	<.01
<i>2.NoDisc</i>	-0.07	1.00	-0.08	-0.01	-0.03	-0.04	-0.00	-0.04	-0.12	0.02	0.01	0.01	0.04
	<.01		<.01	0.36	0.00	0.00	0.75	<.01	<.01	0.07	0.96	0.22	0.00
<i>3.LnMV</i>	0.24	-0.07	1.00	0.09	0.26	-0.06	0.02	0.37	0.32	-0.14	0.15	0.12	0.16
	<.01	<.01		<.01	<.01	<.01	0.01	<.01	<.01	<.01	<.01	<.01	<.01
<i>4.Lev</i>	0.05	-0.02	0.19	1.00	0.03	-0.02	-0.02	-0.07	0.00	-0.11	0.08	0.21	0.26
	<.01	0.09	<.01		0.00	0.05	0.03	<.01	0.85	<.01	<.01	<.01	<.01
<i>5.MB</i>	0.08	-0.04	0.46	0.08	1.00	-0.01	0.01	0.13	0.11	0.16	-0.01	-0.03	0.00
	<.01	<.01	<.01	<.01		0.28	0.22	<.01	<.01	<.01	0.42	0.00	0.70
<i>6.NOL</i>	-0.02	-0.04	-0.06	-0.02	-0.02	1.00	-0.41	-0.05	-0.01	0.03	-0.01	0.02	-0.01
	0.05	0.00	<.01	0.01	0.01		<.01	<.01	0.11	0.00	0.47	0.08	0.11
<i>7.ΔNOL</i>	-0.05	-0.00	0.02	-0.01	0.02	-0.41	1.00	0.08	0.05	0.01	0.00	-0.04	0.02
	<.01	0.75	0.01	0.30	0.02	<.01		<.01	<.01	0.32	0.78	<.01	0.10
<i>8.NI</i>	0.16	-0.03	0.36	-0.04	0.43	-0.06	0.08	1.00	0.56	-0.32	0.09	0.09	0.02
	<.01	0.00	<.01	<.01	<.01	<.01	<.01		<.01	<.01	<.01	<.01	0.09
<i>9.FI</i>	0.21	-0.14	0.38	0.07	0.26	-0.02	0.05	0.49	1.00	-0.17	0.09	0.07	0.01
	<.01	<.01	<.01	<.01	<.01	0.02	<.01	<.01		<.01	<.01	<.01	0.62
<i>10.PPE</i>	-0.10	-0.01	-0.05	-0.24	0.19	0.02	0.04	-0.02	0.01	1.00	-0.09	-0.27	-0.02
	<.01	0.57	<.01	<.01	<.01	0.04	<.01	0.04	0.16		<.01	<.01	0.03
<i>11.RD</i>	0.06	-0.01	0.23	0.17	0.02	0.01	0.01	0.07	0.13	-0.13	1.00	0.11	-0.01
	<.01	0.27	<.01	<.01	0.09	0.96	0.74	<.01	<.01	<.01		<.01	0.13
<i>12.EqInc</i>	0.05	-0.01	0.16	0.23	-0.01	0.01	-0.04	0.11	0.09	-0.29	0.16	1.00	-0.12
	<.01	0.74	<.01	<.01	0.49	0.42	<.01	<.01	<.01	<.01	<.01		<.01
<i>13.Intang</i>	0.16	0.05	0.29	0.22	0.09	-0.03	0.04	0.05	0.14	-0.02	0.05	-0.15	1.00
	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	

This table shows the correlations between the variables. Pearson Correlations are reported on the top right; Spearman Correlations on the bottom left. Variable definitions are provided in Appendix II. The two-sided p-values are bold.

Table 3. Effective Tax Rates and Geographic Earnings Disclosure

Variables	Dependent Variable = <i>ETR</i>		
	Pre-SFAS 131Period	Post-SFAS 131 Period	Post-M-3 Period
<i>NoDisc</i>	-0.005 (-0.32)	-0.043*** (-3.78)	-0.001 (-0.08)
<i>LnMV</i>	0.033*** (10.85)	0.022*** (9.55)	0.017*** (6.05)
<i>Lev</i>	-0.016 (-0.89)	0.006 (0.40)	-0.010 (-0.66)
<i>MB</i>	-0.002 (-1.06)	-0.004*** (-4.03)	-0.003*** (-3.07)
<i>NOL</i>	-0.017 (-1.36)	0.003 (0.41)	0.012 (1.25)
ΔNOL	-0.037*** (-2.81)	-0.013 (-1.48)	-0.033*** (-3.97)
<i>NI</i>	-0.001*** (-4.87)	-0.001*** (-3.45)	-0.001*** (-3.05)
<i>FI</i>	0.126 (1.21)	0.364*** (6.52)	0.161** (2.23)
<i>PPE</i>	-0.066** (-2.22)	-0.052** (-2.11)	-0.058* (-1.95)
<i>RD</i>	-0.045 (-0.39)	-0.375*** (-6.48)	-0.325*** (-4.79)
<i>EqInc</i>	-0.899* (-1.87)	0.198 (0.24)	-1.112 (-1.37)
<i>Intang</i>	0.107*** (3.00)	0.025 (1.42)	0.055*** (3.07)
Intercept	0.144*** (3.92)	0.206*** (5.93)	0.195*** (3.97)
R ²	0.1949	0.1158	0.0930
N	1,861	5,332	5,453

This table tests the relation between effective tax rate (*ETR*) and non-disclosure of geographic earnings in the financial reports (*NoDisc*). The first column uses observations from pre-SFAS 131 period (January 1996 to November 1998), the second column uses observations from post-SFAS 131 period (December 1998 to November 2004), and the third column uses observations from post-M-3 period (December 2004 to December 2008). Variable definitions are provided in Appendix II. All models include both year and industry fixed effects, and standard errors are clustered by firm. t-statistics are reported in parentheses. ***, ** and * refer to significance at the 0.01, 0.05 and 0.10 level (two-sided test), respectively.

Table 4. Foreign and Domestic Effective Tax Rates and Geographic Earnings Disclosure in the post-SFAS 131 period

Variables	Dependent Variable =	
	<i>ETR_For</i>	<i>ETR_Dom</i>
<i>NoDisc</i>	-0.045** (-2.44)	-0.017 (-0.96)
<i>LnMV</i>	0.028*** (7.44)	0.029*** (8.25)
<i>Lev</i>	0.048** (2.23)	-0.011 (-0.57)
<i>MB</i>	-0.003* (-1.67)	-0.004*** (-2.68)
<i>NOL</i>	0.013 (0.92)	-0.013 (-0.99)
ΔNOL	0.007 (0.42)	0.028 (1.58)
<i>NI</i>	-0.001*** (-4.39)	-0.001*** (-3.56)
<i>FI</i>	0.137* (1.70)	0.486*** (5.38)
<i>PPE</i>	-0.095** (-2.14)	-0.068 (-1.56)
<i>RD</i>	-0.349*** (-3.85)	-0.321*** (-4.24)
<i>EqInc</i>	1.169 (1.47)	1.417 (0.86)
<i>Intang</i>	-0.009 (-0.78)	-0.005 (-0.39)
Intercept	0.180*** (5.17)	0.201*** (3.49)
R ²	0.1226	0.1326
N	2,436	2,436

This table tests the relation between effective tax rates and non-disclosure of geographic earnings (*NoDisc*) in the post-SFAS 131 period (December 1998 to November 2004). The first column uses foreign effective tax rate (*ETR_For*) as the dependent variable, and the second column uses domestic effective tax rate (*ETR_Dom*) as the dependent variable. Variable definitions are provided in Appendix II. All models include both year and industry fixed effect, and standard errors are clustered by firm s. t-statistics are reported in parentheses. ***, ** and * refer to significance at the 0.01, 0.05 and 0.10 level (two-sided test), respectively.

Table 5. The Role of Monitoring in the post-SFAS 131 period

Dependent Variable = <i>ETR</i>						
Variables	Low Monitoring			High Monitoring		
	Low IRS Audit	Low <i>AudQual</i>	Low <i>TakeOver</i>	High IRS Audit	High <i>AudQual</i>	High <i>TakeOver</i>
<i>NoDisc</i>	-0.046*** (-3.96)	-0.064** (-2.15)	-0.050*** (-3.87)	-0.009 (-0.23)	-0.043*** (-3.63)	-0.021 (-0.96)
<i>LnMV</i>	0.022*** (9.61)	0.024*** (4.33)	0.024*** (9.41)	0.012 (1.33)	0.017*** (6.50)	-0.000 (-0.01)
<i>Lev</i>	-0.001 (-0.01)	-0.035 (-1.58)	0.003 (0.18)	0.098 (1.52)	0.020 (1.21)	0.031 (0.79)
<i>MB</i>	-0.003*** (-3.82)	-0.003* (-1.72)	-0.004*** (-3.56)	-0.007 (-1.31)	-0.003*** (-3.58)	0.001 (0.40)
<i>NOL</i>	0.004 (0.47)	0.008 (0.33)	0.010 (0.98)	-0.003 (-0.10)	0.003 (0.37)	-0.028* (-1.80)
ΔNOL	-0.011 (-1.17)	-0.042* (-1.77)	-0.018* (-1.74)	-0.036 (-1.23)	-0.011 (-1.11)	-0.001 (-0.02)
<i>NI</i>	-0.001*** (-3.19)	-0.001 (-0.95)	-0.000*** (-3.24)	-0.001* (-1.68)	-0.001*** (-3.05)	-0.000 (-0.40)
<i>FI</i>	0.354*** (6.27)	0.362*** (3.68)	0.386*** (6.36)	0.261 (0.80)	0.361*** (5.66)	0.142 (1.01)
<i>PPE</i>	-0.038 (-1.47)	0.001 (0.01)	-0.040 (-1.42)	-0.159** (-2.19)	-0.066** (-2.53)	-0.117** (-2.40)
<i>RD</i>	-0.370*** (-6.38)	-0.328*** (-3.51)	-0.396*** (-6.37)	-1.189 (-1.48)	-0.378*** (-5.61)	0.007 (0.03)
<i>EqInc</i>	-0.022 (-0.03)	-0.968 (-0.60)	-0.203 (-0.24)	1.074 (1.09)	0.079 (0.09)	1.359 (0.90)
<i>Intang</i>	0.025 (1.39)	0.005 (0.75)	0.030 (1.37)	0.050 (0.65)	0.050** (2.23)	-0.031 (-0.88)
Intercept	0.198*** (5.65)	0.166** (2.24)	0.195*** (5.05)	0.226*** (3.25)	0.246*** (6.01)	0.304*** (6.16)
R ²	0.1226	0.3412	0.1350	0.1404	0.1459	0.0908
N	4,808	666	3,841	524	4,666	1,491

This table tests whether monitoring affects the relation between effective tax rates (*ETR*) and non-disclosure of geographic earnings (*NoDisc*). The tests use observations from the post-SFAS 131 period (December 1998 to November 2004). Monitoring is defined as the probability of an IRS audit, auditor quality (*AudQual*), and G-Index (*GIndex*). A high probability of IRS audit includes firms with total assets greater than \$250 million and in the following industries: Natural Resources, Construction, Heavy Manufacturing and Transportation. A low probability of IRS audit includes all other firms. High (low) *AudQual* includes observations with (without) Big N auditors. High *TakeOver* includes observations with *GIndex* less than or equal to thirteen, which

are firms facing high takeover threat. *GIndex* refers to a firm's average Gompers Index during the post-SFAS 131 period. Low *TakeOver* sample includes all other firms. Variable definitions are provided in Appendix II. All models include both year and industry fixed effects, and standard errors are clustered by firm. t-statistics are reported in parentheses. ***, ** and * refer to significance at the 0.01, 0.05 and 0.10 level (two-sided test), respectively.

Table 6. The Role of Material Operations in Tax Havens in the post-SFAS 131 period

Dependent Variable = <i>ETR</i>		
Variables	One or More Tax Haven Segments	No Tax Haven Segments
<i>NoDisc</i>	-0.023 (-0.74)	-0.040*** (-3.49)
<i>LnMV</i>	0.015* (1.80)	0.023*** (10.22)
<i>Lev</i>	0.011 (0.16)	0.002 (0.16)
<i>MB</i>	-0.011*** (-2.94)	-0.003*** (-3.97)
<i>NOL</i>	0.015 (0.45)	-0.001 (-0.16)
ΔNOL	-0.013 (-0.42)	-0.010 (-1.07)
<i>NI</i>	-0.001 (-0.81)	-0.001*** (-3.60)
<i>FI</i>	0.293** (2.22)	0.343*** (6.72)
<i>PPE</i>	-0.058 (-0.47)	-0.045* (-1.94)
<i>RD</i>	-0.026 (-0.11)	-0.376*** (-6.66)
<i>EqInc</i>	0.336 (0.12)	0.370 (0.49)
<i>Intang</i>	-0.066 (-0.90)	0.029 (1.58)
Intercept	0.268*** (2.67)	0.177*** (5.07)
R ²	0.2458	0.1290
N	372	4,960

This table tests whether the relation between effective tax rates (*ETR*) and non-disclosure of geographic earnings (*NoDisc*) are different when firms disclose information about tax haven operations in their segment reports. The test uses observations from the post-SFAS 131 period (December 1998 to November 2004). The first column uses observations that disclose at least one tax haven as a segment; the second column uses the other observations. Variable definitions are provided in Appendix II. All models include both year and industry fixed effects, and standard errors are clustered by firm. t-statistics are reported in parentheses. ***, ** and * refer to significance at the 0.01, 0.05 and 0.10 level (two-sided test), respectively.

Table 7. Cash Effective Tax Rates as an Alternative Measure of Tax Avoidance

Dependent Variable = *ETR_Cash*

Variables	Pre-SFAS 131Period	Post-SFAS 131 Period	Post-M-3 Period
<i>NoDisc</i>	-0.001 (-0.05)	-0.047*** (-3.84)	-0.008 (-0.62)
<i>LnMV</i>	0.020*** (4.81)	0.008*** (3.30)	0.009*** (2.72)
<i>Lev</i>	-0.027 (-1.19)	-0.041*** (-2.80)	0.001 (0.08)
<i>MB</i>	-0.005** (-2.30)	-0.004*** (-3.07)	-0.006*** (-4.38)
<i>NOL</i>	-0.013 (-0.92)	-0.001 (-0.04)	-0.004 (-0.40)
ΔNOL	-0.044*** (-2.88)	-0.031*** (-3.11)	-0.056*** (-6.29)
<i>NI</i>	-0.001*** (-2.61)	-0.001*** (-2.75)	-0.001 (-1.61)
<i>FI</i>	-0.305** (-2.35)	0.005 (0.06)	-0.037 (-0.46)
<i>PPE</i>	-0.056 (-1.48)	-0.029 (-1.03)	-0.068** (-2.19)
<i>RD</i>	-0.014 (-0.11)	-0.395*** (-5.13)	-0.469*** (-6.31)
<i>EqInc</i>	-1.065 (-1.01)	0.932 (1.19)	-1.109 (-1.20)
<i>Intang</i>	0.057* (1.67)	0.057*** (2.68)	0.023 (1.14)
Intercept	0.287*** (4.94)	0.310*** (6.46)	0.284*** (5.59)
R ²	0.1118	0.0696	0.0826
N	1,654	4,376	4,620

This table tests the relation between cash tax rates (*ETR_Cash*) and non-disclosure of geographic earnings (*NoDisc*). The first column uses observations from the pre-SFAS 131 period (January 1996 to November 1998), the second column uses observations from the post-SFAS 131 period (December 1998 to November 2004), and the third column uses observations from the post-M-3 period (December 2004 to December 2008). Variable definitions are provided in Appendix II. All models include both year and industry fixed effects, and standard errors are clustered by firm. t-statistics are reported in parentheses. ***, ** and * refer to significance at the 0.01, 0.05 and 0.10 level (two-sided test), respectively.