

# *Do Foreign Multinationals' Tax Incentives Influence Their U.S. Income Reporting and Debt Policy?*

**Abstract** - Using a matched sample of financial data on foreign multinationals and confidential income tax return data on U.S. foreign-controlled corporations (FCCs) during 1987-1996, we examine whether the tax incentives of foreign multinationals influence their U.S. tax reporting. We find that foreign multinationals with relatively low average foreign tax rates report less taxable income and use more debt in their FCCs than those with relatively high average foreign tax rates. Our findings provide insights regarding the complex reporting behavior of FCCs and have implications for U.S. tax policy.

## INTRODUCTION

As part of the increased globalization of companies, foreign multinationals have significantly expanded their operations in the United States. Hobbs (2001) reports that in 1998, foreign-controlled U.S. corporations (FCCs) generated \$1.9 trillion of total receipts and reported \$3.9 trillion of total assets on income tax returns filed with the Internal Revenue Service.<sup>1</sup> Despite their strong presence, the tax-reporting behavior of FCCs is not well understood.

Concerns regarding the low profits of FCCs have prompted legislative proposals to limit potential income shifting by foreign multinationals operating in the United States.<sup>2</sup> Some of these concerns appear to be borne out by empirical evidence. Comparisons of profit margins generally show much lower profit margins for FCCs versus U.S.-owned corporations (e.g., Grubert, 1999). Further, Grubert, Goodspeed, and Swenson (1993) show that 37 percent of the FCCs in their sample reported near-zero income on a persistent basis.

<sup>1</sup> As Hobbs (2001) reports, the total receipts of FCCs in 1998 represent a 95.5 percent increase (using current dollars) since 1989. The growth of FCCs can also be measured from 1971 when FCCs only accounted for 1.3 percent of corporate assets and 2.1 percent of receipts.

<sup>2</sup> For example, Representative Gephardt and Senator Dorgan proposed legislation in 1994 to limit potential income shifting within foreign-controlled U.S. corporations (The Foreign Tax Compliance Act of 1994, H.R. 4860; S. 2342). Ongoing concerns regarding the tax reporting of FCCs have also been expressed in Ways and Means Oversight Subcommittee hearings (e.g., Sullivan, 1996).

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Despite these reporting trends, there has been little conclusive evidence of widespread aggressive reporting. Grubert et al. (1993) also find that economic factors explain, at least in part, the low profits of FCCs. In addition, Grubert (1999) finds that companies with foreign ownership between 25 and 50 percent have low profitability similar to 100 percent owned companies. As Grubert explains, transfer price manipulation is less likely to be an explanation of the low profitability of these non-controlled companies due to resistance by other shareholders.<sup>3</sup> He concludes that systematic differences between foreign-controlled and U.S.-controlled companies, rather than income shifting, potentially explain much of the difference in their profit margins.

We examine the taxable income reporting of FCCs using a matched sample of financial data on foreign multinationals and confidential U.S. income tax return data on their U.S. subsidiaries (FCCs) during 1987–1996. Specifically, we test whether the foreign multinationals' worldwide tax incentives influence their U.S. taxable income reporting. By comparing taxable income levels across FCCs, we control for any factors that are unique to foreign-controlled companies. We also control for other explanations of U.S. taxable income reporting, including the worldwide profitability of the global entity and the financial condition of the FCC.

Our results are consistent with foreign multinationals following tax-motivated U.S. income reporting strategies. We find a significant relation between foreign multinationals' reported U.S. taxable income (scaled by either total U.S. assets or sales) and their worldwide tax positions.<sup>4</sup> This

finding is robust to a number of sensitivity tests, including by-country regressions for the two countries most frequently represented in our sample (Japan and Great Britain).

Our income-reporting results provide insights regarding the complex reporting behavior of large U.S. subsidiaries of foreign multinationals. Consistent with perceptions of aggressive tax reporting, we find that 34 percent of the FCCs in our sample report zero taxable income. However, our sample also contains FCCs reporting high levels of taxable income. Moreover, we find the taxable income levels of FCCs vary significantly with the worldwide tax incentives of their foreign parent companies and economic determinants. These findings suggest that policymakers and researchers alike should not view FCCs as a homogenous group with uniform income-reporting patterns and tax incentives.

Slemrod's (2001) model of behavioral tax responses suggests that multinationals can use financing policies as one method to achieve their income reporting objectives (i.e., by locating interest deductions in higher-tax rate countries). We explore this possibility by estimating a model of debt financing that tests whether foreign multinationals' tax incentives influence their U.S. debt policy. We find that foreign multinationals with relatively low foreign tax rates use more debt in their FCCs than those with relatively high foreign tax rates. This relation holds both for a measure of tax incentives based on firm-specific average foreign taxes (discussed more below) and with a simple bilateral comparison of statutory corporate tax rates in the U.S. versus the foreign multinationals'

<sup>3</sup> Collins, Kemsley, and Shackelford (1997) also find no conclusive evidence of transfer price manipulation when they compare foreign-controlled U.S. corporations to other domestic companies. Similarly, Blouin, Collins, and Shackelford (2001) find no evidence to support claims that foreign acquisitions result in disproportionate tax reduction compared with domestic acquisitions.

<sup>4</sup> Similar to Collins, Kemsley, and Lang's (1998) measure of worldwide tax incentives for U.S. multinationals, our primary income measure compares the U.S. corporate statutory tax rates to firm-specific average foreign tax rates.

home country. Our empirical results build on recent studies of tax-motivated debt placements by U.S. multinationals (e.g., Newberry and Dhaliwal, 2001; Altshuler and Grubert, 2002) and provide additional evidence regarding foreign multinationals' debt policy.

### INCOME REPORTING INCENTIVES

As companies operate globally, they face incentives to exploit variations in corporate tax rates between countries. Multinational firms benefit from reporting more income in low-tax rate jurisdictions until the marginal tax savings equals the incremental cost. Although the concept that firms can benefit by paying taxes at a lower tax rate is intuitive, there are costs associated with following an income-reporting strategy based solely on tax incentives. Location decisions require multinationals to consider factors such as political stability, trade restrictions, workforce quality, available infrastructure, and pretax rates of returns.<sup>5</sup> Multinationals also face costs associated with using debt policy or intra-firm transfer pricing to shift income between countries. The tax benefits from placing debt in high-tax rate jurisdictions can be offset by transaction costs, tax examination scrutiny, and the application of tax laws that restrict interest deductions based on thin-capitalization criteria.<sup>6</sup> Similarly, tax-motivated trans-

fer prices are subject to scrutiny by tax authorities and may lead to operational inefficiencies.<sup>7</sup>

There is some evidence that U.S. multinationals respond to tax incentives in their U.S. versus foreign income reporting, despite the potential costs of following a tax-motivated reporting strategy.<sup>8</sup> However, the examination of foreign multinationals' U.S. tax-reporting incentives has proven to be a challenging area of research with inconclusive empirical results.<sup>9</sup> We focus on the foreign multinational piece of the income-reporting puzzle using a matched sample of confidential U.S. tax return data for FCCs and financial data on the foreign parent corporation. We draw inferences regarding foreign multinationals' income reporting strategies by testing whether their worldwide tax incentives explain cross-sectional variations in the taxable income reported by their U.S. subsidiaries.

### DEBT POLICY INCENTIVES

Multinationals can respond to tax incentives by locating interest deductions in higher-tax rate countries. Survey evidence suggests that multinationals locate individual debt offerings in the most advantageous way, with their consolidated debt ratios providing an overall constraint (Shapiro, 1988; Lessard and Shapiro, 1988). Newberry and Dhaliwal (2001) find that

<sup>5</sup> As Scholes et al. (2002) discuss, firms in countries with low tax rates can face lower pretax rates of return (implicit taxes) as increased competition drives down pretax margins.

<sup>6</sup> In the United States, 'earnings stripping' rules under Internal Revenue Code section 163(f) were introduced in 1989 for this purpose. We do not have sufficiently detailed information to conduct a systematic test of the potential impact of these rules. Instead, we include year variables as a rough control for the introduction and subsequent modifications of these rules.

<sup>7</sup> Ernst & Young's (1999) survey of multinationals in 19 countries found that most multinationals had been subject to transfer pricing tax audits, and that 75 percent believed a further audit was likely in the next two years.

<sup>8</sup> Accounting studies typically use data on U.S. multinationals' financial income reporting patterns to draw inferences regarding their income-shifting activities. For example, Harris et al. (1993) find that the U.S. tax liabilities of manufacturing firms relate to whether they have foreign subsidiaries in low or high tax-rate countries. Harris (1993), Klassen, Lang, and Wolfson (1993), and Collins, Kemsley, and Lang (1998) find evidence of income shifting into the U.S. during periods of relatively low U.S. tax rates.

<sup>9</sup> For example, Grubert, Goodspeed and Swenson (1993) documented a persistence of FCC taxable income around zero suggestive of income shifting, but Collins, Kemsley, and Shackelford (1997) were unable to find supporting evidence of transfer price manipulations by FCCs.

U.S. multinationals' tax incentives (their foreign tax credit limitation positions and taxpaying status) influence whether they locate interest deductions on international bond offerings in the U.S. parent or a foreign subsidiary. Additionally, Altshuler and Grubert (2002) show that the controlled foreign corporations (CFCs) of U.S. multinationals located in high-tax rate countries have higher debt-to-asset ratios than CFCs located in low-tax rate countries. We build on prior studies of U.S. multinationals by investigating whether the debt levels of foreign corporations' U.S. subsidiaries are positively related to the difference between U.S. statutory rates and their average foreign tax rates.

## SAMPLE

Our sample includes FCCs in the Coordinated Industry Cases (CIC) of the Internal Revenue Service during 1987–1996. We obtain the U.S. tax returns (Form 1120) of these FCCs under a data non-disclosure agreement. Corporations are included in the CIC population each year based on a point system (described in the *Internal Revenue Manual*, exhibit 4.3.12.1-1) that measures the size and complexity of the U.S. corporate income tax return. As a result of this selection process, the cor-

porations in our sample are the largest FCCs with assets that generally exceed \$500 million. Accordingly, caution should be exercised in generalizing our results to small U.S. corporations with foreign ownership.<sup>10</sup>

Beginning with a list of 292 U.S. companies identified by the Internal Revenue Service as having significant foreign control, we use directories of corporate affiliations to identify whether the companies are subsidiaries of foreign corporations. We obtain 1,372 firm-year observations over the period 1987–1996 when we match the identified foreign parents to the *Global Vantage* industrial database (which excludes financial institutions) for international companies. We then eliminate 328 observations where the U.S. subsidiary (FCC) is in the financial services industry and 33 observations where the foreign parent does not report a consolidated financial statement on *Global Vantage*.<sup>11</sup> We also eliminate 119 observations where the consolidated financial statements reflect worldwide losses, negative current income taxes, or average effective tax rates greater than or equal to one (i.e., current income taxes equal or exceed pretax income). These latter criteria serve the purpose of eliminating observations where the foreign multinationals are

<sup>10</sup> In a representative year (1995), our sample of foreign-controlled corporations report total assets of \$385 billion and U.S. tax payments of \$2.1 billion. These amounts are approximately 14–15 percent of the total reported amounts in 1995 for the population of all U.S. companies that are owned at least 50 percent either directly or indirectly by foreign persons (Nutter, 1998–1999).

<sup>11</sup> Although we rely primarily on the *Global Vantage* indicator of full consolidated reporting for this purpose, we conduct verification procedures of the indicator using hand-collected financial statements for the foreign multinationals. As Collins and Shackelford (1995, 2002) discuss, the *Global Vantage* database does not identify the multinational status of a company. Because we begin with a sample of known foreign multinationals, our primary concern is that the *Global Vantage* amounts reflect consolidated financial statements. Our sample includes 13 German and 43 Japanese companies. Consistent with Collins and Shackelford (2002), we find that foreign tax expense is reported on *Global Vantage* for only five of the German companies and only one of the Japanese companies. We selectively reviewed seven German (December 31 year-end) and ten Japanese (March 31 year-end) 1995 financial statements obtained from Thomson Research online. In all cases, the financial statements presented full global consolidation. To confirm that *Global Vantage* used the same consolidated financial statements, we compared the total assets reported on *Global Vantage* to the total assets on the consolidated financial statements and found no discrepancies. Further, we found that even though a separate foreign tax item was frequently not reported on *Global Vantage*, a detailed reading of the consolidated financial statements for our firms showed that there were foreign taxes paid. These procedures provide some assurance that *Global Vantage* reports consolidated financial statement amounts when they indicate that they are doing so.

generating significant losses in at least some locations.<sup>12</sup> Finally, we exclude 315 observations with insufficient data and 8 outlier observations. Our final sample consists of 569 firm-year observations for 126 FCCs. In our tests of U.S. debt ratios we lose three additional firm-year observations, resulting in a sample of 566 firm-year observations for 125 FCCs. Because we use pooled cross-sectional data, we report Huber-White *t*-statistics with adjusted standard errors that take into account multiple observations for the same firm.

Table 1 shows the sample distribution by foreign parent country and by year. Although 16 countries are included in the sample, foreign multinationals located in Canada, France, Germany, Great Britain, Japan, and the Netherlands comprise 88 percent of the firm-year observations. In addition, the manufacturing and trade industries comprise 92 percent of the sample (not reported in Table 1). Because the CIC is not designed to follow the same firms over time, a given FCC may be in the population of U.S. tax returns once during the sample period or several times

TABLE 1  
SAMPLE STATISTICS BY FOREIGN PARENT COUNTRY AND YEAR

Panel A — By Foreign Parent Country		
Country	Number of Firm-Year Observations <sup>a</sup>	Percent of Sample
Australia	7	1
Belgium	9	2
Canada	24	4
France	42	7
Germany	64	11
Great Britain	129	23
Japan	212	37
Netherlands	32	6
New Zealand	8	1
Sweden	16	3
Switzerland	17	3
All others	9	2
Totals	569	100
Panel B — By Year		
Year	Number of Firm-Year Observations <sup>a</sup>	Percent of Sample
1987	8	1
1988	25	5
1989	62	11
1990	81	14
1991	84	15
1992	67	12
1993	70	12
1994	71	12
1995	77	14
1996	24	4
Totals	569	100

<sup>a</sup>The sample includes foreign-controlled foreign corporations in the Coordinated Industry Cases of the Internal Revenue Service during 1987–1996, for which a foreign parent company could be identified on Global Vantage and a consolidated financial statement is reported. We exclude financial institutions, observations with missing data, and outlier observations. We also eliminate observations if the financial statements reflect worldwide losses, negative current income taxes, or average effective tax rates in excess of one. These criteria yield a sample of 569 firm-year observations for 126 firms.

<sup>12</sup> We find similar results when we tighten this restriction by eliminating observations with average rates at or above 0.70, or when we impose no effective tax rate restrictions and simply include a profitability control.

in noncontiguous years. Consistent with this, the year percentages show that our sample is not evenly distributed across years, with the smallest number of observations in 1987 and the largest number of observations in 1991. Our empirical models include a control for the tax year.

# EMPIRICAL MODEL OF U.S. INCOME REPORTING

We test for a relation between foreign multinationals' U.S. income reporting and their worldwide tax incentives using the following model:

$$\begin{aligned}
 [1] \quad & \text{FCC Taxable Income/Assets}_{i,t} \text{ or} \\
 & \text{FCC Taxable Income/Sales}_{i,t} \\
 & = b_0 + b_1 \text{ Ratediff}_{i,t} \text{ or Statutorydiff}_{i,t} \quad (-) \\
 & + b_2 \text{ WWintang}_{i,t} + b_3 \text{ WWroa}_{i,t} \quad (+) \\
 & + b_4 \text{ FCCZscore}_{i,t} + b_5 \text{ FCCage}_{i,t} \quad (+) \\
 & + b_6 \text{ Relsize}_{i,t} + b_{7-16} \text{ Year}_{i,t} \quad (?) \\
 & + b_{17-22} \text{ Industry}_{i,t} + b_{23-38} \text{ Country}_{i,t} + e_{i,t} \quad (?)
 \end{aligned}$$

Table 2 provides detailed definitions of the variables with references to specific line items on the U.S. tax return or *Global Vantage* database.

## Dependent Variable

*FCC Taxable Income/Assets* measures the U.S. income reported by foreign multinationals on the tax returns of their U.S. subsidiaries, scaled by total U.S. assets. We considered both assets and sales as possible scalars in constructing our income-reporting measure. We use total U.S. assets as our primary scalar for differences in income-generating capacity across FCCs because we expect that assets are

less endogenous to tax-induced transfer pricing (see Hines and Rice, 1994 for a discussion of this issue). Nevertheless, it is not clear how well the book value of assets corresponds to market values or whether assets are reported consistently on the tax returns of FCCs. Thus, we also estimate the model using *FCC Taxable Income/Sales*, scaling by total U.S. sales.

## Tax Incentives and Measurement Issues

We use two alternative measures of tax incentives in our model: *Ratediff* and *Statutorydiff*. *Ratediff* is the difference between the U.S. statutory corporate tax rate and the average foreign tax rate of the foreign multinational parent. We also estimate the model using *Statutorydiff*—the difference between the U.S. statutory corporate tax rate and the statutory corporate tax rate of the foreign multinational's home country. A negative sign on *Ratediff* or *Statutorydiff* is consistent with tax-motivated U.S. income reporting.

Developing an appropriate measure of tax incentives with available data is challenging. One option is to use a marginal tax rate that captures incentives for income-shifting activities at the margin (such as the location of a new debt offering). However, constructing a reliable marginal tax rate proxy is problematic because there are no public tax return data on the worldwide operations of the large foreign multinationals in our sample. One approach to estimating marginal tax rate incentives is to simply compare the statutory corporate tax rates of the U.S. versus the home country of the foreign parent. Although we use this measure (*Statutorydiff*) as one alternative, there are distinct disadvantages to this approach. In particular, a simple bilateral comparison of statutory tax rates does not take into account the foreign multinational's worldwide tax position and potential access to other low-tax rate countries (see, e.g., Grubert, Goodspeed, and Swenson



(1993) for a discussion of this issue). Statutory tax rates also do not capture any firm-specific variation in marginal rates within a country. For example, Gramlich, Limpaphayom, and Rhee (forthcoming, 2004) find that Japanese firms with a keiretsu affiliation can transfer income between group members to lower Japanese taxes relative to Japanese firms without keiretsu affiliation.

Another approach is to use average foreign tax rates to construct a measure of the foreign multinationals' worldwide tax incentives. This approach also has disadvantages in the sense that it is a broad tax position measure that does not lend itself to specific inferences regarding where the next dollar of income will be placed. Country-level average effective tax rates have been used in prior research, particularly in studies of location choice and worldwide capital investments (see, e.g., Hines and Rice, 1994; Altshuler, Grubert, and Newlon, 2001; Grubert and Mutti, 2000). In addition, Collins, Kemsley, and Lang (1998) use firm-specific average foreign tax rates in their study of U.S. multinationals' income-shifting incentives. Specifically, they compare the U.S. statutory corporate tax rate to U.S. multinationals' average foreign tax rates. As they discuss, average foreign tax rates in this setting provide a proxy (albeit an imperfect one) of the multinationals' worldwide blend of unobservable foreign tax rates. All else equal, global companies with operations in low-tax rate countries should report lower current tax payments on income generated outside of the United States than those operating primarily in high-tax rate countries. The concept of

measuring multinationals' worldwide tax incentives conditional on their current mix of operations and reporting is also consistent with Slemrod (2001). He suggests that firms' tax planning methods are interrelated because location choices that provide access to lower-tax rate countries also enhance the use of other income-shifting methods. Thus, foreign multinationals' worldwide tax positions (and average tax rates) likely reflect their mix of operations in high- versus low-tax rate countries, how aggressively they pursue tax minimization strategies, and their nontax costs of tax-motivated reporting.

Similar to Collins, Kemsley, and Lang (1998), our primary tax incentive variable (*Ratediff*) measures the difference between the U.S. statutory corporate tax rate and the average foreign tax rate of the foreign multinational parent (computed as current taxes divided by pretax income, excluding the U.S. subsidiary investment).<sup>13</sup> Because U.S. statutory rates are relatively constant during our sample period, *Ratediff* primarily captures variations in foreign multinationals' average foreign tax rates.<sup>14</sup>

We recognize that accounting differences across countries can affect firms' pretax book income (see, e.g., Collins and Shackelford (1995) for a detailed discussion of differences in accounting methods). Thus, we include a country indicator variable to control for country effects. Similar to Collins and Shackelford (1995, 2002), we also test a measure that considers common differences in accounting methods by using a modified pretax income amount (pretax book income plus depreciation and amortization expense,

<sup>13</sup> We find consistent results when we conduct a supplemental test using the foreign multinationals' total tax expense (current and deferred) as the numerator. Total taxes provide a noisier measure of tax incentives because deferred tax reporting requirements vary across countries.

<sup>14</sup> We use the U.S. statutory rate as a comparison for FCCs that report income or losses. The use of a pre-loss U.S. tax rate is consistent with evidence of persistent near-zero income reporting for FCCs documented by Grubert, Goodspeed, Swenson (1993). Because these losses could also relate to economic factors, we include controls in our models for the financial condition and age of the FCCs. Further, our results are robust to excluding FCCs with losses that exceed the objective of reporting near-zero income (defined as 2.5 percent of assets per Grubert, Goodspeed, and Swenson, 1993).

goodwill expense, pension expense, and research and development expenses). In spite of the likely noise we introduce by assuming missing codes are equivalent to a zero expense, we find consistent but weaker (at the 0.10 significance level) results. Finally, we estimate regressions by country and find within-country tax effects that provide some assurance that the full-model results are not driven by country differences.

### Control Variables

We control for other factors that could explain foreign multinationals' U.S. income reporting. In their study of Puerto Rican subsidiaries, Grubert and Slemrod (1998) find that multinationals with relatively large levels of intangible assets are more successful at adapting their income reporting to take advantage of tax incentives. Grubert (2003) subsequently finds that research and development (R&D) intangibles (but not marketing intangibles linked to advertising) affect U.S. multinationals' cross-jurisdictional income reporting. International financial data are not available to construct measures of specific types of intangible assets owned by the foreign multinationals in our sample. Instead, we include *WWintang*, measured as the ratio of worldwide intangible assets to worldwide total assets, as an overall control for total intangible assets with no sign prediction. In supplemental tests (reported in the results), we also include interaction terms for *Ratediff* and *WWintang*, *FCCage*, or *Relsize* to investigate the extent to which these variables may proxy for income-reporting flexibility.

We control for profitability using two measures: *WWroa* and *FCCZscore*. On average, we expect that foreign multinationals' U.S. income reporting increases with their overall profitability. Thus, we include *WWroa*, measured as worldwide pretax book income divided by worldwide total assets, as a control for the global entity's

return on assets. As part of the sample selection procedures, we also eliminate foreign multinationals with worldwide losses or large losses in some locations that drive the average effective tax rate above 100 percent. For the U.S. subsidiary (*FCC*), we include Altman's (1993) bankruptcy predictor score (*FCCZscore*) for private firms to control for financial distress. Altman's Zscore (defined in Table 2) takes into account the *FCC*'s working capital/total assets, retained earnings/total assets, earnings before interest and taxes/total assets, book equity to total liabilities, and sales/total assets, with a higher score reflecting a lower probability of financial distress. We predict positive signs on both *WWroa* and *FCCZscore*.

Other control variables include *FCCage* and *Relsize*. *FCCage* equals the number of years since the incorporation date shown on the tax return. Grubert (1999) finds that *FCC*s report higher levels of U.S. income over time, consistent with a maturation effect. Accordingly, we predict a positive relation between *FCCtaxinc* and *FCCage*. Following Grubert, Goodspeed, and Swenson (1993), we also include *Relsize* (total *FCC* sales divided by worldwide sales) as a general control for the relative size of the *FCC* with no sign prediction.

Finally, we include *Year*, *Industry*, and *Country* as fixed effects. *Year* provides a rough control for macroeconomic conditions that may vary by year. *Industry*, an indicator variable based on the Internal Revenue Service's industry classifications for the *FCC*s, provides a general control for industry effects. *Country* is an indicator variable for the home country of the foreign parent corporation. *Country* provides a general control for country-specific factors, such as differences in tax regimes, tax enforcement, and financial accounting methods. We use *Country* in our models that use the foreign multinationals' average foreign tax rate, *Ratediff*. We omit *Country* when we use the home-country statutory tax rate, *Statutorydiff*, due to collinearity.



## EMPIRICAL MODEL OF U.S. DEBT POLICY

We test whether foreign multinationals' U.S. debt policy is associated with their worldwide tax incentives using the following model:

[2]  $FCC\ Debt/Assets_{i,t}$  or

$$\begin{aligned} FCC\ Interest\ Expense/Sales_{i,t} &= b_0 \\ &+ b_1\ Ratediff_{i,t}\ \text{or}\ Statutorydiff_{i,t} \\ &\quad (+) \\ &+ b_2\ WWdebt_{i,t} + b_3\ FCCcapint_{i,t} \\ &\quad (+) \quad (+) \\ &+ b_4\ FCCadjZscore_{i,t} + b_5\ FCCsize_{i,t} \\ &\quad (?) \quad (+) \\ &+ b_6\ FCCage_{i,t} + b_{7-16}\ Year_{i,t} \\ &\quad (+) \quad (?) \\ &+ b_{17-22}\ Industry_{i,t} + b_{23-38}\ Country_{i,t} + e_{i,t} \\ &\quad (?) \quad (?) \end{aligned}$$

Table 2 provides detailed definitions of the variables with references to specific line items on the U.S. tax return or Global Vantage database.

### Dependent Variable and Tax Incentives

$FCC\ Debt/Assets$  measures the foreign multinationals' U.S. debt levels (as reported on the tax returns of their U.S. subsidiaries), scaled by total U.S. assets. This dependent variable provides a proxy of the foreign multinationals' U.S. debt ratios.  $FCC\ Interest\ Expense/Sales$ , measured as U.S. interest expense divided by total U.S. sales, provides a proxy of the foreign multinationals' debt tax shields. We use the same tax rate incentive variable ( $Ratediff$ ) as in our model of U.S. income reporting, i.e., the difference between the U.S. statutory corporate tax rate and the average foreign tax rate of the foreign multinational parent. Our test captures cross-sectional variations in the capital structure of FCCs as a function of the

worldwide tax incentives of the foreign multinational parent. We also estimate the model using  $Statutorydiff$ —the difference between the U.S. statutory corporate tax rate and the statutory corporate tax rate of the foreign multinational's home country. A positive sign on  $Ratediff$  or  $Statutorydiff$  is consistent with tax-motivated U.S. debt policy.

### Control Variables

We control for nontax explanations of firms' debt financing incentives and constraints.  $WWdebt$ , (worldwide debt divided by worldwide assets) provides a proxy of the foreign multinationals' reliance on debt financing worldwide. A control for  $WWdebt$  is consistent with the concept that worldwide debt-to-asset ratios provide information regarding overall debt capacity or an optimal debt ratio (see, e.g., Altshuler and Grubert's (2002) use of a worldwide debt-to-asset constraint in their model of multinational financial policy). We predict a positive sign on  $WWdebt$  because greater worldwide debt capacity should translate into fewer constraints on the foreign multinationals' use of debt financing.

We also include variables for characteristics of the FCC that could be associated with debt financing incentives. Including controls at the FCC level implicitly assumes that lenders impose debt costs based on the risk levels of the U.S. subsidiary. Prior studies provide contradictory arguments regarding lenders' risk assessments of subsidiary borrowings. Andrus, Dilworth, and O'Donnell (1990) and Levi (1996, p. 528) posit that the interest rates charged by lenders reflect the risk levels of the foreign subsidiary. However, other researchers (e.g., Lessard and Shapiro, 1988; Shapiro, 1988) argue that any attachment of risk to subsidiaries as separate borrowing entities is illusory unless parent companies are willing to allow their subsidiaries to default. Thus,

it is not clear whether the characteristics of subsidiary borrowers influence their capital structure to the same extent as freestanding corporations.

Capital structure theory suggests that debt usage is higher when firms have more assets-in-place (capital intensity) and is lower when firms face greater financial distress costs. *FCCcapint*, measured as the FCCs' net property, plant, and equipment divided by assets, controls for agency costs associated with underinvestment or debt securability. Consistent with Myers' (1977) argument that firms with more assets-in-place have lower debt costs, we predict a positive sign on *FCCcapint*.

*FCCadjZscore* controls for financial distress costs that decrease the attractiveness of debt as a financing choice. Following Mackie-Mason (1990) and Graham (1996), we use a modified Altman Zscore predictor (defined in Table 2) that excludes the equity to liabilities component in our test of U.S. debt ratios. If higher *FCCadjZscore* scores are associated with increased FCC debt capacity from lower distress costs, then *FCCadjZscore* should have a positive coefficient. However, because firms' cumulative debt levels are also potential indicators of the probability of financial distress, we could instead observe a negative coefficient. Thus, we make no sign prediction on *FCCadjZscore*.

*FCCsize* and *FCCage* control for the size and age of the FCCs. To the extent firm quality increases with size and maturity, capital structure theory predicts a positive relation between *FCCdebt* and *FCCsize* or *FCCage*. Consistent with this notion, prior empirical studies have found that larger firms use more debt (e.g., Graham, 1996; Newberry, 1998). We predict positive signs on *FCCsize* and *FCCage*.

Finally, we include *Year*, *Industry*, and *Country* as controls for fixed effects. *Industry* provides a general control for debt financing incentives that vary across industry. *Country*, an indicator variable for

the location of the foreign multinational parent, controls for home-country debt market conditions such as legal system origins (e.g., La Porta et al., 1997) and characteristics of local financial markets (e.g., Rajan and Zingales, 1995).

## RESULTS

### *Descriptive Statistics*

Table 2 reports descriptive statistics for the variables in our empirical models (Panel A) and for total measures of income, debt, and assets (Panel B). *FCC Taxable Income/Assets* averages 1.21 percent, which is somewhat lower than the 1.4 percent found by Hobbs (2001) for large, mature FCCs in 1998. The average U.S. tax payment is \$19.3 million (not reported in Table 2), and the average U.S. taxable income is \$67 million (*FCCincome*). Thus, our sample firms report positive U.S. income and pay U.S. taxes on average. However, our sample also contains a high percentage of FCC loss firms (approximately 34 percent) that report no taxable income.

The descriptive statistics for *Ratediff* and *Statutorydiff* show that at the sample means and medians the foreign multinationals' tax rates exceed the U.S. statutory corporate rate. Other descriptive statistics highlight that the firms in our sample are mature and large. The median age of the FCCs is 15 years, with average assets exceeding \$4 billion and median assets close to \$1.5 billion. The foreign multinational parent corporations are also large, with average assets of approximately \$18.6 billion and median assets of approximately \$9 billion.

### *U.S. Income Reporting Results*

Table 3 shows regression results for our tests of U.S. income reporting. We report four models that combine our two dependent measures of income reporting, *FCC Taxable Income/Assets* or *FCC Taxable*

TABLE 2  
DESCRIPTIVE STATISTICS FOR VARIABLES IN THE EMPIRICAL MODELS AND  
TOTAL MEASURES OF INCOME, DEBT, AND ASSETS

Panel A — Descriptive Statistics for Variables					
Variables <sup>a</sup>	n <sup>b</sup>	Mean	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile
FCC Taxable Income/ Assets (%)	569	1.206	-0.914	1.110	4.423
FCC Taxable Income/Sales (%)	566	1.502	-1.140	1.064	3.758
FCC Debt/ Assets (%)	566	43.771	28.820	43.252	59.881
FCC Interest Expense/Sales (%)	566	4.979	1.274	2.949	6.094
Ratediff (%)	569	-9.219	-21.514	-7.114	6.039
Statutorydiff (%)	554	-3.149	-5.000	-2.500	0
WWintang	569	0.038	0.000	0.002	0.038
WWroa	569	0.066	0.029	0.054	0.094
FCCZscore	569	1.853	0.998	1.597	2.535
FCCage	569	20.344	8.000	15.000	28.000
Relsize	569	0.226	0.098	0.177	0.289
WWdebratio	569	0.289	0.189	0.271	0.362
FCCcapint	569	0.195	0.074	0.140	0.279
FCCadjZscore	569	1.586	0.696	1.322	2.244
FCCsize	569	7.365	6.436	7.307	8.164
Panel B — Descriptive Statistics for Total Measures in Millions of U.S. Dollars (n = 569)					
Variables <sup>c</sup>	Mean	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile	
FCCincome	67	-15	15	62	
WWincome	863	201	462	941	
FCCdebt	1,640	203	684	1,800	
WWdebt	3,201	524	1,327	3,285	
FCCassets	4,080	624	1,490	3,510	
WWassets	18,615	3,641	8,967	22,648	

<sup>a</sup>The variables for the foreign-controlled U.S. corporations (designated with FCC) are computed using data from their U.S. Corporation Income Tax Returns (Form 1120). The variables for the foreign multinational parent corporations (designated with WW) are computed using data from *Global Vantage* (GV). *FCC Taxable Income/Assets* = FCC income before special deductions (Form 1120, p. 1, line 28) divided by FCC total assets (Form 1120, p. 4, Balance Sheet). *FCC Taxable Income/Sales* = FCC income before special deductions (Form 1120, p. 1, line 28) divided by FCC total sales (Form 1120, p.1). *FCC Debt/Assets* = FCC total debt divided by FCC total assets (Form 1120, p. 4, Balance Sheet). *FCC Interest Expense/Sales* = FCC interest expense divided by FCC sales (Form 1120, p.1). *Ratediff* = the difference between the U.S. statutory corporate tax rate and the average tax rate (excluding the U.S. subsidiary investment) of the foreign multinational parent, measured as [worldwide current income tax expense (GV#24) - FCC current income tax] / [worldwide pretax income (GV#21) - FCC pretax book income (Form 1120, Schedule M-1)]. *Statutorydiff* = the difference in the U.S. statutory corporate tax rate and the statutory corporate tax rate of the country where the foreign parent is located. *WWintang* = worldwide net intangible assets divided by worldwide total assets (GV#82/ #89). *WWroa* = worldwide pretax income divided by worldwide total assets (GV#21/ #89). *FCCZscore* = Altman's private-firm Zscore (1993) for the FCC (computed as 0.717 \* working capital/total assets + 0.847 \* retained earnings/total assets + 3.107 \* earnings before interest and taxes/total assets + 0.42 \* book value of equity/total liabilities + 0.998 \* sales/total assets), with higher values reflecting a lower probability of bankruptcy. *FCCage* = age of the FCC in years computed using the incorporation date reported on Form 1120. *Relsize* = FCC sales (Form 1120, p. 1, line 1) divided by worldwide sales (GV#1). *WWdebratio* = worldwide debt divided by worldwide total assets [(GV#94 + #106)/ #89]. *FCCcapint* = FCC net property, plant, and equipment divided by FCC total assets (Form 1120, p. 4, Balance Sheet). *FCCadjZscore* = Altman's Zscore (1993) for private firms computed for the FCC, with the equity to liabilities component excluded and higher values reflecting a lower probability of bankruptcy. *FCCsize* = natural log of total FCC assets (Form 1120, p. 4, Balance sheet).

<sup>b</sup>The sample includes foreign-controlled U.S. corporations in the Coordinated Industry Cases of the Internal Revenue Service during 1987-1996, for which a foreign parent company could be identified on the *Global Vantage* database and a consolidated financial statement is reported. We exclude financial institutions, observations with missing data, and outlier observations. We also eliminate observations if the consolidated financial statements reflect worldwide losses, negative current income taxes, or average effective tax rates in excess of one. These criteria yield a sample of 569 firm-year observations for 126 firms.

<sup>c</sup>*FCCincome* is FCC taxable income (Form 1120, p. 1, line 28) in millions of U.S. dollars. *WWincome* is worldwide pretax income (GV#21) in millions of U.S. dollars. *FCCdebt* = FCC debt (Form 1120, p. 4, Balance Sheet) in millions of U.S. dollars. *WWdebt* = worldwide debt (GV#106) in millions of U.S. dollars. *FCCassets* = FCC total assets (Form 1120, p. 4, Balance Sheet) in millions of U.S. dollars. *WWassets* = worldwide total assets (GV#89) in millions of U.S. dollars.

*Income/Sales*, with two measures of tax incentives, *Ratediff* or *Statutorydiff*. The income-reporting models yield R-squared statistics that range from 13.4 to 43.8 percent, with correlation diagnostics indicating no harmful collinearity.

Consistent with tax-motivated income reporting, we find that *Ratediff* is negatively related to either *FCC Taxable Income/Assets* or *FCC Taxable Income/Sales*. These results indicate that foreign multinationals with relatively low average foreign tax rates report less taxable income in their U.S. subsidiaries than those with relatively high average foreign tax rates. The coefficient on *Ratediff* (for the *FCC Taxable Income/Assets* model) also suggests that, *ceteris paribus*, a 10-percentage point change in relative tax rates would translate into an approximate \$8.4 billion aggregate change in reported U.S. taxable income for our sample firms over the period 1987–1996.<sup>15</sup>

We examine this negative relation more closely by conducting supplemental tests of foreign multinationals' tax incentives.<sup>16</sup> First, we substitute an indicator measure of tax incentives (for *Ratediff*) that equals one if the average foreign tax rate is less than the U.S. statutory corporate tax rate and zero otherwise. We find a negative relation between *FCC Taxable Income/Assets* and our indicator measure of income-shifting incentives (coefficient equals 0.009 with significance at the 0.05 level). This suggests foreign multinationals with favorable foreign tax rates (i.e., lower than the U.S. rate) report less U.S. taxable income than multinationals with high foreign tax rates. We then estimate our income-reporting model (with *Ratediff*) separately on these 'low' and 'high'

partitions to test for continuous incentive effects. We do not find a significant *Ratediff* result within the 'low' foreign tax rate partition, suggesting foreign multinationals with favorable foreign tax rates do not report increasingly lower U.S. taxable income as their foreign rates decline. However, we do find a negative sign on *Ratediff* (coefficient equals 0.053 with significance at the 0.01 level) within the 'high' foreign tax rate partition, indicating foreign multinationals report increasingly greater U.S. taxable income as their foreign rates increase.

In contrast to the *Ratediff* results, we do not find tax incentive effects when the foreign multinationals' tax incentives are measured using *Statutorydiff*—the difference between the U.S. statutory tax rate and the home-country statutory tax rate. However, this measure is disadvantaged in the sense that it does not consider the foreign multinationals' worldwide operations and potential access to other tax haven jurisdictions.

For the control variables, we find the anticipated positive signs on the foreign multinationals' worldwide return on assets (*WWroa*) and on the financial condition of the U.S. subsidiary (*FCCZscore*). We do not find a significant positive result for *FCCAge*. This could be attributable to the lack of start-up firms in our sample (where the median age is 15 years), or to our inclusion of a separate control for the FCCs' financial condition. We also find insignificant results for *WWintang* and *Relsize*, which had no sign predictions. We note that there are limitations associated with our financial measure of intangibles, *WWintang*, which includes only purchased goodwill and thus cannot

<sup>15</sup> Aggregate assets for our sample of FCCs over the period 1987–1996 equal \$2,320 billion. Thus, a 10-percentage point change in *Ratediff* suggests a change in income reporting of \$8.4 billion ( $0.036 \text{ coefficient} \times 0.10 \times \$2,320$ ).

<sup>16</sup> We explore the impact of tax planning methods that do not generate interest deductions by modifying the dependent variable as taxable income *before* interest expense. We find a significant relation that suggests other mechanisms (e.g., location choice and transfer pricing) also play a role. This is consistent with Kemsley's (1998) findings regarding location decisions of U.S. multinationals, and Harris' (1993) and Jacob's (1996) findings regarding flexible expenses and intra-firm transactions.



TABLE 3  
REGRESSIONS OF U.S. TAXABLE INCOME (SCALED BY TOTAL U.S. ASSETS OR TOTAL U.S. SALES)  
ON FOREIGN MULTINATIONALS' TAX INCENTIVES AND CONTROL VARIABLES

Variable <sup>a</sup>	FCC Taxable Income/Assets (n = 569) <sup>b</sup>	FCC Taxable Income/Assets (n = 554) <sup>b</sup>	FCC Taxable Income/Sales (n = 566) <sup>b</sup>	FCC Taxable Income/Sales (n = 551) <sup>b</sup>
<i>Ratediff</i>	-0.036*** (-2.95)		-0.103*** (-3.60)	
<i>Statutorydiff</i>		0.014 (0.42)		0.014 (0.29)
<i>WWintang</i>	0.013 (0.28)	0.006 (0.13)	0.040 (0.58)	0.050 (0.62)
<i>WWroa</i>	0.313*** (4.04)	0.362*** (4.65)	0.231** (1.74)	0.278*** (2.33)
<i>FCCZscore</i>	0.021*** (6.84)	0.023*** (6.51)	0.015*** (2.69)	0.020*** (2.97)
<i>FCCage</i>	0.000 (0.16)	0.000 (0.41)	0.000 (0.40)	0.000 (0.66)
<i>Relsize</i>	0.009 (0.72)	0.014 (0.96)	-0.009 (-0.25)	0.014 (0.32)
<i>Year</i>	Not reported	Not reported	Not reported	Not reported
<i>Industry</i>	Not reported	Not reported	Not reported	Not reported
<i>Country</i>	Not reported	N/A	Not reported	N/A
<i>R-squared</i>	43.8%	36.9%	30.9%	13.4%

Note: \*\*\* and \*\* indicate significance at the 0.01 and 0.05 levels, respectively, with a one-tailed test for variables with a sign prediction and a two-tailed test otherwise. We report Huber-White t-statistics with adjusted standard errors that take into account multiple observations for the same firm.

<sup>a</sup>The variables for the foreign-controlled U.S. corporations (designated with FCC) are computed using data from their U.S. Corporation Income Tax Returns (Form 1120). The variables for the foreign multinational parent corporations (designated with WW) are computed using data from *Global Vantage* (GV). *FCC Taxable Income/Assets* = FCC income before special deductions (Form 1120, p. 1, line 28) divided by FCC total assets (Form 1120, p. 4, Balance Sheet). *FCC Taxable Income/Sales* = FCC income before special deductions (Form 1120, p. 1, line 28) divided by FCC total sales (Form 1120, p.1). *Ratediff* = the difference in the U.S. statutory corporate tax rate and the average tax rate (excluding the U.S. subsidiary investment) of the foreign multinational parent, measured as [worldwide current income tax expense (GV#24) - FCC current income tax] / [worldwide pretax income (GV#21) - FCC pretax book income (Form 1120, Schedule M-1)]. *Statutorydiff* = the difference in the U.S. statutory corporate tax rate and the statutory corporate tax rate of the country where the foreign parent is located. *WWintang* = worldwide net intangible assets divided by worldwide total assets (GV#82/ #89). *WWroa* = worldwide pretax income divided by worldwide total assets (GV#21/ #89). *FCCZscore* = Altman's private-firm Zscore (1993) for the FCC (computed as 0.717 \* working capital/total assets + 0.847 \* retained earnings/total assets + 3.107 \* earnings before interest and taxes/total assets + 0.42 \* book value of equity/total liabilities + 0.998 \* sales/total assets), with higher values reflecting a lower probability of bankruptcy. *FCCage* = age of the FCC in years computed using the incorporation date reported on Form 1120. *Relsize* = FCC sales (Form 1120, p. 1, line 1) divided by the worldwide sales (GV#1). *Year* = tax return year. *Industry* = FCC industry classification provided by the Internal Revenue Service. *Country* = the country where the foreign parent is located.

<sup>b</sup>The sample includes foreign-controlled U.S. corporations in the Coordinated Industry Cases of the Internal Revenue Service during 1987-1996, for which a foreign parent company could be identified on the *Global Vantage* database and a consolidated financial statement is reported. We exclude financial institutions, observations with missing data, and outlier observations. We also eliminate observations if the consolidated financial statements reflect worldwide losses, negative current income taxes, or average effective tax rates in excess of one. These criteria yield a sample of 569 firm-year observations for 126 firms.

fully capture intangible assets associated with R&D intensive activities that provide reporting flexibility (Grubert, 2003). In supplemental tests of the foreign multinationals' reporting flexibility, we include interaction terms for *Ratediff\*WWintang*, *Ratediff\*FCCage*, and *Ratediff\*Relsize*. We find insignificant interaction effects that correspond with the generally insignificant results for the underlying control variables.

Although it could be argued that territorial tax systems (versus worldwide tax systems) provide greater reporting flexibility because foreign earnings are generally exempt from home-country taxation, territorial tax systems (e.g., France) are also likely to have tight anti-abuse rules. In a supplemental test, we include an indicator variable for territorial versus worldwide taxation system countries as a substitute for our individual *Country* controls and include an interaction term for *Ratediff\*Territorial*. The coefficient on *Territorial* is marginally positive (at the 0.08 significance level), but the interaction term is insignificant. Thus, similar to Matthews (2001) and Altshuler and Grubert (2001), we do not find evidence of enhanced income-shifting opportunities under territorial systems.<sup>17</sup>

We also estimate by-year and by-country regressions (with *Ratediff*) and find significant tax incentive results in our 1988, 1989 and 1993 regressions, and in our regressions for the two countries most frequently represented in our sample (Japan and Great Britain). Our findings of within-country effects indicate that differential tax incentives exist across multinationals located within the same country, and they provide some assurance that differences across countries (such as accounting methods) are not unduly influencing the full-model results.

### U.S. Debt Policy

Table 4 shows regression results for our tests of foreign multinationals' U.S. debt policy. We again report four models that reflect two dependent measures of debt policy (*FCC Debt/Assets* or *FCC Interest Expense/Sales*) and two measures of tax incentives (*Ratediff* or *Statutorydiff*). The models yield R-squared statistics that range from 28.1 to 47.8 percent, with correlation diagnostics indicating no harmful collinearity.

Consistent with tax-motivated debt policy, we find that *Ratediff* is positively related to either the U.S. debt ratio (*FCC Debt/Assets*) or the percentage of U.S. interest expense to U.S. sales (*FCC Interest Expense/Sales*). These findings suggest that foreign multinationals with lower foreign tax rates source more debt in their U.S. subsidiaries than those with higher foreign tax rates. The *Ratediff* coefficient (for the *FCC Debt/Assets* model) also suggests that, *ceteris paribus*, a 10-percentage point change in tax rates would translate into an overall 1.2-percentage point change in U.S. debt ratios for our sample.

Our alternative tax incentive variable, *Statutorydiff*, is also positively related to either *FCC Debt/Assets* or *FCC Interest Expense/Sales*. Because *Statutorydiff* compares the U.S. statutory tax rate to the home-country statutory tax rate, these results are consistent with foreign multinationals considering home-country debt placements as the relevant alternative to U.S. debt. However, these *Statutorydiff* results should be interpreted with some caution since indicator variables for *Country* are not included as a separate control.

Similar to our tests of income-reporting effects, we conduct supplemental tests using an indicator measure of tax incentives that equals one if the average foreign tax rate is less than the U.S. statutory corpo-

<sup>17</sup> Matthews (2001) finds no income-shifting differences across worldwide vs. territorial tax regimes, while Altshuler and Grubert (2001) find no evidence that U.S. multinationals' location decisions would change if the U.S. adopted a dividend exemption system.



TABLE 4  
REGRESSIONS OF U.S. DEBT (SCALED BY TOTAL U.S. ASSETS) AND U.S. INTEREST EXPENSE (SCALED BY TOTAL U.S. SALES) ON FOREIGN MULTINATIONALS' TAX INCENTIVES AND CONTROL VARIABLES

Variable <sup>a</sup>	FCC Debt/ Assets (n = 566) <sup>b</sup>	FCC Debt/ Assets (n = 551) <sup>b</sup>	FCC Interest Expense/Sales (n = 566) <sup>b</sup>	FCC Interest Expense/Sales (n = 551) <sup>b</sup>
<i>Ratediff</i>	0.122** (2.00)		0.036*** (2.36)	
<i>Statutorydiff</i>		0.492*** (3.58)		0.123*** (2.49)
<i>WWdebratio</i>	0.722*** (6.15)	0.641*** (6.35)	0.012 (0.55)	0.013 (0.63)
<i>FCCcapint</i>	0.157 (1.42)	0.149 (1.26)	-0.018 (-0.75)	-0.029 (-1.14)
<i>FCCadjZscore</i>	-0.047*** (-3.10)	-0.057*** (-3.68)	-0.019*** (-5.32)	-0.020*** (-5.55)
<i>FCCsize</i>	0.009 (0.70)	0.008 (0.55)	0.006*** (2.57)	0.005** (2.16)
<i>FCCage</i>	-0.000 (-0.15)	-0.001 (-0.77)	-0.000 (-0.71)	-0.000 (-0.90)
<i>Year</i>	Not reported	Not reported	Not reported	Not reported
<i>Industry</i>	Not reported	Not reported	Not reported	Not reported
<i>Country</i>	Not reported	NA	Not reported	NA
<i>R-squared</i>	36.2%	28.1%	47.8%	41.6%

Note: \*\*\* and \*\* indicate significance at the 0.01 and 0.05 levels, respectively, with a one-tailed test for variables with a sign prediction and a two-tailed test otherwise. We report Huber-White t-statistics with adjusted standard errors that take into account multiple observations for the same firm.

<sup>a</sup>The variables for the foreign-controlled U.S. corporations (designated with FCC) are computed using data from their U.S. Corporation Income Tax Returns (Form 1120). The variables for the foreign multinational parent corporations (designated with WW) are computed using data from *Global Vantage* (GV). *FCC Debt/Assets* = FCC total debt to FCC total assets (Form 1120, p. 4, Balance Sheet). *FCC Interest Expense/Sales* = FCC interest expense divided by FCC sales (Form 1120, p.1). *Ratediff* = the difference in the U.S. statutory corporate tax rate and the average tax rate (excluding the U.S. subsidiary investment) of the foreign multinational parent, measured as [worldwide current income tax expense (GV#24) - FCC current income tax] / [worldwide pretax income (GV#21) - FCC pretax book income (Form 1120, Schedule M-1)]. *Statutorydiff* = the difference in the U.S. statutory corporate tax rate and the statutory corporate tax rate of the country where the foreign parent is located. *WWdebratio* = worldwide debt divided by worldwide total assets [(GV#94 + #106) / #89]. *FCCcapint* = FCC net property, plant, and equipment divided by FCC total assets (Form 1120, p. 4, Balance Sheet). *FCCadjZscore* = Altman's private-firm Zscore (1993) for the FCC with the equity to liabilities component excluded (i.e., 0.717 \* working capital/total assets + 0.847 \* retained earnings/total assets + 3.107 \* earnings before interest and taxes/total assets + 0.998 \* sales/total assets), with higher values reflecting a lower probability of bankruptcy. *FCCsize* = natural log of total FCC assets (Form 1120, p. 4, Balance sheet). *FCCage* = age of FCC in years computed using the incorporation date reported on Form 1120. *Year* = tax return year. *Industry* = the FCC industry classification provided by the Internal Revenue Service. *Country* = the country where the foreign parent is located.

<sup>b</sup>The sample includes foreign-controlled U.S. corporations in the Coordinated Industry Cases of the Internal Revenue Service during 1987-1996, for which a foreign parent company could be identified on the *Global Vantage* database and a consolidated financial statement is reported. We exclude financial institutions, observations with missing data, and outlier observations. We also eliminate observations if the consolidated financial statements reflect worldwide losses, negative current income taxes, or average effective tax rates in excess of one. These criteria yield a sample of 566 firm-year observations for 125 firms.

rate tax rate and zero otherwise. We find the expected positive relation between *FCC Debt/Assets* and our indicator measure of income-shifting incentives (coefficient equals 0.068 with significance at the 0.01 level). We then estimate our debt model (with *Ratediff*) separately on these 'low' and 'high' partitions. We do not find significant *Ratediff* results within either partition. These findings suggest that our U.S. debt placement results are primarily driven by whether the foreign tax rate is high versus low compared to the U.S. rate and not by continuous effects above and below this incentive point.

For the control variables, we find the expected positive relation between the debt ratios of FCCs (*FCC Debt/Assets*) and the foreign multinationals' worldwide debt ratios (*WWdebt*). We note that *WWdebt* is not significant when we define the dependent variable as *FCC Interest Expense/Sales*, a measure that would have less association to a worldwide debt-to-asset constraint. The negative coefficient on *FCCAdjZscore* suggests FCCs with a higher likelihood of financial distress have higher cumulative debt ratios. We find generally insignificant results for the other control variables that reflect characteristics of the FCC borrower: *FCCcapint*, *FCCsize*, and *FCCage*. These insignificant results may be due to the FCCs in our sample being large and mature. Alternatively, lenders may not focus on the wherewithal of subsidiary corporations in setting debt costs.

In a supplemental test, we consider the potential impact of interest rates by including a separate proxy of relative interest rates, defined as the difference between U.S. interest expense to U.S. debt and worldwide interest expense to worldwide debt. We find that our results are robust to including this variable. We also find the expected negative sign on relative interest rates that suggests multinationals consider interest rates in their debt placements.

## CONCLUSIONS

Using a matched sample of financial data on foreign multinationals and confidential U.S. income tax return data on FCCs during 1987–1996, we examine whether the worldwide tax incentives of foreign multinationals influence their U.S. tax reporting. Our results suggest that foreign multinationals follow tax-motivated U.S. income reporting strategies, and that these strategies are reflected in their U.S. debt policy.

Our results provide insights regarding the complex reporting behavior of FCCs. We find that the taxable income levels of FCCs vary significantly with the worldwide tax incentives of their foreign parent companies and with economic determinants. These findings suggest that FCCs are not a homogeneous group for which a 'one size fits all' tax policy is likely to be effective.

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