

Discussion of
The Impact of U.S. Tax Law Revision on
Multinational Corporations' Capital Location
and Income-Shifting Decisions
and
Geographic Income Shifting by Multinational
Corporations in Response to Tax Rate Changes

DOUGLAS A. SHACKELFORD*

1. Introduction

The principal research question in these papers involves transfer pricing: Did multinational corporations shift income into the United States following the Tax Reform Act of 1986 (TRA 86) to minimize worldwide taxes? To address this question, Harris compares the tax expense and income of multinationals domiciled in the United States (U.S. multinationals) to the tax expense and income of U.S. domestics and to the income of foreign corporations. Klassen, Lang, and Wolfson (henceforth K LW) use geographic segment disclosures by U.S. multinationals to divide income into domestic and foreign sources. They compare the changes in domestic and foreign income to determine whether tax-motivated income shifting occurred.

The results from these papers are inconclusive and puzzling. Consistent with income shifting, Harris reports that U.S. multinationals paid more U.S. taxes and reported more U.S. income than U.S. domestics from 1987-90 and reported less foreign income than foreign compa-

*University of North Carolina. The helpful comments of Julie Collins are acknowledged.

nies in 1987 and 1988. However, he is unable to reject an alternative hypothesis that U.S. multinationals outperformed other companies during those years. KWLW report that U.S. multinationals shifted income to (from) the U.S. in 1987 (1988), consistent (inconsistent) with tax minimization. While the authors are to be commended for grappling with an important topic, additional work is needed to understand if, when, and how multinational corporations shift income to minimize taxes.

The next section outlines the importance of empirical studies of transfer pricing. Sections 3 and 4 examine the empirical findings of both papers. Section 5 discusses several issues relevant to both papers.

2. Income Shifting: Important and Unresolved

There are at least five reasons that little income shifting may have occurred after TRA 86. (1) Many financial, operational, and tax decisions are path-dependent. As a result, the nontax costs associated with income shifting may have dominated the tax benefits (Scholes and Wolfson [1992] and Wilson [1992]). (2) Taxes are of secondary importance in many international decisions. While there are some examples of taxes influencing international decisions (e.g., pharmaceuticals in Puerto Rico), many companies are likely to place a lower priority on taxes than on other factors, such as markets, infrastructure, access to capital, political stability, and labor costs. (3) The benefits of income shifting are uncertain because transfer-pricing policies are not stable (e.g., the Internal Revenue Service has recently issued new transfer-pricing regulations). (4) General instabilities in tax laws create incentives for reversible and adaptable contracts (Scholes and Wolfson [1992]). However, once transfer-pricing arrangements are accepted by the tax authorities, revision must be supported by changes in economic factors other than the tax law. (5) TRA 86 involved major reform of the U.S. tax system, including substantial revision of the taxation of multinational corporations. As a result, adjustments to a new equilibrium in international tax planning may have occurred in stages with complex, inflexible responses, such as transfer pricing, delayed until regulatory guidance was available.

On the other hand, there are at least three reasons that companies may have engaged in widespread income shifting. First, by reducing the maximum corporate tax rate and limiting foreign tax credits, TRA 86 produced incentives to shift income from foreign to domestic sources. Second, the transactions costs of income shifting may have been relatively minor because income shifting can be achieved through accounting adjustments as opposed to changes in the factors of production. Third, because TRA 86 forced multinational companies to revisit their tax strategies, the late 1980s may have been an opportune time to develop new transfer-pricing strategies.

3. Empirical Results—Harris

3.1 SAMPLE

To test for income shifting, Harris selects a sample of *Compustat* firms that report sales, total investment, U.S. federal tax, and pretax income for all years from 1984 to 1990. Using geographic segment disclosures, he sorts the firms into U.S. multinationals and U.S. domestics. Tests are conducted on the U.S. multinationals with the U.S. domestics (foreign *Global Vantage* firms) controlling for domestic (foreign) economic factors that affect all companies. Bias is introduced to the extent that unobserved differences between U.S. multinationals and U.S. domestics or foreign corporations are correlated with the explanatory variables. An important issue for research in this area is whether there exists any set of firms that are appropriate controls for U.S. multinationals.

Sample size is not disclosed for each test (however, at least one test includes only 37 multinationals). Values at the extreme 1% of each tail of the distribution for dependent variables are excluded as outliers. No influence diagnostics or further discussions of these outliers are provided.

3.2 TESTS

Harris tests whether multinationals paid higher U.S. taxes after 1986 than U.S. domestics by regressing the current U.S. tax provision on categorical variables for multinationals, "high-flexibility" companies, and each year from 1987 to 1990.¹ Controls for industry and expected income are included. Harris reports in table 1 that multinationals with high flexibility paid more U.S. taxes after 1986 than U.S. domestic firms with high flexibility or multinationals with low flexibility.

While the flexibility measure is intended to capture interfirm differences in the ability to transfer income, it is also a measure of size. In addition, companies with large amounts of interest, research and development, rent, or advertising are likely to differ from other companies along other important dimensions, including taxes. Companies with large deductions were targeted for the alternative minimum tax in TRA 86 and, thus, any increases in the current U.S. tax provision may be partially attributable to the alternative minimum tax.

¹ A firm is considered to have "high flexibility" if its mean interest, research and development, rent, or advertising for 1984 and 1985 exceeds the third quartile for all sample firms. Although Harris hypothesizes that a structural shift occurred with TRA 86, his regression model includes separate categorical variables for each year after 1986. The reason for this treatment is not disclosed; however, the paper implies that separate years are intended to detect the speed of response to TRA 86. Either explicit discussion of the expected movement to a new equilibrium or use of a single categorical variable to capture all years after 1986 seems warranted.

In table 2, Harris attempts to reject the alternative hypothesis that U.S. taxes increased for high-flexibility multinationals because of other changes in TRA 86, such as foreign tax credit limitations. He reasons that if this alternative hypothesis were true, the higher U.S. taxes would arise from factors other than higher U.S. book income. Regressing the current year's U.S. pretax income on explanatory variables similar to those in the preceding test, Harris reports in table 2 a relative increase in U.S. income after 1986 for high-flexibility multinationals. He concludes that the higher U.S. taxes did not arise from factors other than income shifting, such as increased limitations on foreign tax credits.

Harris's conclusion that increases in U.S. taxes are not attributable to foreign tax credit limitations is unwarranted. These limitations create an additional incentive to engage in income shifting. Multinationals with excess foreign tax credits can lower the cost of repatriation by shifting income to the United States from countries where they face higher marginal tax rates (high-tax countries). Repatriation through income shifting can reduce taxable income in the high-tax country and avoid withholding taxes that would otherwise increase their excess foreign tax credits. Thus, companies with excess foreign tax credits are more likely to shift income than other companies and even more likely since 1986 because TRA 86 increased the limitations on foreign tax credits.²

Having documented that high-flexibility multinationals pay higher U.S. taxes and report higher U.S. income, Harris tests whether foreign earnings for these companies declined following TRA 86. Table 3 indicates that flexible multinationals report lower (higher) foreign earnings in 1987 and 1988 (1990). The coefficients for $D_{MC, Flex, t}$, the principal variable of interest, for 1987 (1988) are 12% (18%) of the corresponding coefficients in table 2, indicating that high-flexibility multinationals increased their recognition of domestic income more than they reduced their recognition of foreign income.

To summarize, Harris finds that high-flexibility multinationals paid more U.S. taxes and reported higher U.S. income after 1986 than U.S. domestics and that multinationals reported lower (higher) foreign income in 1987 and 1988 (1990) than foreign companies. While these findings are not inconsistent with income shifting, they are also not inconsistent with alternative hypotheses, including high-flexibility U.S. multinationals outperforming other companies in the United States and performing at roughly the same level as other companies outside the United States. Although weakened by the difficulty of controlling

² This discussion raises two questions. First, what amount of post-TRA 86 income shifting is attributable to reduced U.S. tax rates as opposed to increased limitations on foreign tax credits? Second, to what extent does repatriation through income shifting substitute for dividend repatriation?

fully for the unique features of U.S. multinationals, this paper provides some indirect evidence that multinationals shifted income from foreign operations to domestic operations to minimize taxes following TRA 86.

The remainder of Harris's paper addresses investment shifting. Using similar tests, he finds little evidence that U.S. multinationals responded to TRA 86 by shifting capital from the United States to foreign countries. However, as with income shifting, these results hinge critically upon the adequacy of Harris's controls for U.S. multinationals.

4. *Empirical Results—Klassen, Lang, and Wolfson*

4.1 SAMPLE

To test for income shifting, K LW examine 191 *Compustat* multinational firms that report pretax income, domestic and foreign identifiable assets, book equity in excess of \$1 million, and no net operating loss carryforwards during 1984–90. Companies are excluded if the absolute value of the ratio of taxable income to book equity exceeds 1.5. Multinationals are divided into domestic and foreign operations based on *Compustat* geographic segment disclosures and compared to a control sample of 1,466 other U.S. firms and 2,095 firms domiciled outside the United States. The control firms are drawn from *Global Vantage* using criteria similar to those imposed on the sample firms except that companies with net operating loss carryforwards are not excluded.

K LW compare the domestic and foreign operations of sample U.S. multinationals to the aggregated operations of both U.S. and non-U.S. multinationals and domestics. This selection process appears appropriate; however, the problems introduced by including domestics in the control sample could be avoided by limiting the control sample to multinationals.

4.2 TESTS

K LW regress the change in the ratio of taxable income to book equity (ΔROE) on a categorical value for multinationals and control for differences in the location of foreign operations and size.³ The sign of the dependent variable is reversed for the foreign operations of U.S. multinationals and firms domiciled outside the United States. Consistent with expectations, table 3 reports that the change from 1986 to 1987 in ΔROE is greater for multinationals and significantly different from zero at the 5% level. This result is consistent with multinationals' shifting income to the United States in 1987 in response to TRA 86. However, the relation reverses in 1988 and is significantly different from zero at the 10% level, consistent with multinationals' shifting income out of the United States in 1988.

³ Taxable income is estimated by adjusting pretax income for deferred taxes.

The reversal in 1988 is puzzling because U.S. rates for calendar year-end companies fell by 6% in both 1987 and 1988. The authors deny that the 1988 finding is contrary to expectations, arguing that because Canada, France, and Japan also lowered their tax rates in 1988, it is not clear that firms should have shifted income into the United States. However, this position is difficult to support. The paper focuses on the behavioral responses of U.S. multinationals, which should be particularly sensitive to large shifts in U.S. rates. Moreover, none of the other countries in figure 1 (Canada, United Kingdom, France, Germany, and Japan) appears to have reduced rates in any year by more than the United States in 1988. It seems unlikely that U.S. multinationals responded more strongly to smaller rate reductions outside the United States in 1988 than the larger U.S. rate reduction in 1988. A more plausible interpretation of the 1988 results is that they are inexplicable and raise doubts about the 1987 results.

KLW also report that income shifting is concentrated among the largest multinationals (table 5). This finding is consistent with results in Harris (to the extent that high flexibility captures size) and with results in Scholes, Wilson, and Wolfson [1992] who found that income shifting in response to TRA 86's phase-in of rate reductions was concentrated among larger companies. Together these studies suggest that tax-planning effects which are significant enough to be measurable are limited to large companies. If the size effect is generalizable, this finding has important policy implications for tax incidence and wealth transfers as well as design implications for researchers.

4.3 GROUP DISCUSSION

KLW's results in table 3 for 1987 and 1988 generated considerable discussion at the conference. This section reviews some of that discussion.

Concerns were raised at the conference about the dependent variable, ΔROE . Standard assumptions about independence may be violated by including both the foreign and domestic operations of each multinational in the dependent variable. If the alternative hypothesis of income shifting were true and could be captured without error by the dependent variable, then ΔROE would be the same for both the foreign and domestic operations of each multinational. Conference participants disagreed over whether this violated independence or added power. A related discussion focused on the error terms in ΔROE . Conference participants disagreed over whether independence in the error terms of ΔROE for a multinational's foreign and domestic operations would allay concerns over independence.⁴ It was noted that even a small reduction in the number of independent observations would affect inferences from the 1987 results, because the *t*-statistic is only 1.974. The revised paper notes

⁴ One reason the error terms might be correlated is changes in exchange rates.

that ΔROE for foreign and domestic operations is positively correlated at the 0.12 level, biasing against rejection the null hypothesis.

KLW could avoid independence problems by conducting two regressions—one with domestic operations and U.S. control firms, the other with foreign operations and foreign control firms. Two regressions would enable separate measurement of the contributions of domestic and foreign operations to income shifting, albeit at a cost of reduced power.

It was also suggested at the conference that the authors might consider broadening the paper to include the effects of non-U.S. tax law changes on income shifting. (Such a test would be more consistent with the theoretical discussion in the earlier sections of the paper.) Tax rate changes across countries (continents) could be aligned to test whether income flowed into countries (continents) when rates were reduced and flowed out of countries (continents) when rates were increased. For example, based on figure 1, one might predict that income flowed into Europe in 1985 and 1986, into the United States in 1987, into North America in 1988, and out of North America in 1990. This event-time approach could provide a more powerful test and be of broader appeal.

Another possible extension would be a time-series analysis that documents whether individual companies shifted income in and out of the United States (or other countries) in response to changes in taxes. While the paper discusses income shifting as a dynamic process that individual companies use to lower their global tax bills, the empirical tests are cross-sectional analyses of changes in the location of income.

Another issue that arose at the conference concerns the exclusion of companies with net operating loss carryforwards from the sample. KLW explain that they exclude 121 multinationals with net operating losses (*NOL*) because (1) *NOLs* change the incentives to shift income, (2) identification of the country to which the carryforward applies is not always possible, and (3) earnings are volatile for *NOL* companies. The exclusion of *NOL* firms is unfortunate because of the first reason given above, i.e., *NOL* firms *should* behave differently from other companies. Evidence that income shifting varied depending on the presence of *NOLs* would provide strong support that multinationals shifted income in the predicted manner. The revised paper notes that income shifting for *NOL* firms is similar to non-*NOL* firms except that the *NOL* firms do not have a reversal in 1988. On a related point, because KLW exclude *NOL* companies from the sample firms but not from the control firms, the results are already capturing differences in income shifting between companies with and without net operating loss carryforwards.

A question was raised at the conference concerning whether the multinationals that were shifting income into the United States in 1987 are the same companies that were shifting income out of the United States in 1988. One possible reason for reversal is the alternative minimum tax. Because the marginal *AMT* rate is 20%, companies facing this tax would have greater incentives to shift income to the United

States. Likewise, in years following payment of the *AMT*, there would have been incentives to shift income out of the United States. It is possible that the 1987 and 1988 results are driven by a set of companies that paid the *AMT* in 1987 (and thus had incentives to shift income to the United States) and avoided the *AMT* in 1988 (and thus had incentives to shift income out of the United States).

It was also noted at the conference that 1988 was the first year companies were required to consolidate financing subsidiaries. The puzzling results for 1988 may be partly attributable to the impact of consolidation on the dependent variable, the change in the ratio of taxable income to book equity.

Another concern raised in the conference discussion is that the coefficients in table 3 for *GEO*, controls for variation in the location of foreign earnings, are insignificant only in 1987, the year for which results are as predicted. In all other years at least three of the six *GEO* variables are significantly different from zero. Another concern was raised about the extremely low R^2 (0.003) for 1987. It was also noted that the intercepts for the years further from 1987 were relatively large (-2% to -4%) and significantly less than zero.

4. *Comments Relevant to Both Papers*

Because of the similarities of these papers, a number of comments pertain to both. Those comments are summarized here.

The first comment concerns the lack of power in the tests. Commenting on the historically weak results in tax research, Scholes and Wolfson [1987] state, "Cross-sectional tests using seasoned firms in a variety of industries do not yield powerful results." Their observation appears particularly relevant to these studies, which examine a cross-section of companies from various industries. Clearer predictions and more precise tests could be constructed with more homogeneous samples. For example, a cross-sectional analysis of transfer pricing that includes oil companies and does not control for changes in worldwide oil prices is less powerful than a detailed investigation of income-shifting opportunities in the oil industry with controls for industry-specific factors.

The second comment concerns the problems of identification arising from multiple incentives to shift income following TRA 86. As discussed above, the *AMT* provided an incentive for firms to shift income from 1986 to later years (Gramlich [1991], Boynton, Dobbins, and Plesko [1992], and Dhaliwal and Wang [1992]). To the extent that companies paying the *AMT* are not randomly distributed between sample and control firms, the income-shifting incentive provided by this tax introduces bias.

The phase-in of lower statutory rates provided another reason for shifting income. Scholes, Wilson, and Wolfson [1992] (henceforth SWW) report that large U.S. firms shifted income from 1986 to 1987 and 1988 to capture tax benefits that arose as a result of cross-sectional

differences in fiscal year-end. Although SWW ignore the cross-border shifting that Harris and K LW examine, their findings have implications for both of these papers. Because sample firms in both studies are significantly larger than control firms, it is likely that firms applying SWW's income shifting are concentrated more among sample firms than among control firms; this effect biases Harris and K LW toward rejection of the null hypothesis. On the other hand, the increases in 1987 and 1988 income that SWW attribute to shifting from 1986 may be partially attributable to transfer pricing between foreign operations and U.S. operations, as hypothesized by Harris and K LW. As a result, findings from any test of income shifting following TRA 86 should be interpreted with care.

Both studies use firms with various year-ends. Because TRA 86 tax rate reductions were phased in over 1987 and 1988, the incentives for income shifting varied depending on year-end. To the extent that the benefits of less noisy data exceed the deleterious effects of reductions in sample size, the power of the tests would be increased by limiting analyses to calendar year-end companies.

Conference participants also noted that both papers focused solely on changes in the tax rate and assumed no changes in the tax base. To the extent that the tax base changed, the incentives may have been the opposite of those predicted.

Finally, an issue that arose several times during the discussion concerns the effects of changes in exchange rates on the results in both papers. Although neither paper directly addresses this issue, the authors acknowledged that exchange rates could have major effects on their findings.

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