

## **Foreign Taxes, Domestic Income, and the Jump in the Share of Multinational Company Income Abroad: Sales Aren't Being Globalized, Only Profits**

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### **Abstract**

Since 1996 the foreign share of U.S. multinational corporations' worldwide income has risen sharply. For example, in a sample of large nonfinancial MNCs, the aggregate foreign share increased from 37.1 percent in 1996 to 51.1 percent in 2004. We divide the increase into its major arithmetic components, and evaluate the role of taxes in each. The basic components are the effect of the increase in domestic losses (6.0 percent), the increase in companies' worldwide profits holding their share constant at the 1996 level (5.0 percentage points) and finally letting each company's foreign share change (3.0 percentage points).

There is some evidence that lower average foreign tax rates in 2004 were associated with greater domestic losses but it probably contributed no more than 1 percentage point the 6.0 percentage point component.

The very rapid income growth of companies that already had a large foreign share in 1996 raises the question as to the role of taxes in 1996. A company's average effective foreign tax rate had an important effect, particularly on profit margins. Its domestic profit margin was higher if its average foreign tax rate was higher. The difference between average foreign effective rates and the U.S. effective rate in 1996 increased the 1996 foreign share by about 4 percentage points.

Finally the reduction in average foreign effective tax rates, of about 5.0 percentage points from 1996 to 2004, explains about 2.0 percentage points of the 3.0 percentage point final component. This was all through the impact on foreign and domestic profit margins, not through a shift in sales. Indeed there was a major shift in foreign and domestic profit margins on sales over the period.

Summing up, the combined effect of average foreign rates in 1996 and the decline to 2004 increased the foreign share of MNC worldwide income by about 8 percentage points.

It is difficult to identify any positive or negative effect of lower foreign tax rates on domestic sales. The positive and negative effects of tax induced foreign activity seem to offset each other.

The 'check-the-box' provisions introduced in 1997 enabled U.S. companies to reduce their foreign tax burdens by about 2.0 percentage points. The active finance exception, also introduced in 1997, which permitted U.S. companies to defer income financial business income, contributed about another percentage point to the decline in foreign rates.

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## **Foreign Taxes, Domestic Income, and the Jump in the Share of Multinational Company Income Abroad**

### **Introduction**

Since 1996 there has been a notable increase in the share of the worldwide income of U.S. multinational companies that is declared abroad. It has received a great deal of attention in the tax press such as *Tax Notes*. (See Sullivan (2008)) It is also reflected in rather expansive estimates of the revenue that the United States would gain if it adopted formula apportionment. (Avi-Yonah and Clausing (2007))

In a linked sample of 754 large nonfinancial U.S. based multinational corporations (MNCs) obtained from the Treasury tax files, the share of pre-tax worldwide income that is earned abroad increased from 37.1 percent in 1996 to 51.1 percent in 2004. The share of worldwide income that is not repatriated from abroad almost doubled, rising from 17.4 percent in 1996 to 31.4 percent in 2004. Foreign income here is defined as the equity income of U.S. subsidiaries abroad before foreign tax. Domestic income is U.S. taxable income less dividends from abroad. It therefore includes royalties and interest received from foreign affiliates. The measure of foreign income is 'Earnings and profits', which is defined in the Internal Revenue Code and approximates book income. Domestic income is U.S. taxable income, which can be affected by changes in depreciation and other changes in the measure of taxable income. (We will address this asymmetry below.)

There are several potential explanations for the large increase in the foreign share:

1. A greater share of MNC operations in the form of real capital and sales takes place outside the United States compared to 1996. This may possibly have been induced by lower effective foreign tax rates.
2. The growing importance of domestic losses. Auerbach and his collaborators have documented the growing importance of loss companies. (See, for example, Altshuler, Auerbach, Cooper and Knittel (2008).) The source still seems somewhat mysterious. Is there a parallel growth of losses in foreign subsidiaries? Is it possible that declining

effective foreign tax rates increased the possibility of domestic losses by increasing the likelihood that more income is declared abroad?<sup>1</sup>

3. The different characteristics of growing and declining companies. As we will see, companies that already had a large share of their income abroad in 1996 grew faster than other companies on a worldwide basis.

4. Falling tax rates abroad may have increased the incentives for shifting income offshore.

5. Changes in the U.S. system for taxing foreign income. These may have made major contributions to the decline in average effective foreign tax rates. The important changes in the U.S. taxation of foreign income include:

(a) The implementation of the check-the-box rules in 1997. These allowed companies to avoid some of the restrictions imposed by the CFC (subpart F) rules. By using hybrid entities they were able to significantly lower their foreign tax burdens. Hybrid entities are ones that are considered to be corporations by one country and unincorporated branches by another. One way was to strip income from high tax countries to low tax countries using intercompany debt. Another device was to use R&D cost sharing agreements to locate patents in a tax haven affiliate, which would then receive royalties from high tax related parties.

The use of check-the box to lower foreign tax burdens may have encouraged greater income shifting from the United States. But we should note that some of the new planning strategies can make foreign income ‘disappear’. In this case, the entity is owned directly by the U.S. parent that extends it a loan. The entity is recognized as a corporation in the foreign jurisdiction but it is a disregarded entity from the U.S. point of view. Therefore any interest payments to the parent have no U.S. tax consequences because it is a payment within the consolidated domestic company. But if the foreign jurisdiction allows tax consolidation of related companies, the interest deduction abroad can be used to offset the income earned by operating companies there. This strategy could cause the increase in the share of foreign income to be understated.

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<sup>1</sup> Our measure of domestic income does not include foreign dividends. Altshuler, Auerbach, Cooper and Knittel include all U.S. taxable income for the purpose of their analysis of losses.

(b) The extension of the deferral privilege to active financial income in 1997. The Tax Reform Act of 1986 had repealed deferral for financial income on the grounds that it was impossible to distinguish passive from active financial income. The 1997 provisions were the beginning of a series of temporary extensions of the active finance exception.

(c) The enactment in 2004 of the one-year tax holiday for dividend repatriations. In 2005, dividends could be brought back at the low tentative U.S. tax rate of 5.25 percent compared to the normal 35 percent. (Credits for foreign tax were scaled down proportionately. The tax burden on dividends was therefore 3 to 4 percent.) This provision became an active possibility as early as 2002. Firms therefore started to put a lower tax cost on income deferred in low tax locations abroad.

In the analysis, an important question is the extent to which a decline in foreign tax rates affects the domestic economy. Does it lead to a reduction in domestic sales or a decline in domestic profit margins? A fall in foreign tax rates can increase the share of worldwide income abroad but that may simply reflect greater sales and income abroad without implying a reduction in U.S. domestic income.

This paper therefore attempts to decompose the change in the overall foreign share of worldwide income into its various arithmetic components and assess the role of taxes in each component. As suggested above, the effect of the relative growth of foreign and domestic losses is one component. Another is the impact on the foreign share of the worldwide growth of the different types of companies that make up the MNC universe, holding the initial foreign share constant at the 1996 level. Did the companies that already had a large share of their income abroad in 1996, perhaps because of opportunities for locating in low tax countries, grow faster than other companies? Did foreign tax rates affect domestic and foreign sales and profit margins even in 1996?

The third major component is the impact of letting each company's foreign share of income change from 1996 to 2004. To what extent was the change in the foreign share the result of the change in its effective foreign tax rate? Furthermore, the changes in the foreign share can itself be resolved into its various components. Foreign income could increase because foreign sales increased or the profit margin on foreign sales increased,

both possibly in response to foreign tax rates. Similarly domestic sales and profit margins could have changed in response to effective foreign tax rates.

### **Some Recent literature**

One recent paper that looks at multinational firm tax avoidance and tax policy is by Kim Clausing (2009). Using published Bureau of Economic Analysis data, Clausing makes an estimate of the amount of income shifted out of the United States. But, in contrast to the analysis here, the estimate is not based on the observed relationship between average foreign tax rates and domestic profit margins and sales. As in much of the income shifting literature going back to Grubert and Mutti (1991) and Hines and Rice (1991), the statistical analysis is based on a cross-section of host countries for U.S. direct investment. After making an estimate of the total income shifted to low tax locations, Clausing then arbitrarily allocates part of it to the United States based on how much subsidiaries trade with their parents versus related parties in other foreign locations. In contrast, the present paper estimates the amount of income shifted out of the United States from parent level evidence on the relationship between average foreign tax rates and domestic profit margins.

Another recent paper is by Desai, Foley and Hines (2009) on the domestic effects of the foreign activities of U.S. multinationals. They instrument foreign activity using host countries' GDP growth and find significant positive effects on U.S. output and employment. But it is not surprising that GDP growth abroad results in greater MNC exports of U.S. components and headquarter services. However the Desai, Foley and Hines results have no bearing on whether an increase in U.S. taxes on foreign income would decrease U.S. welfare. Changes in foreign and domestic taxes, or changes in any other relative cost variables, are never part of their analysis. In this paper we relate U.S. domestic sales and profits to changes in average foreign tax burdens.

### **Possible Biases in the Estimated Foreign Share**

Before proceeding, however, it is first necessary to deal with the possible bias introduced by the somewhat different measures we use for domestic and foreign income. Earnings and Profits, which approximates book income, is used on the foreign side and U.S. taxable income is used on the domestic side. Earnings and Profits (E&P) is defined in the Internal Revenue Code which specifies certain class lives and straight line

depreciation, and also other adjustments that distinguish it from domestic or foreign taxable income. Taxable income may reflect incentives such as accelerated depreciation. The definition of E&P was unchanged in the period. The question is the importance of changes that affected the measurement of domestic taxable income after 1996.

The most important was ‘Bonus Depreciation’ a temporary provision that was introduced in 2002 and expanded in 2004. Firms could take an additional first year depreciation deduction of 30 percent (and 50 percent after 2004) of the adjusted basis. The basis for depreciation then was adjusted in later years. The paper by Altshuler, Auerbach, Cooper and Knittel (2008) does show a substantial effect on aggregate corporate taxable income of about 10 percent in 2004.<sup>2</sup>

However bonus depreciation seems to have been less important in our linked sample of large multinational corporations for which intangible assets created by R&D and advertising are very significant. In fact, in this sample, depreciation declined from 5.18 percent of domestic sales in 1996 to 4.45 percent of sales in 2004. It also declined in relation to gross profits after cost of goods sold and in relation to EBITDA (earnings before interest, tax, depreciation and amortization).<sup>3</sup>

Another possible source of bias in the use of taxable income on the domestic side is the growing use of options as a component of corporate compensation. The gain on ‘nonqualified’ options, which were the most important type, is deductible from corporate income when exercised. They may simply be a substitute for wages but, at a minimum, the timing of deductions can be distorted. But the Altshuler, Auerbach, Cooper and Knittel data indicate that the net effect of these deductions peaked in 2000 and was much lower in absolute terms in 2004 than in 1997, the first year in their analysis. It is very unlikely to be a source of understating 2004 taxable income compared to 1996.

The 2004 tax legislation introduced the 9 percent deduction for the income derived from domestic production activities, but it was not effective until 2005. It was intended as a replacement of the Extra-Territorial Income (ETI) provisions which had replaced the Foreign Sales Corporation (FSC) rules in 2000. The change from FSC to ETI may have

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<sup>2</sup> I am grateful to Matthew Knittel for providing me with the adjustments used in their paper.

<sup>3</sup> Statistics of Income Data indicate that aggregate corporate depreciation expense was essentially flat as a percentage of sales from 1996 to 2004. Depreciation expense in any year depends on industry mix and the pace of recent investment. The fact that total depreciation expense was flat as a percentage of sales in spite of bonus depreciation suggests that investment in tangible property was slowing.

some effect on the 2004-1996 comparison because it changed a dividends received deduction into a category of 'other deductions'. Our measure of domestic taxable income is before dividends received deductions. But this factor seems relatively minor. Total dividends received deductions in 1996 in our sample were only 1.5 percent of net domestic income in 1996 and only declined slightly to 1.25 percent of income in 2004.

Therefore, any adjustment for the asymmetry between the measures of foreign and domestic income seems unnecessary. Any reduction in domestic taxable income relative to book income would of course represent a reduction in effective domestic tax rates. The impact of lower foreign rates would therefore be understated. In any case the U.S. statutory rate remained constant at 35 percent and that is important in motivating income shifting, which turns out to be the most important consequence of tax differentials.

Finally, there may be some suspicion that changes in exchange rates, in particular the fall in the dollar, explain a part of the increase in the foreign share of income. But the trade-weighted indices published by the Federal Reserve Board of Governors indicate that, if anything, the opposite is true for the period from 1996 to 2004. For example, the Broad Index for the nominal value of the dollar increased from 97.46 to 113.63 and the real value increased from 88.81 to 99.61.

### **The Data**

Accordingly, we have linked the 1996 and 2004 Treasury tax files to identify the sources of the larger share of MNC income abroad. These include the basic corporate return on the Form 1120, the Form 1118 on which foreign tax credits are claimed, and the Form 5471 filed for each controlled foreign corporation (CFC), giving its operating and balance sheet data. The total linked sample included 754 nonfinancial corporations and 111 financial corporations. Most of the analysis concentrates on the nonfinancial companies which account for 88 percent of the foreign income in the sample in 2004. The 865 companies we are able to link accounted for about 80 percent of total foreign MNC income in 2004.

We have used the files to compute each MNC's average foreign effective tax rate in 1996 and 2004. This permits us to evaluate the role of changes in effective foreign tax rates in motivating the outward shift in income. Therefore, this analysis differs from most

studies of income shifting that are based on comparisons of profitability across host countries without being able to assess shifts from the home country.

We use the change in average foreign effective tax rates, not average statutory rates, because the change in effective rates reflects the company's own tax planning efforts, for example in the form of stripping income from high tax countries to tax havens. With the use of hybrid entities after check-the-box, this would appear as one consolidated subsidiary in the data. As a result, the correlation between country statutory rates and the average effective tax rates of subsidiaries listed in the country has declined after 1997. The average effective rate is therefore a better indicator of the benefits of shifting income from the United States.

The subsidiary level files based on the Form 5471 contain some hybrid entity information. It states whether the subsidiary owns an entity that was 'disregarded' under the check-the-box rules. A parent level check-the-box variable was constructed by giving a CFC a score of one if its response is yes and zero otherwise, and then weighting the responses by subsidiary income.

In evaluating the significance of tax changes since 1996, we attempt to distinguish the different groups of companies for which one or another of the different possible causes would have been important. For example, the introduction of check-the-box would have been important for MNCs operating mainly in high tax countries. Some may not have valuable intangibles or other vehicles for shifting income. Other more R&D intensive companies would have benefited from the tax shifting opportunities provided by the combination of check-the-box and cost sharing agreements.

The active finance exception would of course have created an incentive for companies with a large finance business to increase foreign operations. The tax files report the amount of financial services income that the parent company received in 1996. (Before 2007 repatriated financial services income was put in a separate basket for the purposes of computing credits for foreign tax on the income.) This is used to construct a dummy variable which takes a value of one if financial services income is positive.

Similarly, the repatriation tax holiday would be a great benefit to companies mainly in low tax locations which had large accumulations of passive assets. Thus, those companies with a low *level* of foreign tax would find a repatriation tax holiday very

attractive. In contrast, companies which lowered their foreign tax rate through interest stripping and hybrids would have a greater incentive to shift income out of the United States because of the *change* in the effective average foreign tax rate.

As noted, the effect of company R&D intensity is uncertain. On the one hand, the new planning devices made it possible for non-R&D intensive companies to shift income. They didn't need valuable patents and other intangible assets as vehicles. On the other hand, research oriented companies could combine hybrid entities with favorable cost sharing agreements to place large amounts of intangible income in a tax haven.

The data files have information on foreign and domestic sales so it is possible to see whether the increased share of income abroad simply reflects the increasing importance of foreign operations. In fact, that does not appear to be the case. There is a very large increase in profit margins abroad compared to those at home. But any increase in the importance of foreign sales itself may have been motivated by the reduction in effective tax rates abroad. That is one of the issues to be explored, whether lower effective foreign tax rates cause both an increase in foreign operations and a reduction of real activity at home.

### **Why are there company differences in average foreign tax rates?**

Companies' average foreign tax rates can differ because they have different opportunities for the location of activity and income. For example, mobile high tech companies that serve a worldwide market can locate in low-tax jurisdictions. They also have the opportunities for shifting income from high-tax locations. On the other hand, other companies find it more efficient to locate close to their customers, even if in a high-tax country.

Average foreign tax rates can also change for various reasons. Host countries can of course reduce their statutory and effective rates. But as we have discussed, companies can also lower their foreign tax burdens by engaging in tax planning, for example by shifting income from high-tax to low-tax jurisdictions. The 1997 check-the-box rules greatly facilitated this tax planning process. Similarly the active finance exception created an incentive to lower foreign taxes on financial operations because companies could now defer the income.

Why did companies differ in their use of the various planning devices? Their situations differed. For example, companies with large operations in high-tax locations had a much greater incentive to use hybrid structures to strip income from high to low tax countries. In contrast, mobile high tech companies were already in a position to enjoy low average foreign tax burdens.

## **The Basic Components of the Change in the Foreign Share**

### **Increased Domestic Losses and Foreign Tax Rates**

As indicated above, the increased amount of domestic losses from 1996 to 2004 seems to account for a significant part of the 14 percentage point increase in the share of worldwide income abroad in our linked sample of large U.S. based nonfinancial multinational companies. In the linked sample, domestic losses increased from 2.1 percent of worldwide income in 1996 to 5.8 percent of worldwide income in 2004. In contrast, there was only a modest increase in the significance of foreign losses, from 0.5 percent of worldwide income to 1.2 percent. It is possible that tax considerations played some role, which we explore below. Lower foreign tax rates made domestic losses more valuable when used to offset gains. In addition, 2004 legislation enacted the ‘symmetry of foreign and domestic losses’ which reduced the disadvantages of a domestic loss to the extent that it offset foreign income that would have been shielded by foreign tax credits anyway.

When the sample is restricted to companies with positive domestic income in both years, the increase in the aggregate foreign share declines from 14.0 percentage points to 8.2 percentage points. If the requirement that foreign income is positive in both years is added, it drops further to an increase of only 6.5 percentage points. As an alternative, when we impose the requirement that worldwide income be positive in both years, the increase in the foreign share becomes 11.6 percent. The growing importance of companies with losses, particularly domestic losses, explains a substantial part of the increase in the share of MNC worldwide income abroad.

The question is whether increased domestic losses may in part be attributable to foreign tax rates. The simple regressions in Table 1 indicate that the average foreign tax rate has some impact in increasing or decreasing domestic losses in 2004, but not in 1996. In 2004, in the regression with the amount of any domestic loss in relation to

domestic sales as the dependent variable, the average foreign tax rate has a significant positive coefficient. That is, a higher foreign tax rate reduces domestic losses. In addition, the correlation between domestic losses and the worldwide profit margin has declined, very significant in 1996 and insignificant in 2004. Along the same lines, the third and fourth regressions indicate that the correlation between foreign and domestic losses has declined although it was never very high.

But if we use the 2004 regression as giving the 'true' relationship between domestic losses and foreign tax rates, the approximately 5 percentage point reduction in average foreign tax rates from 1996 to 2004 would explain only about 10 percent of the increase in the ratio of domestic losses to sales. Alternatively, if we assume that companies only started to take their average foreign tax rate into consideration in planning the distribution of possible losses after 1996, then the contribution of the foreign tax burden would of course be much larger, about two percentage points..

### **Worldwide Growth, the Initial 1996 Share and Foreign Tax Rates**

Another possible explanation of the increase in the share of MNC income abroad is that the companies that already had a large share of their income abroad in 1996 simply grew much faster than other companies because they were the profitable, globalized one in the sample. Because the analysis in the remainder of the paper uses firm level data, we first restrict the sample of nonfinancial companies to those with positive worldwide income in both years so that the foreign shares can be computed. Companies without positive foreign or domestic sales are excluded. Companies with positive and negative changes in the foreign share greater than 100 percent are also excluded. The results do not seem to be sensitive to this latter exclusion. Mainly the exclusions eliminate some of the smaller MNCs. The aggregate totals of worldwide income included in the samples are not much changed.

The overall increase of the foreign share in this sample was 8.4 percentage points. To evaluate the impact of differing growth rates of worldwide profits on the aggregate foreign share, we ask a simple question: What would have happened to the aggregate share of foreign income if each company maintained the same foreign share in 2004 as in 1996 but experienced its own actual increase in worldwide income? The answer is that the foreign share of overall worldwide income in the sample would have increased by

5.3 percentage points, or about 63 percent of the actual 8.4 percent growth.

The regressions in Table 2 show the strong positive relationship between worldwide profit growth from 1996 to 2004 and the initial foreign share of income, and also the strong negative relationship between the change in the foreign share of income and worldwide income growth. The first regression is for the ratio of worldwide income in 2004 to worldwide income in 1996.<sup>4</sup> The only significant independent variable is the foreign share of worldwide income in 1996, and it is highly statistically and quantitatively significant. The statistical significance is better than the .01 percent level. The second regression is for the change in the foreign share of income from 1996 to 2004. We will discuss the other variables like the change in the effective foreign tax rate below. For now we focus on the profit growth from 1996 to 2004. It has an extremely significant negative coefficient. The fast growing companies did not tend to increase their foreign share.

The question at this point becomes: why did some companies already have a very large share of their income abroad in 1996? Table 3 therefore focuses on domestic and foreign profit margins and sales in 1996 before going on to explore changes from 1996 to 2004 in the next section. The three regressions are for the foreign share of worldwide income in 1996, the domestic profit margin on sales and the foreign profit margin on sales. The independent variables in each case are the parent ratio of R&D to Sales, the parent ratio of advertising to sales, a dummy for companies incorporated since 1980, and the company's average foreign tax rate.

The company's effective foreign tax rate is statistically significant, at the one percent level or better, in all three regressions. A lower foreign tax rate increased the foreign share of income and the foreign profit margin on sales in 1996. *A lower foreign tax rate lowers the domestic profit margin on sales, which suggests that not only do companies shift income from high-tax foreign countries to low-tax foreign countries but also from the United States abroad.* Furthermore the effect of taxes on the 1996 foreign share and domestic profit margin was quantitatively significant. Assuming a difference between foreign and domestic effective tax rates of approximately 10 percentage points, the -.417

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<sup>4</sup> The reason for the differing sample size in the tables is the restrictions necessary to define the variables. For example, worldwide income has to be positive to calculate a company's foreign share. Foreign income has to be positive to calculate a foreign tax rate.

coefficient for the foreign effective tax rate in the first regression indicates that the tax discrepancy increased the foreign share by about 4 percentage points. Similarly, the 10 percentage point tax rate differential lowers the domestic profit margin by 14 percent at the mean ratio of domestic profits to sales of .077.

But while taxes had already had a significant impact on foreign and domestic profit margins by 1996, this factor only explains about one percentage point of the increase in the foreign share from 1996 to 2004. That estimate is based on adjusting each company's foreign share in 1996 for the effect of its foreign effective tax rate, and then seeing how this alters the impact of its worldwide growth on the overall foreign share in 2004.

### **Changes in Companies' Foreign Share and Changes in their Foreign Tax Rates**

Table 4 then goes on to describe the effect of changes in companies' average effective foreign tax rate on changes in their foreign share from 1996 to 2004. The regression in the first row is for the change in the foreign share of income. The change in the foreign tax burden is clearly highly significant. A fall in the effective foreign tax rate increases the foreign share of the company's worldwide income. A reduction in the foreign tax rate of 10 percentage points increases the foreign share of worldwide income by more than 4 percentage points. The question is the extent to which this change in the foreign share reflects a change in domestic and foreign profit margins or foreign and domestic sales.

The second and third regressions in the table indicate that this response of the foreign share on MNC income to changing foreign tax burdens is almost exclusively the result of changing profit margins abroad compared to the United States. The second regression shows that a reduction in foreign tax rates lowers domestic profit margins. The coefficient is significant at the 10 percent level. The next regression indicates that foreign profit margins are highly responsive to average foreign tax rates. Lower foreign tax rates raise foreign profit margins and the coefficient is highly significant, just missing the one percent level.

*From 1996 to 2004 there was a major shift in profit margins. The foreign (unweighted) mean profit margin increased by 5 percentage points, almost doubling, while the domestic margin declined by two percentage points.*

We can note that the effect of the 1996 effective foreign tax rate on the foreign share and domestic and foreign profit margins in Table 3 is similar to the effect of the change in the average effective foreign tax rate on the changes in the share and margins from 1996 to 2004 in Table 4. *This increases our confidence in the results.*

The last four regressions on Table 4 indicate that changes in sales do not contribute much to the changing foreign share of income in response to foreign tax rates. Domestic sales fall when foreign tax rates decrease but the coefficient is not statistically significant. Surprisingly, foreign sales also fall and the coefficient is significant at the 5 percent level. Nevertheless, the second last regression shows that lower foreign tax burdens tend to increase the foreign share of sales, although the coefficient is not significant.

The difficulty in identifying any positive or negative effect of lower foreign tax rates on domestic sales suggests that the positive effects, such as the increase in component exports to affiliates, offset the possible negative effect in the form of a shift in activity to foreign locations. Neither the ‘export of jobs’ view nor the ‘tax havens are good’ view seem to have much empirical support.

The last regression on Table 4 adds the change in the foreign share of sales to the change in foreign share regression. The change in the foreign share of sales has a positive coefficient which is significant at the 5 percent level, but the other coefficients are not much different, particularly the size and significance of the change in foreign tax rates. The change in the share of sales abroad does not play an important role in explaining the increase in the share of income abroad. Indeed, on an aggregate basis in the sample the share of sales abroad declined from 1996 to 2004. The average share of sales abroad in the sample did rise modestly on an unweighted basis.<sup>5</sup>

The financial services dummy variable is never significant in any of the Table 4 regressions for the sample of nonfinancial companies. The existence of a financial business in these companies did not seem to contribute directly to the change in the share

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<sup>5</sup> The Benchmark Surveys of Foreign Direct Investment published by the Bureau of Economic Analysis do indicate a modest rise in the foreign share of sales from 1994 to 2004, although much smaller than the rise in the foreign share of income. See, for example, the charts in the 2008 report by the Government Accountability Office on U.S. Multinational Corporations, GAO-08-950. But these data are not based on a linked sample in which companies had foreign operations in both years. The difference from our data may be the beginning of foreign operation by formerly purely domestic companies.

of income abroad. The active finance exception reintroduced in 1997, which allowed companies to defer active financial income abroad, does not seem to be significant for this group of companies, *apart from any impact it may have had on companies' effective tax rate on foreign income.* (A brief analysis of financial companies, which make up a rather small portion of the linked sample, appears at the end of the paper.)

How much could the decline in foreign tax rates, of about 5 percentage points from 1996 to 2004, explain of the remaining 'unexplained' 3.1 percentage point increase in the foreign share of income? The .439 coefficient in the first regression on Table 4 suggests that the falling foreign tax rate contributed about 2.2 percentage points to the increased foreign share. The combined effect of lower foreign tax rates, including the 4 percentage point higher foreign share attributable to 1996 rates and the effect of the widening of the disparity between foreign and domestic rates from 1996 and 2004, amounts to a higher foreign share of about 8 percentage points by 2004. This suggests a substantial impact on U.S. tax revenues of at least \$20 billion per year.

It is difficult to identify any impact of the repatriation tax holiday anticipated for 2005. In regressions for the change in the foreign share from 1996 to 2004 (not shown), the change in the foreign tax rate is significant, not an initially low rate in 1996 that would promote larger deferrals. In addition, large accumulations of income not previously taxed (by the United States) in 1996 or 2004 did not contribute to any increase in the foreign share. Neither did the amount of a company's subpart F income, which would largely derive from accumulated financial assets.

### **The Sources of Falling Effective Foreign Tax Rates**

We now proceed in Table 5 to evaluate the sources of the decline in the effective tax rate on foreign income using the nonfinancial cross-section used in the previous tables. One possible contributor is the check-the-box provision implemented in 1997. The measure of a company's use of check-the-box, which facilitated 'hybrid' entities, is based on whether its CFCs report owning a 'disregarded entity'. If the CFC does, it receives a score of one and the parent level score is derived by weighting each CFC score by its earnings.

Another possible contributor to the change in a parent's overall effective tax rate is the introduction of the active finance exception in 1997. Many nonfinancial companies

have significant financial components. The financial variable is a dummy which receives a score of one in if the company had income in the financial services basket in 1996.

The other independent variables in Table 5 are the R&D and advertising intensity of the parent, a dummy variable for incorporation since 1980, the level of the foreign effective tax rate in 1996, the foreign profit margin on sales in 1996, and a size variable, the log of company sales in 1996. R&D may play a role through companies' ability to use hybrid entities and cost sharing agreements to strip income from high tax countries. A high foreign tax rate and large foreign profit margin create the incentive for tax planning to lower foreign tax burdens.

In the first regression, for the change in the average foreign rate from 1996 to 2004, the check-the-box variable is significant at the 10 percent level and negative. As expected companies, companies used hybrid entities to lower their foreign tax rates. Parent R&D intensity also has a negative coefficient significant at the 10 percent level, consistent with the use of cost sharing agreements and hybrid entities to lower foreign tax burdens. Furthermore, when the hybrid variable is interacted with both the 1996 foreign tax rate and parent R&D intensity in the last regression in Table 5, both coefficients are highly significant, one at the 5 percent level and the other at the one percent level. Check-the-box had a significant effect.

The financial services dummy also has a negative coefficient but in the first regression it fails to be significant even at the 10 percent level. In the last regression with the interaction variables, it is significant at the 10 percent level. It suggests that the active finance exception may have had an effect in inducing companies to lower their foreign tax burdens. In addition, as expected the foreign profit margin has a negative coefficient and it is easily significant at the 5 percent level. High profitability abroad increases the pressure for lowering foreign rates.

In the second and third regressions in Table 5, the dependent variable is the average foreign tax rate in 2004. The results are generally consistent with the first, change in foreign tax rate regression.

In the fourth regression the dependent variable is the check-the-box variable itself, the extent which a company uses hybrid entities. The R&D intensity of the parent is significant, just missing the one percent level. The foreign share of income in 1996,

which reflects both the relative size of foreign operations and their profitability, is highly significant. Surprisingly, the foreign tax rate in 1996 is completely insignificant in explaining companies' use of check-the-box. We would have expected a high foreign tax rate to motivate a greater use of hybrids.

The hybrid coefficient in the first regression, combined with the mean of the variable to get the mean effect, suggests that hybrid entities 'contributed' about 2 percentage points of the approximate 5 percentage point decline in foreign tax rates. This is consistent with the finding by Altshuler and Grubert (2005) that U.S. companies had used check-the-box to lower their foreign tax burden annually by approximately \$7.0 billion by 2002. Similarly, the coefficient for the financial services variable, combined with the frequency of the dummy, suggests that the active finance exception may have contributed about one percentage point of the decline.

### **The Financial Companies**

Finance companies account for 12 percent of the foreign income in the sample in 2004. Their total foreign income increased from 16.78 percent of worldwide income in 1996 to 25.03 in 2004. Income deferred abroad increased from 9.94 percent of worldwide income in 1996 to 17.61 percent of worldwide income in 2004. While the finance companies as a whole are less globalized, at least in terms of the location of income, their income and deferrals abroad increased similarly to nonfinancial multinational companies. In addition, their average foreign tax rate declined by about the same amount, about 5 percentage points.

However, the growth of domestic losses was not important, amounting to less than one percent of worldwide income in 2004. On the other hand, the financial companies that were most globalized to start with tended to grow the fastest. That seems to explain almost half of the increase in the foreign share of financial companies' worldwide income. Perhaps the companies that were already highly globalized were the ones who could most benefit from the new deferral opportunities offered by the active finance exception.

### **Summary and Conclusions**

Table 6 presents rough estimates of the various sources of the 14 percentage point increase in the foreign share of worldwide MNC income earned by nonfinancial

corporations. The first column gives the basic three components of the 14 percentage point shift: the growth of domestic losses, the growth of companies' profits holding their 1996 foreign share constant, and finally the change in companies' foreign share. The second column presents estimates of the contribution of taxes to each component. The third column gives estimates of the extent to which changes in U.S. tax rules contributed to the change in the foreign effective tax rate.

1. The growth of domestic losses contributed about 6 percentage points of the 14 percentage point increase in the foreign share of worldwide income. Tax considerations seem to have played a role in the growth of domestic losses. The fall in the average foreign tax rate contributed perhaps 0.5 to 2.0 percentage points of the 6 percentage point contribution of growing domestic losses.

2. The rapid growth of companies that already had a large share of income abroad in 1996 added about 5 percentage points to the increase in the foreign share of income. In turn, the discrepancy between U.S. and foreign effective tax rates appears to have increased the foreign share of income in 1996 by about 4 percentage points. It is notable that lower foreign effective rates reduced domestic profit margins and increased them abroad. However this factor only explains about one percentage point of the 14.0 percentage point growth in the foreign share.

3. The decline in average foreign effective tax rates from 1996 to 2004 added about 2.0 percentage points to the foreign share. This was almost exclusively through its impact on domestic and foreign profit margins on sales rather than through changes in foreign and domestic sales.

In sum, therefore, the level of effective foreign tax rates and changes from 1996 to 2004 contributed about 4.0 percentage points of the 14.0 percentage point increase in the foreign share of MNC worldwide income. As indicated in the last row of Table 6, the combined effect of initial foreign tax rates in 1996 and the widening of the foreign-domestic tax differential from 1996 to 2004 amounts to an increase in the 2004 foreign share of MNC income of about 8 percentage points. That translates into a significant reduction of U.S. tax revenues of about \$20 billion per year.

4. Check the box, which facilitated the stripping of income from high tax to low tax foreign countries seems to have contributed about 2 percentage points of the approximate

5 percentage point decline in foreign effective tax rates. The active finance exceptions added about another one percentage point. Any impact of the active finance exception only seems to be through its impact in encouraging lower effective tax rates, not through a direct effect on activity.

5. The anticipated 2005 tax holiday for repatriations did not have any influence on the changing split between foreign and domestic income.

6. It is difficult to detect any significant effect of lower foreign tax rates on domestic sales. The positive effects cited by the 'tax havens are good' analysts and the negative effects cited by the 'export of jobs' analysts seem to cancel out.

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Table 1  
**Foreign and Domestic Losses\***  
 Nonfinancial Companies

Dependent Variable	Foreign Tax Rate 1996	Worldwide Profit Margin on Sales 1996	Foreign Tax Rate 2004	Worldwide Profit Margin 2004	Use of Hybrids	Foreign Losses/Sales 1996	Foreign Losses/sales 2004
Domestic Loss/Domestic Sales 1996	-0.0041 (.85)	0.097 (8.32)					
Domestic Loss/Domestic Sales 2004			0.0292 (2.41)	0.0228 (1.45)	-0.0007 (.42)		
Domestic Losses/Domestic Sales 1996						0.028 (1.59)	
Domestic Losses/Domestic Sales 2004							-0.0069 (.71)

Notes to Table:

\* t values in parentheses

N = 684

The domestic loss variable is the size of the domestic loss if there is one and zero otherwise.

Table 2  
Worldwide Income Growth and the Foreign Share in 1996

	Dependent Variable	
	Growth of Worldwide Income 1996-2004	Growth of Foreign Share 1996-2004
Foreign share of Income 1996	1.30 (5.86)	
R&D/Sales 2004	-.260 (.05)	1.40 (1.42)
Advertising/Sales 2004	.812 (.32)	-1.51 (2.89)
Incorporation since 1980	.300 (1.55)	-.087 (2.18)
log of worldwide sales 1996	-.121 (1.73)	-.055 (3.53)
Change in foreign tax rate 1996- 2004		-.444 (4.26)
Finance Dummy		-.0021 (.03)
Growth in Worldwide Income 1996-2004		-.108 (10.29)

\* N = 350

\* t values in parentheses

Table 3  
Foreign Share of Income and Profit Margins 1996\*

Dependent Variable	Parent R&D/Sales	Parent Advertising/Sales	Young Company	Average Foreign Tax Rate
Foreign Share of Worldwide Income	1.91 (1.18)	0.41 (.76)	.016 (.34)	-.417 (2.74)
Domestic Profit Margin on Sales	1.36 (3.61)	.309 (2.50)	.017 (1.57)	.091 (2.58)
Foreign Profit Margin on Sales	.759 (1.44)	.042 (.24)	.013 (.84)	-.143 (2.90)

\* **t** values in parentheses  
N = 347

Table 4  
Changes in Foreign Share, Profit Margins, and Sales\*  
1996 – 2004

Dependent Variable	Change in Average Foreign Tax Rate	Parent R&D/Sales 2004	Parent Advertising/Sales 2004	Incorporation after 2000	Size: Log of Sales 1996	Financial Services Dummy	Change in Foreign Share of Sales
Change in Foreign Share	-.439 (3.68)	1.15 (1.02)	-1.49 (2.62)	-.124 (2.75)	-.054 (3.02)	.030 (.41)	
Change in Domestic Profit Margin	.062 (1.82)	-.513 (1.58)	..551 (3.21)	.006 (.49)	.015 (2.95)	.004 (.18)	
Change in Foreign Profit Margin	-.115 (2.58)	.190 (.45)	.088 (.41)	.015 (.89)	-.012 (1.76)	-.012 (.45)	
Change in Log of Domestic Sales	.231 (1.04)	1.63 (.78)	-2.54 (2.28)	.046 (.54)	-.012 (.37)	-.185 (1.36)	
Change in Log of Foreign Sales	.852 (2.00)	1.89 (.47)	-.986 (.46)	-.037 (.23)	-.018 (.28)	-.220 (.85)	
Change in Foreign Share of Total Sales	-.064 (1.25)	.270 (.40)	-.478 (2.17)	-.005 (.25)	-.008 (1.06)	.014 (.45)	
Change in Foreign Share	-.422 (3.56)	.894 (.79)	-1.65 (2.79)	-.125 (2.77)	-.051 (2.88)	.025 (.35)	.269 (2.16)

\* N = 356

\* t values in parentheses

Table 5  
Sources of Change in Effective Foreign Tax Rate\*  
1996-2004  
Nonfinancial Companies

Dependent Variable	Use of Hybrids	Parent R&D Intensity 2004	Advertising Intensity 2004	Incorp. Since 1980	Foreign Profit Margin 1996	Financial Dummy	Foreign Effective Tax Rates 1996	Foreign Share of Income 1996	Size : Log of Sales 1996	Hybrid* Tax	Hybrid* R&D
Change in Foreign Effective Tax Rate	-.0365 (1.78)	-.673 (1.88)	.253 (1.35)	.0133 (.93)	-.110 (2.21)	-.0319 (1.55)	-.891 (19.16)				
Foreign Effective Tax Rate 2004	-.0365 (1.78)	-.673 (1.88)	.253 (1.35)	.0133 (.93)	-.110 (2.21)	-.0319 (1.55)	.109 (2.34)				
Foreign Effective Tax Rate 2004	-.0385 (1.86)	-.559 (1.57)	.223 (1.18)	.0116 (.81)	-.128 (2.57)	-.0326 (1.57)					
Use of Hybrids		3.16 (2.56)	-.321 (.79)	.0336 (.93)		.0194 (.33)	-.0149 (.13)	.0475 (3.29)	.0475 (3.29)		
Change in Foreign Effective Tax Rate	.052 (1.56)	.0432 (.10)	.288 (1.55)	.0133 (.94)	-.106 (2.14)	-.037 (1.81)	-.819 (13.94)			-.248 (2.15)	-3.66 (3.24)

\* N = 350

\* t values in parentheses

**Table 6**  
**Components of Aggregate Increased Foreign Share and the Role of Taxes**  
**(Nonfinancial Companies)**

	Component in Percentage Points	Contribution of Foreign Tax Rate	Sources of Change in Foreign Tax Rate
<b>Increased Domestic Losses</b>	6.0		
Contribution of Foreign Tax Rate		.5 to 2.0	
<b>Actual Company Income Growth Holding 1996 Share Constant.</b>	5.0		
(Contribution of Foreign Versus U.S. Effective Tax Rates in 1996 to Initial Share)	(4.0)		
Contribution of 1996 tax differential to growth in foreign share		1.0	
<b>Letting Company Foreign Shares Vary</b>	3.0		
Effect of Change in Foreign Tax Rate On Profit Margins		2.0	
Effect on Foreign and Domestic Sales		0.0	
<b>Sources of Change in Effective Foreign Tax Rate (Total = 5 Percentage Points)</b>			
Check-the-Box			2.0
Active Finance Exception			1.0
<b>Total Effect of Taxes on Change in Share</b>		3.5 to 4.0	
<b>Total Effect of Taxes on Level of Foreign Share in 2004</b>		8.0	