



# The Foreign Tax Credit's Interest Allocation Rules

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## Summary

The foreign tax credit alleviates the double-taxation that would result if U.S. investors' overseas income were to be taxed by both the United States and a foreign country. U.S. taxpayers credit foreign taxes paid against U.S. taxes they would otherwise owe, and in doing so concede that the country where income is earned has the primary right to tax that income. But the United States retains the primary right to tax U.S.-source income, placing a limit on the foreign tax credit: foreign taxes can only offset the part of a U.S. taxpayer's U.S. tax that falls on foreign source income. It is this limit to which the American Jobs Creation Act of 2004 (P.L. 108-357, Jobs Act) applied. To calculate the limit, a firm separates its revenue and costs, for tax purposes, into those having a foreign source and those having a U.S. source. Foreign taxes can offset U.S. tax on revenue "sourced" abroad; in effect, foreign-source income is exempt from U.S. tax for firms whose foreign tax credits exceed the limit (firms with "excess credits"). But because deductions allocated abroad reduce U.S. tax, the effect is the same as if deductions allocated to foreign sources can not be claimed for U.S. tax purposes.

If a U.S. firm has foreign investments, current law requires at least part of the U.S. interest to be allocated to foreign sources based on the theory that debt is fungible—that regardless of where funds are borrowed, they support a firm's worldwide investment. But multinational firms have argued that if part of domestic interest is allocated abroad, part of foreign interest should be allocated to the United States, which would reduce U.S. tax. (Some critics have suggested, however, that granting multinationals tax benefits through interest allocation revisions should be accompanied by restrictions on the benefit of deferral, which allows taxes.)

This worldwide allocation rule was adopted in the Jobs Act, but has not yet been implemented. The Jobs Act called for implementation starting in 2009, while P.L. 110-289 has subsequently delayed implementation until 2011. Other bills introduced in the 110<sup>th</sup> Congress, including H.R. 3920, H.R. 5720, H.R. 6049, and H.R. 7060, would have also delayed or repealed the implementation of the worldwide interest allocation rule.

The analysis here suggests that current law's interest allocation rules are likely imperfectly structured to achieve the objective of the foreign tax credit limit and that worldwide allocation of interest as enacted by the Jobs Act, while losing revenue, would probably be more consistent with the basic objective of the foreign tax credit limit. Tax planning techniques however, could undermine this objective and cause further revenue loss. And, like the foreign tax credit limit itself, allocation rules contribute to tax distortions which may be heightened with worldwide allocation. Further, an expansion of the bank "subgroup" elections contained in the Jobs Act may not be consistent with the general objective of worldwide allocation of interest. Although the Jobs Act contains anti-abuse rules, these subgroup elections may permit firms to avoid the impact of the interest allocation rules. This report will be updated as legislative events warrant.

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**T**he American Jobs Creation Act of 2004 (P.L. 108-357; the Jobs Act) contained a number of provisions related to the taxation of multi-national corporations. Among these provisions were more generous rules for multinationals to use in allocating interest expense for purposes of the U.S. foreign tax credit. This rule is referred to as the “worldwide” allocation of interest and it is the subject of this report. The act’s changes are due to take effect for tax years beginning after December 31, 2008. The implementation was, subsequently, delayed until tax years beginning after December 31, 2010, by P.L. 110-289. Other proposals introduced in the 110<sup>th</sup> Congress, including H.R. 5720, H.R. 6049, H.R. 3920, and H.R. 7060, would have also delayed or repealed the worldwide interest allocation rule.

The Jobs Act’s interest allocation provision was designed to correct what some argue was an imperfection in the design of the foreign tax credit rules. In general, the tax code places a limit on the foreign tax credit. To calculate the limit, firms are required to separate interest and other expenses according to source—foreign or domestic. Because of effects detailed below, the more interest that is assigned to domestic sources, the more foreign tax credits a firm can claim and the lower its U.S. tax liability. Some believed that the prior law’s approach unduly left taxpayers exposed to double taxation of foreign-source income.<sup>1</sup> The Jobs Act addressed this perceived flaw.

The analysis here indicates that worldwide allocation rules, while losing revenue, would likely be better aligned with the objective of the foreign tax credit. Tax planning techniques could undermine this objective—and lead to increased revenue loss and efficiency costs.

The act contained another relevant modification to the interest allocation rules, that would increase a firm’s creditable taxes. Specifically, the provision expands the subgroup election for banks to include other financial intermediaries, including insurance companies—which allows for the separate calculation of interest allocation. This provision could insulate some firms from a portion of the interest allocation rules, and it is at odds with the theory underlying the act’s other provisions.

## **Function and Mechanisms of the U.S. Foreign Tax Credit**

The United States—in principle—taxes its resident corporations and individuals on their worldwide income, regardless of where it is earned, under the residence rule. The foreign tax credit and deferral, are the key structural pieces of the U.S. taxation of foreign-source income. The foreign tax credit provisions generally permit U.S. taxpayers to credit foreign taxes they pay against U.S. taxes they would otherwise owe—on a dollar-for-dollar basis. For example, a U.S. corporation chartered in North Dakota is potentially subject to U.S. tax on income it earns outside the United States. Concurrently, however, the foreign countries where the income is earned generally tax that income, even if it is earned by a foreign (U.S. in this case) investor, under the source principle. In the absence of the foreign tax credit, this income would potentially face double-taxation and possibly very high tax rates.

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<sup>1</sup> U.S. Congress, Joint Committee on Taxation, *General Explanation of Tax Legislation Enacted in the 108<sup>th</sup> Congress*, JCS-5-05, May 2005 (Washington: GPO, 2005).

The foreign tax credit, however, generally alleviates the possibility of double-taxation of foreign-source income. With the credit, the U.S. concedes that the country where income is earned has the primary right to tax that income and collect the tax revenue that it generates.<sup>2</sup> This results in the U.S. collecting only the U.S. tax due after paying foreign taxes—if positive. As such, the foreign tax credit helps to define the U.S. tax jurisdiction and it is not a tax expenditure favoring selected groups. While theoretically straight-forward, overlapping jurisdictions introduce numerous complications. To better understand interest allocation rules, it is useful to first examine two key structural pieces: deferral and the foreign tax credit limitation.

## **Deferral**

As noted above, deferral is one of the key structural pieces of the U.S. taxation of foreign-source income. U.S.-owned firms can conduct their foreign operations through foreign chartered subsidiaries. Unlike U.S. chartered firms, these foreign-chartered corporations are generally taxed only on income earned in the United States. Thus, where a U.S. parent firm invests abroad through a foreign chartered subsidiary, U.S. taxes do not apply to its foreign income, as long as the income is reinvested abroad.<sup>3</sup> U.S. taxes are, in other words, deferred or postponed. Because of discounting, firms view the cost of taxes paid in the future as less than an identical amount paid in the present. U.S. taxes do apply when the income is repatriated to the U.S. parent firm as intra-firm dividends.

Foreign tax credits can be claimed with respect to U.S. tax on dividends received from foreign subsidiaries. In addition to the direct credit, “indirect” foreign tax credits can be claimed by a U.S. parent firm for foreign taxes paid by the subsidiary during the time the income was tax-deferred.<sup>4</sup>

## **Foreign Tax Credit Limitation**

As noted above, the U.S. concedes that the country where income is earned has the primary right to tax that income and collect the tax revenue that it generates. The U.S. retains, however, the primary right to tax U.S. source-income. In order to protect its domestic tax base, the U.S. imposes a limitation on the foreign tax credit.<sup>5</sup> In effect, the tax code only allows foreign tax credits to offset the U.S. tax on foreign source-income. Any foreign taxes paid in excess of the limit become “excess credits” and can be carried back one year and carried forward up to 10 years.<sup>6</sup>

The foreign tax credit and its mechanics can be understood clearly by looking at the tax rate on foreign income that is produced by the foreign tax credit. With the foreign tax credit and its

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<sup>2</sup> That is, the resident principle is subordinate to the source principle when the two are asserted by different jurisdictions.

<sup>3</sup> Income received under Subpart F rules, which are aimed at sheltering activities, is not eligible for deferral.

<sup>4</sup> While the U.S. parent can claim indirect foreign tax credits with respect to dividends, the dividends are also “grossed up” by the amount of the foreign tax before they are included in the parent’s taxable income. Thus, a parent’s taxable dividend from foreign sources is  $1/(1-t)$ , where  $t$  is the foreign tax rate.

<sup>5</sup> In the absence of a limit, foreign countries could, in theory, divert tax revenue from the U.S. by simply raising their taxes on U.S. investors—without fear of placing additional burdens on the U.S. firms themselves.

<sup>6</sup> Firms whose foreign taxes exceed the limit are said to be in an excess credit position.

limitations, a U.S. investor pays total taxes (U.S. plus foreign taxes) on foreign income at an average rate equal to the higher of the U.S. pre-credit tax rate or the foreign tax rate. For example, if a firm pays U.S. tax at a 35% rate and the foreign tax rate is 10%, its total tax on foreign income would consist of the 10% foreign tax plus the 25% of U.S. tax that remains after the 10% offset by the foreign tax credit.<sup>7</sup> If, instead, the foreign tax rate is 50%, the firm could offset all of its U.S. tax on foreign income with the foreign tax credit, and would pay only foreign taxes—at a 50% rate.<sup>8</sup>

If a firm is in an excess credit position—its foreign taxes exceed U.S. tax on foreign-source income—the sourcing of income and deductions matters. Under the foreign tax credit limitation, maximum creditable foreign taxes are limited to the amount of U.S. pre-credit tax falling on foreign source income rather than domestic-source income. It follows that if, for example, an item of revenue is determined to have a foreign rather than U.S. source, then the maximum foreign tax credit is increased because foreign income and the share of U.S. pre-credit tax falling on foreign income is increased. The reverse is true with deductions; a deduction allocated to foreign rather than U.S. sources reduces foreign income and U.S. pre-credit tax on foreign income; it reduces creditable foreign taxes and increases after-credit U.S. tax.

## **Interest Allocation Rules**

Whether an expense is deducted from foreign or U.S. income matters for tax purposes. The tax code, therefore, contains rules for allocating deductions between foreign and U.S. sources. In the case of interest expense, the rules generally are based on the approach that money is fungible and that interest expense is properly attributable to all business activities and property of a taxpayer, regardless of any specific purpose for incurring an obligation on which interest is paid. For example, a U.S. parent company might borrow in the U.S. and use the funds to increase its equity stake in a foreign subsidiary, which uses those borrowed funds to make its own investments. Conversely, a U.S. firm could borrow domestically to finance domestic investment—investment that might otherwise have been financed through repatriated earnings. In this case, domestic borrowing may support both domestic and foreign investment.<sup>9</sup>

While it is beyond the scope of this report to determine if the fungibility of debt is a reasonable assumption, except to recognize that it underlies both the current interest allocation rules and those enacted by the Jobs Act, some facts on each side are worth noting. First, in favor of fungibility, corporations are legal entities, and not economic ones. As a result corporate boundaries can be easily manipulated for financial gain. Conversely, the existence of cross-jurisdictional interest rate differentials suggest that fungibility may not hold between all jurisdictions.

Current law applies the fungibility principle in a manner sometimes referred to as “waters edge” allocation. Under this system, foreign subsidiaries are not explicitly included in the allocation. This has two implications for the allocation formula. First, only a domestic parent’s equity stake in its foreign subsidiary is counted as an asset—excluding the foreign subsidiary’s assets financed by debt. The parent’s assets, in contrast, are all included in the calculation—whether financed by

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<sup>7</sup> Thus, the total tax rate is 35%—10% plus 25%.

<sup>8</sup> These relationships assume a uniform definition of taxable income in the U.S. and foreign countries.

<sup>9</sup> This implies a fungibility of equity, i.e. the subsidiary’s retained earnings support investment at home and abroad.

equity or debt. Secondly, the subsidiary's interest expense is automatically allocated to foreign sources. This occurs since the subsidiary's interest expense reduces dividend payments to the parent, which are all allocated to foreign sources.

## **“Worldwide” Allocation**

An alternative to the “waters edge” allocation is a “worldwide” allocation regime, such as enacted by the Jobs Act.<sup>10</sup> Under a “worldwide” allocation, the borrowing of foreign subsidiaries would be taken into account. This change would have two effects, which combined, increase the foreign tax credit limit of multinationals and therefore decrease after-credit U.S. taxes. The first effect involves including interest of the foreign subsidiary. By allocating a portion of foreign debt to domestic use, this reduces foreign source deductions, increases foreign source income, increases the foreign tax credit limit and reduces U.S. tax liability. The second effect involves counting foreign subsidiary, debt financed assets as part of the worldwide asset base of the parent company. Taken in isolation, this would allocate more interest to foreign sources and raise U.S. tax liability. Mathematically, however, the first effect dominates—so tax liability is reduced under worldwide allocation.

## **The Advantages of Worldwide Allocation**

One can argue that worldwide allocation more accurately limits the foreign tax credit to income that is attributable to a foreign source, as long as borrowed funds are fungible. Briefly, this perspective results as follows: if it is true that borrowing in one location finances investment in all locations equally; then it is true that borrowing domestically or abroad should not alter the share of income earned domestically or abroad. Remembering that the purpose of the foreign tax credit limitation is to protect the U.S. tax base, while minimizing double-taxation of foreign-source income, it then follows that location of borrowing should not affect the maximum creditable foreign taxes. Under current law, the limitation can be affected by shifting the borrowing location.

## **Disadvantages of Worldwide Allocation**

While worldwide allocation would achieve a more accurate foreign tax credit limitation, there are also some complications and disadvantages to such an approach, including administrative complications, tax planning complications, and increases in investment distortions (even though U.S. revenue is lost). Also, if interest rates vary across jurisdictions, it isn't clear whether fungibility of borrowing is pervasive and that worldwide allocation of interest is completely appropriate to achieving the goal of limiting the foreign tax credit to income that is attributable to a foreign source.

## **Administrative Complications**

One obvious disadvantage of worldwide allocation is that it would require foreign subsidiaries, which are not always wholly owned by U.S. firms, to classify their assets and borrowing for U.S.

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<sup>10</sup> The interest allocation provisions of the Jobs Act become effective for taxable years beginning after December 31, 2008.

tax purposes as having a U.S. or foreign location. This change would complicate both IRS tax administration and firm compliance.

## **Tax Planning**

A second issue with worldwide allocation is the possibility that firms could artificially increase their gross foreign assets to eliminate any interest allocation. Under worldwide allocation, there are no decreases in the foreign tax credit limit if the foreign subsidiary has a debt to asset ratio as high or higher than the parent company. However, if firms could borrow and redeposit funds, they could increase their debt to gross asset ratios. For example, suppose a parent company has \$100 million in assets and its subsidiary also has \$100 million in assets, with only \$50 million in debt attributable to the parent company. Under both current and pending law, half of the debt (\$25 million) would be allocated to the subsidiary. This allocation is consistent with the worldwide fungibility of debt. Suppose, however, that the subsidiary could borrow \$100 million and redeposit the \$100 million in a bank account, then no allocation would occur. The subsidiary would now have \$200 million in gross assets, two-thirds of the total, gross debt would be \$150 million and \$50 million would be allocated to domestic uses.

The possibility of borrowing is one reason to restrain the allocation to a non-negative one; otherwise this technique could be used, at the extreme, to further reduce U.S. tax liability and to render the foreign tax credit limit meaningless.

While this discussion outlines a possible tax planning technique; firms may not choose to use it and that transaction costs could reduce the value of the technique. It does illustrate that at an extreme, tax planning could eliminate the allocation rules entirely. It is possible that other methods could be used to prevent such abuses, but they would likely be complex and add to the administrative complications, mentioned above.

## **Economic Efficiency**

Another worldwide allocation issue concerns economic efficiency. As noted above, the purpose of the foreign tax credit limit is not to ensure the efficient allocation of resources; rather, it is concerned with protecting the U.S. tax base. The impact of worldwide allocation on the ability of the economy to efficiently allocate investment and borrowing among different locations, however, can be viewed as one cost of fine-tuning the foreign tax credit limitation. In some respects, worldwide allocation might create greater distortions in the allocation of debt and equity capital, relative to the non-tax allocation.

First, worldwide allocation magnifies tax-based incentives to borrow abroad—an important consideration if debt is not fungible, as assumed. Allocating interest on the worldwide basis of aggregate capital stock, for purposes of the foreign tax credit limit, effectively reduces borrowing in the U.S. and increases it abroad. In effect, any savings can be calculated by multiplying the foreign tax rate times the interest shifted abroad. For example, if the interest rate were 10 percent and the foreign tax rate 40 percent, a \$100 dollar shift in debt from the U.S. to a foreign locale would save the company \$4. If there were no allocation rules, however, then the shift in debt abroad would lead to a larger interest deduction abroad, but a smaller foreign tax credit limit, because the flow of dividends is net of interest costs. In this case, the benefit of shifting is the difference in the tax rates. Continuing our example, the foreign tax rate is 40 percent and the U.S. tax rate is 35 percent, so that the savings is only \$0.50 (0.05 times the interest). The current



system is in between these two cases; the allocation of domestic interest does mean that a shift in the debt abroad has an effect in reducing the foreign tax credit limitation, but not the effect that would occur with no allocation rules.

Similarly, the degree to which equity investment is discouraged in the high tax countries (a general efficiency problem with international taxation), while minimized when there is no allocation rule at all, is likely to be larger with the worldwide allocation system than with the current allocation system.

The efficiency effects of shifting both debt and equity abroad simultaneously would be more complex and depend upon the level of debt by the parent firm and other factors. In some cases, the current allocation rules cause more distortions and in some cases they reduce distortions.

Overall, the best system for minimizing the distortions in both the allocation of borrowing and equity investment is to have no allocation rules at all. Nevertheless, if the parent tends to do most of the borrowing (which may occur for a variety of non-tax reasons), having no allocation rules could cause a significant loss of U.S. revenue compared to both the current system and to the worldwide approach. That is, some efficiency cost is necessary to protect the U.S. tax base. In both cases, however, partial allocation rules are less distortionary than full allocation rules. The rules are less clear with respect to investment shifts that occur simultaneously with debt shift.

These issues become more complicated when considering multiple country investments. Since firms are generally not required to calculate separate foreign tax credit limits for different countries, firms can use excess credits from one country—a high tax country—to shelter income from a low tax country from U.S. tax. Accordingly, even if a firm is in an excess credit position and makes interest allocations, it will still be faced with an incentive to invest in low-tax countries. Moreover, it is difficult to make precise judgements about economic efficiency when the tax system is not efficient in other ways, such as with deferral. Nevertheless it is interesting that there are cases where a change in the allocation rules that lowers taxes of multinational corporations can magnify distortions.

### **Interest Rate Differentials**

A final complication relating to interest allocation rules is the possibility of interest rate differentials. In a perfect world with completely mobile capital, such interest rate differentials would not occur. However, if the domestic savers prefer investing in particular locations or there are differences in risk across locations, such differentials may arise. In particular, if foreign interest rates are higher than U.S. rates, worldwide allocation rules will have a larger effect increasing the foreign tax credit limit than would be the case where interest rates are identical.

It is difficult to ascertain how these interest rate differentials should influence the allocation process. Certainly, the presence of interest rate differentials suggests that the very presumption of fungibility is in question, and also suggests that the presumed standard that justifies worldwide allocation—equal debt-to-equity ratios—may not be the case. While beyond the scope of this paper, this area may need further exploration.

## Subgroup Elections

Along with allowing firms to allocate interest expense on the basis of worldwide groups, the Jobs Act contained an additional related change. Current law contains a subgroup election for firms that are banks. The act expands this election to a wider range of financial intermediaries, including finance companies and insurance firms. Such an election could, potentially, reduce the amount of interest a worldwide group is required to allocate to foreign sources. For example, a firm that has a financial subsidiary which conducts genuine financial intermediation could arrange to have a portion of the non-financial part of the firms' borrowing undertaken by the subsidiary. If the financial subsidiary's assets are principally located in the U.S., borrowing through the subsidiary could be insulated from allocation rules. More directly stated, firms could distribute their borrowing among related subsidiaries to minimize foreign allocations of interest. The act does contain anti-abuse provisions whose apparent intent is to limit such arrangements. Nonetheless, it remains to be seen if the anti-abuse provisions will be effective in limiting such arrangements.

As mentioned above, the Jobs Act contains a number of rules intended to limit the extent to which the expansion of the bank group election can be used to avoid interest allocation. For example, the act would limit the extent to which a subgroup member can increase the portion of its earnings it pays to the parent as dividends. This rule is, presumably, designed to limit the means by which a subgroup can borrow and subsequently transmit debt to its parent. If the subgroup is new, however, the rules for calculating average dividends are confined to the subgroups' years in existence, which may provide a mechanism for avoiding the limitation.

In short, the act's subgroup election provision appears to present potential opportunities for firms to avoid the allocation of interest according to the fungibility principle. Unlike the act's other changes in the allocation rules (discussed above), this feature of the bill appears to move the system away from the "theoretically pure" foreign tax credit limitation under the assumption of fungibility.

## Conclusion

The analysis in this report suggests that there are benefits and disadvantages to worldwide allocation of interest enacted by the Jobs Act. If debt is fungible, worldwide allocation is the most accurate method of ensuring that the U.S. foreign tax credit is used for its intended purpose: allowing the foreign tax credit to offset the full share of U.S. pre-credit tax that falls on foreign source income. Absent additional rules, however, opportunities for tax planning may limit the achievement of this objective. Also, like the foreign tax credit limit itself, allocation rules tend to contribute to the distortions that discourage equity investment abroad. Adopting worldwide allocation rules could, in several ways, increase these distortions relative to current law. While the distortions created by current law can be viewed as a cost of collecting taxes—since they increase U.S. revenue—and potential increased distortion associated with worldwide rules cannot since they decrease U.S. revenue.

Finally, the subgroup election provision in the Jobs Act does not appear consistent with the general objective of the foreign tax credit limit or the act's own worldwide allocation regime. This subgroup election may permit firms to reduce the current domestic interest allocation costs, while achieving foreign interest allocation benefits.

## Appendix. Effects of Alternative Allocation Rules

This appendix derives the allocation rules that most accurately support the foreign tax credit limitation—the rules that most accurately limit creditable foreign taxes to U.S. tax on foreign-source income. While this ideal rule is one under which the location of borrowing does not affect the foreign tax credit limit for U.S. tax purposes, taxpayers could still change their overall (that is, foreign and U.S. combined) tax liability by switching the location of borrowing. The appendix continues by showing how the incentive to borrow abroad is affected by allocation rules. The discussion concludes with an analysis of how the allocation rules affect investment.

### Deriving Accurate Allocation Rules

The shape that accurate allocation rules take depends, crucially, upon the assumption of debt fungibility. As noted in the text, it is unclear whether fungibility accurately represents real world experiences. Since both current and enacted law both make this assumption, however, fungibility will be assumed—that debt supports investment in all locations, regardless of the borrowing locale.

With the assumption of fungibility, a shift in the location of borrowing should not shift the location of investment. Further, since investment produces income, a shift in the location of borrowing should not alter the proportion of income earned at home or abroad. Thus, for the foreign tax credit limit to be accurate, a firm should not be able to affect the limit by shifting its location of borrowing.

### The Basic Limitation without Allocation of Interest

Assume a multinational's U.S. tax liability can be expressed as:

$$(1) \text{ U.S. Tax} = t(Y + D/(1 - t_f) - iB_d) - tD/(1 - t_f);$$

where  $t$  is the U.S. tax rate,  $Y$  is U.S.-source income before interest deductions,  $D$  is dividends from a foreign subsidiary,  $t_f$  is the foreign tax rate,  $i$  is the interest rate, and  $B_d$  is domestic borrowing. The equation's first term represents the tax on worldwide income, with dividends grossed up to a pre-foreign tax basis, while the second term is the foreign tax credit, which is limited to the U.S. tax on grossed up dividends. The foreign tax credit is also limited to actual foreign taxes paid (or deemed paid, in the case of dividends). As a result, changing the base of the foreign tax credit only has an effect when a company is in an "excess credit" position—where the foreign tax rate is greater than the U.S. rate.

For this analysis, foreign subsidiary dividends are defined in terms of foreign earnings and other elements as:

$$(2) Y_f = D + R + iB_f + t_f(Y_f - iB_f);$$

where  $Y_f$  is foreign earnings before deducting interest,  $R$  is retained earnings, and  $B_f$  is borrowing by the foreign subsidiary. In all cases, the amounts would be scaled back for a subsidiary that isn't wholly owned (e.g., if a subsidiary is 90 percent owned, then all three values would be multiplied

by 0.9). Foreign earnings are the sum of dividends, retained earnings, interest payments, and foreign taxes. Therefore:

$$(3) D/(1 - t_f) = Y_f - R/(1 - t_f) - iB_f.$$

Thus, equation (1) can be rewritten:

$$(4) \text{U.S. Tax} - t(Y + Y_f - R/(1 - t_f) - iB_f - iB_d) - t(Y_f - R/(1 - t_f) - iB_f).$$

For a firm in an excess credit position, the limitation,  $L$ , is the last term:

$$(5) L = t(Y_f - R/(1 - t_f) - iB_f).$$

In this world, without allocation rules that require the allocation of domestic interest to foreign sources, the taxpayer could increase the limitation—and reduce their taxes—by shifting borrowing to their subsidiary (by reducing  $iB_f$  and increasing  $iB_d$  by equal amounts). Clearly, if fungibility is assumed, requiring no allocation rules does not result in an effective limitation.

### **Adjusting for the Fungibility of Borrowing: The Ideal**

For the limitation to be unaffected by the location of borrowing, geographic-specific borrowing cannot be a parameter in equation (5). That is, neither  $B_f$  nor  $B_d$  can appear in the equation. This condition is satisfied, incompletely, by replacing the term  $iB_f$  in the equation with  $iB_T$ . In this formulation, the limitation could be unaffected by the borrowing location with an allocation rule allocating all borrowing costs to foreign income, or, alternatively, to domestic income. Clearly, this is at odds with the assumption of fungibility. That is, if a firm has both foreign and domestic investment supported by borrowing, some portion of the interest on total borrowing must be allocated to foreign sources and that proportion must be independent of the borrowing locale. Thus, assuming fungibility, an accurate limitation can be written as:

$$(6) L = t(Y_f - R/(1 - t_f) - iAB_T);$$

where  $A$  is the portion of interest allocated to foreign sources. Fungibility requires that “ $A$ ” cannot be an arbitrarily chosen fraction (50%, for example), and that only the location of assets defines “ $A$ ”. Thus:

$$(7) A = K_f/K_T.$$

The ideal limitation can, therefore, be defined as:

$$(8) L^* = t(Y_f - R/(1 - t_f) - i((K_f/K_T)B_T)).$$

Next, we compare the current law's allocation and the Jobs Act's rules to this ideal formula.

### **Adjusting for the Fungibility of Borrowing: Current Law and the Jobs Act**

As noted in the text, current law requires part of domestic borrowing to be allocated to foreign sources. However, because the subsidiary's own interest payments reduce repatriated earnings and not domestic-source income, all the subsidiary's borrowing costs are automatically allocated to foreign sources. Thus the parameter  $B_T$  in the ideal limitation, equation (8), above, is replaced

by  $B_d$ . In addition, not all the subsidiaries' assets are included in the allocation rule,  $A$ —only the parent's equity stake in the subsidiary is included. Thus,

$$(9) A = (K_f - B_f)/(K_T - B_f) \text{ and}$$

$$(10) L = t(Y_f - R/(1 - t_f) - iB_f - i((K_f - B_f)/(K_T - B_f))B_d),$$

and since  $B_d = B_T - B_f$ ,

$$(11) L = t(Y_f - R/(1 - t_f) - iB_f - i((K_f - B_f)/(K_T - B_f))(B_T - B_f)).$$

Given that the limitation is, clearly, dependent on the location of borrowing—i.e. the respective values of  $B_f$  and  $B_d$ , current law violates the principle of fungibility. That is, a taxpayer can increase or decrease the limitation by shifting the borrowing location. While a full discussion of this topic is in the following section, below, note for now that  $dL/dB_f > 0$  and that a taxpayer can increase their limitation by shifting borrowing from domestic to foreign locations.

Given current law violates the principle of fungibility, let's turn to the JOBS Act's rules. As noted in the text, all assets of the subsidiary are included in the allocation formula. Thus, equation (7) is unchanged. Additionally, the interest expense of the subsidiary is also subject to allocation—both  $B_d$ , as in equation (9), and  $B_f$  are multiplied by  $A$ . This can be accomplished by allocating part of domestic interest to foreign sources and part of foreign interest to domestic sources—since foreign borrowing has already been netted out of the dividend. Thus, the limitation equation can be expressed as:

$$(12) L = t(Y_f - R/(1 - t_f) - iB_f - iB_d(K_f/K_T) + iB_f(K_d/K_T)).$$

This simplifies to:

$$(13) L = L^* = t(Y_f - R/(1 - t_f) - i((K_f/K_T)B_T)),$$

which is the ideal limitation formula, equation (8). As it is consistent with fungibility, the value of the limitation is independent of the location of borrowing, and it is proportional to the location of investment.

## Effects on Borrowing Location

In order to examine the effects of tax regimes on borrowing locale, we depart from the base model by adding foreign taxes. To simplify the analysis, we assume a single tax rate applies to both dividends and retained earnings. This analysis assumes that foreign tax authorities do not make allocation adjustments. Thus the total tax paid by a company can be expressed as:

$$(14) \text{ Total Tax} = t(Y + Y_f - R/(1 - t_f) - iB_T) - t(Y_f - R/((1-t_f) - iB_f - i((B_T - B_f)(K_f - B_f)/(K_T - B_f))) + t_f(Y_f - iB_f)$$

where  $t_f$  is the foreign tax rate.

This rule can be contrasted with the circumstances where there is no allocation rule in place:

$$(15) \text{ Total Tax} = t(Y + Y_f - R/(1 - t_f) - iB_T) - t(Y_f - R/((1-t_f) - iB_f) + t_f(Y_f - iB_f)$$

and the worldwide allocation rule, contained in the Jobs Act:

$$(16) \text{ Total Tax} = t(Y + Y_f - R/(1 - t_f) - iB_T) - t(Y_f - R/((1-t_f) - i(K_f/K_T)B_T) + t_f(Y_f - iB_f).$$

Totally differentiating equation (14) gives us the effect of shifting a small amount of debt from domestic to foreign use, under current law, as:

$$(17) \text{ Change in Tax} = -t_f i + t_i \frac{(K_T - K_f)}{(K_T - B_f)} * \frac{(K_T - B_T)}{(K_T - B_f)} * \text{Change in Foreign Debt}$$

When there is no allocation rule, the result is:

$$(18) \text{ Change in Tax} = (-t_f i + t_i) * \text{Change in Foreign Debt},$$

and finally, with worldwide allocation:

$$(19) \text{ Change in Tax} = -t_f i * \text{Change in Foreign Debt}.$$

Note that the largest incentive to borrow abroad occurs with the worldwide allocation, and the smallest incentive occurs with no allocation rules. Without allocation rules, the savings from shifting debt abroad is the difference between the tax savings from the foreign deduction and the tax savings from the domestic deduction. With worldwide allocation, worldwide interest is allocated the same way regardless of where it originates, so that the only effects that multiply the expression  $t_i$ , each one less than one, that dilute but do not eliminate the effect of the foreign tax credit limit. The first term is the direct effect from allocating domestic interest and the second is the effect of using net rather than gross foreign assets in the allocation formula.

## Effects on Equity Investment

Next, let us consider the effect of allocation rules on equity investment. To do so, we change the notation slightly to reflect the idea that gross income is the return on capital multiplied by the capital stock.<sup>11</sup> Under current law, the total tax of a firm can be expressed as:

$$(20) \text{ Total Tax} = t(rK_d + r_f K_f - R/(1 - t_f) - iB_T) - t(r_f K_f - R/(1 - t_f) - iB_f) - i(B_T - B_f)(K_f - B_f)/(K_T - B_f) + t_f(r_f K_f - iB_f)$$

where  $r$  is the return on U.S. capital and  $r_f$  is the return to foreign capital, both on a before-tax basis.

This rule can be contrasted with the circumstances where there is no allocation rule at all:

$$(21) \text{ Total Tax} = t(rK_d + r_f K_f - R/(1 - t_f) - iB_T) - t(r_f K_f - R/(1 - t_f) - iB_f) + t_f(r_f K_f - iB_f)$$

and the Jobs Act rule, with worldwide allocation:

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<sup>11</sup> For completeness, one would need to make a similar adjustment to retained earnings. In this analysis, however, retained earnings cancels out.

$$(22) \text{ Total Tax} = t(rK_d + r_f K_f - R/(1 - t_f) - iB_T) - t(r_f K_f - R/(1 - t_f) - (iB_T K_f / K_T)) + t_f(r_f K_f - iB_f).$$

In order to isolate the tax effect, consider the case where the pretax returns are equal—in practice they will not equal after the consideration of tax rules. Further, consider the case where very small, but slightly, different taxes are added to this, previously, case without taxes.

Next, we totally differentiating equations (20)-(22) with respect to  $K_f$ , which holds the firm's total capital stock fixed.

The change in the tax liability under current law with a reallocation of capital is:

$$(23) \text{ Change in Tax} = ((t_f - t)r + t_i(\frac{B_d}{K_T})) * \text{Change in Foreign Capital} (K_T - B_f^*).$$

When there are no allocation rules:

$$(24) \text{ Change in Tax} = (t_f - t)r * \text{Change in Foreign Capital},$$

and under worldwide allocation rules:

$$(25) \text{ Change in Tax} = ((t_f - t) + t_i \frac{B_T}{K_T}) * \text{Change in Foreign Capital}.$$

In all three cases, the tax systems discourage investment abroad, due to the high tax country. Allocation rules magnify this effect because the adjustment to the foreign tax credit limit increases with larger shares of the capital stock located abroad. In this case, however, the worldwide allocation rule will further discourage investment abroad because of a more powerful effect on the allocation rule. As a result, worldwide allocation is likely to be less efficient than domestic interest allocation with respect to disincentives for equity investment.<sup>12</sup>

## Effects on Investment Financed by Debt and Equity

Finally, we consider the effects on investment abroad that are financed by both debt and equity. Assume that the debt to asset ratio of the subsidiary is fixed, and that the total assets and debt of the parent and subsidiary are also fixed.

To consider the effects on equity investment, we again adjust our notation to reflect idea that gross income is the return on capital multiplied by the capital stock.

The equations from the previous section are modified to allow borrowing to change when the capital stock is altered. In examining the change in taxes for a given change in foreign assets, the tax effects of the change in foreign debt are incorporated. It is assumed that  $B_f$  bears a constant relationship of  $K_f$ . If the initial ratio of foreign debt to foreign assets is defined as the constant  $a$ , then  $B_f = aK_f$ , and a change in  $B_f$  is equal to  $a$  times the change in  $K_f$ . That assumption, along with the preceding assumption, allows the following derivations.

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<sup>12</sup> This only holds true in the most likely case—when the foreign debt to asset ratio falls below the domestic debt to asset ratio.

Under current law the effect of the change in tax can be expressed as:

$$(26) \text{ Change in Tax} = ((t_f - t) \otimes - iB_f/K_f + ti [(B_T - B_f)/(K_T - B_f)] [(-tiB_f)/(K_f)] \\ [((K_T - K_f)/(K_T - B_f)) + ((K_T - K_f)(B_T - B_f))/(K_T - B_f)^2] \\ * \text{ Change in Foreign Capital},$$

without an allocation rule:

$$(27) \text{ Change in Tax} = (t_f - t) \otimes - iB_f/K_f * \text{ Change in Foreign Capital},$$

and with worldwide allocation:

$$(28) \text{ Change in Tax} = (t_f - t) \otimes - iB_f/K_f + ti[(B_T/K_T) - (B_f/K_f)] \\ * \text{ Change in Foreign Capital}.$$

Again, in all three cases, the tax systems discourage investment abroad, due to the high tax country, although this effect is moderated by the deduction for debt financed investment. The worldwide allocation rule—when debt to asset ratios are lower abroad than in the United States—would discourage investment to a lesser amount than equity investment. This moderation of effect results from a small allocation being made as some of the U.S. interest is shifted abroad. Since the worldwide allocation rule would not apply when foreign debt to equity ratios are higher, the worldwide allocation rule would either further discourage investment abroad or have no effect. In contrast, the current allocation rule may either encourage or discourage investment abroad. The first term is unchanged from the previous section, and reflects the effect of allocating more existing domestic interest abroad as the capital stock increases. The second term reflects the fact that some interest has shifted abroad and would not be allocated. If domestic debt is small relative to foreign debt, then the current allocation rule would, simultaneously, raise U.S. revenue and discourage foreign investment in high tax jurisdictions.

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