Interest Deductions in a Multijurisdictional World

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Abstract
The tax treatment of interest expenses in a multijurisdictional setting raises numerous complexities. This paper catalogs these difficulties and highlights the particular problems associated with efforts to achieve ownership neutrality among multinational corporations (MNCs) when debt financing is available. We argue that the differential deductibility of debt entailed by various current tax law provisions leads in general to potential distortions in the patterns of asset ownership across MNCs, and that various proposed solutions have significant limitations. We suggest several alternative regimes to address both the ownership distortions that we highlight, as well as other well-established problems of income-shifting through debt. These alternative regimes are extensions to a multinational setting of two general approaches to the neutral treatment of interest expenses - the CBIT (comprehensive business income tax) and ACC (allowance for corporate capital). These regimes – a worldwide debt cap (WDC) and a net financing deduction (NFD) – provide solutions to income-shifting and ownership distortions. However, they have the potential disadvantage of restricting other policy parameters.

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1) Introduction

Debt plays an important role in the financing of multinational corporations (MNCs). Debt financing takes the form of both borrowing from third-party lenders at arm’s length, and of intrafirm debt across affiliates of the same MNC. [Add summary of data showing importance of debt from Section 2]

In recent years, there has been a growth of interest from policymakers and scholars in the tax treatment of debt and the distortions caused by the tax deductibility of interest payments. In part, this is due to discussions of the role of leverage in the financial crisis of 2008; although scholarly assessments do not suggest that the tax treatment of debt was a proximate cause of the crisis, the events of that period have stimulated interest in understanding the wider implications of firms’ choices with regard to debt financing (e.g. de Mooij, 2012). More recently, the OECD’s initiative on “base erosion and profit shifting” (BEPS) has also focused attention on the tax treatment of MNCs’ interest expenses. Following their meeting in Los Cabos, Mexico in June 2012, the G-20 leaders issued a declaration proclaiming the “need to prevent BEPS” and expressed an intention to follow the OECD’s work in this area.1 This was followed by a major OECD report in February 2013 (OECD, 2013a) and subsequently by an action plan in July 2013 (OECD, 2013b). Item 4 of the OECD’s action plan is to: “Limit base erosion via interest deductions and other financial payments” (OECD, 2013b, p. 17).

Interest expenses are typically tax-deductible in most corporate income tax systems (subject to various limitations).2 As firms become increasingly global in the scope of their activities, the consequences of interest deductibility and related tax law provisions must be analyzed in a multi-jurisdictional setting. In particular, such an analysis must take account of the interaction of different countries’ rules on interest deductibility, and the growing sophistication of MNCs in structuring their financing arrangements (e.g. MNCs’ potential ability to deduct interest in multiple jurisdictions).

The central question addressed in this paper concerns the optimal form that interest deductibility and associated restrictions should take in a multi-jurisdictional world. This issue has attracted increasing attention from scholars in recent years. For instance, Graetz (2008)

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1 Cite communique
2 See for example the recent summary by an international tax advisory firm of a growing trend towards restrictions by EU countries on interest deductibility: http://www.taxand.com/news/newsletter/deductibility_of_interest_expenses-eu_crackdown
proposes a multilateral system of formulary apportionment of interest deductions across jurisdictions, based on the location of firms’ assets or sales (see also Sullivan, 2013). Hines (2008, 2009) argues that it is optimal for the residence countries of MNCs to permit full deductibility of interest expenses, regardless of whether the borrowed funds are used to finance domestic operations or the operations of affiliates abroad. Mintz and Weichenrieder (2010) describe and analyze (both theoretically and empirically) the use by German-based MNCs of conduit financing structures. They find evidence of treaty shopping and of the use of inter-affiliate debt to obtain interest deductions in multiple jurisdictions. They also discuss the implications of these findings for the formulation of tax policy towards MNCs by governments.

The existing literature has primarily emphasized two efficiency margins. The first is the distortion to firms’ choice of debt versus equity financing. Of course, even in a purely domestic context, the tax-deductibility of debt, combined with the nondeductibility of dividends and other equity returns, implies that firms have an incentive to use more debt financing than might be thought to be socially optimal. This distortion is exacerbated in a multijurisdictional setting if firms can deduct interest in a high-tax jurisdiction (or deduct the same interest payments in multiple jurisdictions) while using the borrowed funds to finance investment in a low-tax jurisdiction. The second margin relates to the choice and location of investment projects. In a purely domestic setting, the returns from debt-financed investments would typically be taxed at the same rates as that at which interest payments are deducted. In a multi-jurisdictional setting, however, it is possible that firms can deduct interest in a high-tax jurisdiction (or deduct the same interest payments in multiple jurisdictions) while using the borrowed funds to finance investment in a low-tax jurisdiction. In these circumstances, investment in low-tax jurisdictions arguably enjoys an implicit subsidy, and it is possible that firms will undertake investment projects for which the pretax return is negative, especially in low-tax jurisdictions.

While these potential inefficiencies are very important concerns, this paper emphasizes in addition a different margin that has not been widely discussed in the previous literature – ownership neutrality among MNCs from different residence countries (which entails that all multinational firms competing for the same investment face the same after-tax cost of debt, regardless of their country of residence). We thus draw on the notion of “Capital Ownership Neutrality” (CON) proposed by Desai and Hines (2003). They highlight the importance of ownership for productivity, and argue that an important criterion for assessing international tax
policy is whether and to what extent the pattern of ownership across firms is distorted by tax
considerations. In their framework, residence-country taxation of foreign earnings may distort
these ownership patterns. However, the analysis of Desai and Hines (2003) and the subsequent
discussion in the literature has generally been conducted under the assumption that MNC
investments are equity-financed. We depart from this focus by considering the case of debt-
financed MNCs. This is an important case to consider because when MNC investments are debt-
financed, the potentially differential deductibility of debt caused by differing home-country tax
rates and various tax law provisions may potentially violate CON.

We use a simple example of a three-country world (based on Graetz (2008)) to show that
stylized approximations to the current international regime for the treatment of interest
deductions lead quite generally to violations of CON. The tax laws of many countries include
tracking rules (that seek to allow or disallow deductions based where borrowed funds are used).
While perfect tracking rules would in theory satisfy CON, the literature is clear on the point that
such rules are conceptually flawed because of the fungibility of money. Thin capitalization rules
are another feature of many countries’ tax laws; we show that a regime based on such rules will
not in general satisfy CON. We also show that a multilateral formula apportionment system (e.g.
Graetz, 2008), while mitigating debt-related distortions, will not always satisfy CN.

There are two forms of taxpayer “self-help” approaches that may in theory satisfy CON.
One is for all MNCs to borrow exclusively in the highest-tax country (where the highest-tax
country allows full deductibility for all MNCs’ interest expenses). Such a regime, however, is
unlikely to be politically feasible. In particular, concerns about tax base erosion in the highest-tax
country may be expected to lead to earnings stripping rules and to the disallowance of
deductibility for borrowing that finances foreign investment; both of these would result in
violations of CON. A second “self-help” solution is for all MNCs to engage in multiple-dip
financing (in which they deduct the interest paid to the third-party lender in multiple
jurisdictions). This may not be feasible because of tax law provisions that restrict multiple-dip
financing. Even if it were feasible, the achievement of CON would be at the cost of dramatically
exacerbating other debt-related inefficiencies.

We suggest several alternative regimes to address both the ownership distortions that we
highlight, as well as other well-established problems of income-shifting through debt. These
alternative regimes are extensions to a multinational setting of two general approaches to the
neutral treatment of interest expenses - the CBIT (comprehensive business income tax, which would disallow all interest deductions) and ACC (allowance for corporate capital, which would extend financing deductions to corporate equity); these have been widely discussed in the previous literature, but primarily in a domestic rather than multijurisdictional context. These regimes – a worldwide debt cap (WDC) and a net financing deduction (NFD) – provide solutions to income-shifting and ownership distortions.

The WDC approach is based on the recent UK rule imposing a worldwide debt cap for purposes of deductibility by UK affiliates of multinational groups. Essentially, this cap restricts a multinational affiliate’s deductible interest to the total worldwide third-party interest payments of the multinational group. We argue that a regime in which all countries adopt a variant of this rule - that allows each MNC affiliate to deduct in each country an arbitrary fraction of the total worldwide third-party interest payments of the multinational group – would satisfy CON. Moreover, if a sufficient degree of multilateral cooperation is possible, then this system could choose the degree of preference for debt that countries deem to be optimal, and also achieve ownership neutrality with respect to both MNCs and domestic-only firms. If the arbitrary fraction of interest deductions that are allowed happens to be zero, then the WDC system is identical to a CBIT; in that sense, the WDC approach can be viewed as a generalization of the CBIT in a multijurisdictional setting.

The NFD regime involves each country allowing a deduction for aggregate corporate capital (debt plus equity), as in an ACC system. However, in our multijurisdictional setting, adjustments are required for injections of capital (whether in the form of debt or equity) into other affiliates within the same group. In particular, injections of capital into other affiliates are deducted from the capital base on which the deduction is allowed (for instance, if a parent borrows from a third party lender and injects this money as equity into a foreign affiliate, there will be no impact on the NFD allowed by the parent’s residence country). We show that a regime in which all countries adopt the NFD will create neutrality between debt and equity, eliminate “mismatch” between the tax rates for income and interest expenses, prevent earnings stripping, and eliminate the possibility of multiple-dip financing, as well as satisfying CON.

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3 It also draws on a recent proposal by Devereux (2010) that is intended to restrict interest deductibility in a high-tax residence country in circumstances where the borrowing finances foreign activity.
However, these solutions have the potential disadvantage of restricting other policy parameters. For instance, the NFD regime eliminates policymakers’ ability to favor the use of debt over equity (if they desire to do so). Whether this matters depends on whether we view the tax preference for debt over equity as a considered policy choice to subsidize the former, or as an historical accident. A small body of emerging literature in economics and finance has begun to elaborate theories suggesting that preferential treatment of debt relative to equity is socially optimal in certain circumstances. However, the general consensus among economists appears to be that there is no general efficiency rationale for a tax preference for debt. If this view is correct, then the NFD regime’s restriction of this policy parameter does not seem to be a serious shortcoming.

This paper is structured as follows. Section 2 presents some simple descriptive statistics highlighting the importance of debt financing for contemporary MNCs. Section 3 introduces the notion of ownership neutrality and shows how the current tax treatment of MNCs’ interest deductions typically fails to satisfy CON. Section 4 describes the WDC system. Section 5 presents the NFD approach. Section 6 concludes.

2) The Importance of Debt for Multinational Firms [to be written]

3) The Problem of Ownership Neutrality among Debt-Financed MNCs

3.1) Defining the Basic Problem

To introduce and analyze the concept of ownership neutrality, we use and extend a simple three-country example proposed by Graetz (2008, p. 487). Consider a world that consists of three countries, labeled H, M and L. Assume that all three countries implement territorial tax systems – i.e. they do not tax dividends (often referred to as “repatriations”) from foreign subsidiaries to their resident MNC parents (however, this does not preclude some taxation of foreign-source passive income, as discussed below). Importantly, the corporate tax rates imposed by these three countries differ. In particular, country H’s rate is 35%, M’s is 25% and L’s is 15%. All countries offer tax deductions for interest payments, though we will consider various possible ways that these deductions may be applied to MNCs.

We also assume that there are three MNCs in the world. One is resident in country H and will be referred to as “firm H”; another is resident in country M and will be referred to as “firm
M”; the third is resident in country L and will be referred to as “firm L.” All three MNCs operate globally – i.e. each MNC has an affiliate in each of the three countries. We take MNC “residence” as an unproblematic concept, and assume the residence country of each firm is fixed. In practice, residence may not be quite so clearly defined, and there may be scope for the manipulation of residence in response to tax and other considerations (e.g. Desai and Dharmapala, 2010). However, these issues are set aside here.

For illustrative purposes, we focus on a scenario in which firm H (the MNC resident in country H) and firm M (the MNC resident in country M) are in competition with each other to purchase an asset located in country L that costs $100. It is assumed that this investment is debt-financed, and that all firms can borrow on global capital markets at a pretax interest rate of 10% (regardless of the putative source of the debt). If debt were not tax-deductible, then the after-tax cost of debt would of course also be 10%, and would be equal for all firms (by assumption). Thus, the firm that can create the greatest value with the asset (i.e. the highest productivity owner) will acquire the asset. This situation would satisfy the notion of “ownership neutrality”, which may be defined as holding when the tax system does not change the identity of firms that acquire particular assets. In our specific context, ownership neutrality is satisfied when all multinational firms that are competing for the same investment face the same after-tax cost of debt.

This notion of ownership neutrality represents an application to our setting of the criterion of Capital Ownership Neutrality (CON) proposed by Desai and Hines (2003). They argue that the global activities of modern MNCs, and the decision to expand beyond one’s shores and become multinational, can best be explained by the link between ownership and productivity. They propose a CON as a criterion for evaluating tax regimes, and argue that an international tax regime that violates CON will potentially lead to significant inefficiencies as assets may fall into the hands of less productive owners. Their discussion assumes that MNCs are equity-financed, and so the cost of finance is not in itself a source of these distortions; rather their focus is on violations of CON due to the implementation of worldwide tax systems. In the setting here – with debt-financed MNCs – analogous distortions to ownership patterns may occur due to differences in the tax treatment of interest expenses, even when all countries use territorial tax systems. In particular, when CON is violated in our setting, it is possible that a less productive owner may end up owning an asset because they enjoy a lower after-tax cost of debt.
For example, consider our basic scenario in which firm H and firm M are in competition with each other to purchase an asset located in country L, and debt is the only source of finance. Suppose that each MNC is restricted to borrowing, and deducting interest, only in its home country. Then, firm H would face an after-tax cost of debt of 6.5%, while firm M would face a corresponding cost of 7.5%. In these circumstances, the less productive owner may be willing to bid more for the asset than would the higher-productivity owner. This problem of potential ownership distortions due to differential interest deductibility has occasionally been noted in the past, but has attracted very little scholarly attention, despite the large volume of literature on other debt-related distortions.

CON reflects only one of many possible dimensions along which tax policy may give rise to inefficiencies, and thus is of course only one of a number of possible criteria that an international tax regime would ideally satisfy. While ownership distortions are likely to be an important problem to the extent that asset ownership is associated with differential productivity, a complete analysis of the relevant tax policy issues would take account simultaneously of all of these margins (such as debt-equity distortions along with inefficient patterns of ownership). Nonetheless, given the difficulty of such a comprehensive analysis, neutrality norms such as CN can play a role as simple heuristics that highlight particular inefficiencies. It should be remembered, however, that no single such heuristic can provide a complete guide to policy.

A number of other caveats are in order at the outset. The simple framework we have used to illustrate the problem of ownership distortions assumes the asset in country L for which the MNCs are competing is in limited supply. We also adopt a global perspective, in which the social cost of ownership distortions is the difference in the productivity of assets in the hands of the different potential owners. For national welfare, the price at which the asset is sold (which may be determined by a bargaining process) is also potentially important, as are tax revenues received by different governments. While national welfare considerations are clearly important to policy discussions, our initial analysis of the problem of ownership distortions due to interest deductions focuses on a global perspective to better understand the efficiency costs and potential solutions. The possibility of multilateral cooperation noted in the Introduction also suggests that a global perspective may have some relevance.
3.2) A Note on Debt Market Equilibrium

The Graetz (2008) framework assumes an equilibrium in which the pretax interest rate is equalized across countries, even though corporate tax rates differ. A key issue is thus whether corporate tax rate differences may be capitalized into pretax interest rates in certain circumstances (so that, for instance, after-tax interest rates are equalized). To clarify the circumstances in which the assumption of equal pretax interest rates may be reasonable, we briefly in this subsection a simple analysis of debt market equilibrium, based on extending the framework in Feldstein (1995) to an open economy setting.

Consider a model with a large number of households resident in the various countries in our framework. These households face a personal tax on interest income that can potentially vary according to their country of residence (but that is applied uniformly to both domestic and foreign-source interest income). Households can lend freely in any country. In a simple two-period setting, households would take the after-personal-tax interest rate they face as given, and choose their level of savings to maximize utility. For instance, in a setting where households live for two periods but receive labor income only in the first period, they would choose period-1 savings (for retirement consumption in period 2) to equate the marginal utility of consumption in each period. Importantly, the optimal savings choice would depend on the personal tax rate faced by the household, but not on the corporate tax rate faced by firms in that country (or any other country).

Assume also a large number of firms (i.e. corporate borrowers) with (fixed) residence in each country. Let $i_j$ be the pretax interest rate faced by corporate borrowers resident in country $j$, and $f_j(K_j)$ be the (possibly country-specific) production technology available to firms in country $j$. Then, in a simple setting with only debt financing and certain other simplifying assumptions, firms will choose their capital stock $K_j$ by setting:

$$f'_j(K_j) = i_j$$

Note that the corporate tax does not enter into this expression because of the deductibility of interest. In equilibrium, firms will choose an optimal size of their capital stock and (equivalently) an optimal level of borrowing, given the (pre-corporate-tax) interest rate they face. Households will choose their optimal level of savings, given the (after-personal-tax) interest rate that they face. The interaction of large numbers of households and firms will determine the equilibrium pretax interest rate faced by a firm in a given country.
In this setting, it can straightforwardly be shown that in any equilibrium in which firms in all countries receive debt financing, the pretax interest rates must be equalized: i.e.

\[ i_H = i_M = i_L = i^* \]

where \( i^* \) depends on (a weighted average of) the personal tax rates faced by households. As the corporate tax rates in the various countries affect the optimization problems of neither households nor firms (i.e. corporate borrowers), it follows that \( i^* \) is independent of these corporate tax rates. This illustrates a fairly general set of circumstances in which the assumption of equal pretax interest rates may be reasonable.

Suppose that instead lending takes place through financial intermediaries that are subject to the local corporate tax. Then, if the after-tax profits of financial intermediaries are equalized across countries, a financial intermediary in H would charge a higher pretax interest rate than its counterpart in L. However, note that the corporate tax paid by financial intermediaries applies only to the interest spread, not to all interest income, most of which would remain subject only to personal taxation at the household level. Thus, even in these circumstances, the extent of the capitalization of corporate taxes into pretax interest rates would be limited.

The simple sketch above envisages a world with domestic-only firms. When some firms are multinational, it is possible (as discussed in various contexts below) that their borrowing may be tax-advantaged relative to that of domestic-only firms. If interest rates are determined by a process of bargaining between lenders and borrowers, then it may be possible that the tax advantages enjoyed by MNCs in certain circumstances (and hence the corporate tax rates they face) may help determine the interest rate that they are charged as the outcome of this bargain. We assume that such differentiation of interest rates is constrained by the possibility of arbitrage, for instance through re-lending by domestic firms to MNCs. Such re-lending may be either explicit or implicit (in that domestic firms borrow cheaply while using retained earnings to lend to MNCs).

3.3) Existing and Proposed Solutions, and their Limitations

This section reviews various potential solutions to the basic problem outlined in Section 3.1. Some are features of current tax law in many countries, such as tracing rules and thin capitalization rules. Others – such as borrowing in high-tax countries or engaging in multiple-dip financing – represent “self-help” strategies adopted by MNCs that potentially affect the
prevalence of ownership distortions and other debt-related inefficiencies. We discuss each of these possibilities in turn, and conclude that all have significant limitations as solutions to the problem of ownership distortions.

3.3.1) Tracing Rules

Tracing rules – which seek to determine the uses to which borrowed funds are put – play an important role in the tax laws of many countries. Initially, imagine that perfect tracing rules can be implemented – i.e. that the $100 borrowed to finance the investment in L can be transparently observed by all governments to have been borrowed for the purpose of making that particular investment. Then, country L would have no reason to disallow the deduction (given that its tax system is characterized by interest deductibility), regardless of the putative source of the debt. It would also seem that neither H nor M would have any reason to permit the deduction, even if it were nominally sourced there, especially if the interest would be deductible in L. Moreover, it is often argued that interest on debt that generates income exempt from taxation, at least by the home country, should be disallowed (and thus, in effect, that interest on debt that finances foreign operations should be disallowed).

Thus, the likely outcome with perfect tracing rules is that the interest will be deducted against L-source income only, regardless of whether firm H or firm M acquires the asset. The after-tax cost of debt will be 8.5% for each firm, and CON will be satisfied. In addition, there would be no incentive to undertake negative-value projects (as interest payments are deducted at the same rate as that at which the income from the asset is taxed). A preference for debt over equity will exist, but only to the extent contemplated in country L’s domestic tax law, and so reflecting what (perhaps too charitably) we might presume to be a considered judgment by government L about the social optimality of debt versus equity finance.

While the tax laws of many countries seek to implement tracing rules of this type, it is now generally accepted in the scholarly literature that tracing is not a practical possibility for most borrowing. For example, Graetz (2008, p. 489) states that: “Given the fungibility of money, knowing the purpose of borrowing is an impossible quest.” As Mintz and Weichenrieder (2010, p. 26) explain:

4 Note, however, the argument by Shaviro (2001) that in certain circumstances tracing rules may be superior to various worldwide allocation regimes, notwithstanding the fungibility of money. For instance, it may be optimal for the US to use tracing rules if most other countries do so.
“This tracing approach has limited effect since companies could adjust borrowing to fund domestic investment and use cash to fund foreign investments. Financial institutions and other large multinationals with multiple investments easily follow such ‘cash damming’ practices.”

When (as is typically the case) tracing is impossible or imperfect, the relative after-tax cost of debt for MNCs depends on specific rules and the particularities of the context and assumptions, as explored below. In general, however, CON will be violated in a wide range of circumstances.

3.3.2) Universal High-Tax Borrowing

Given that tracing is typically impossible or imperfect, the ideal scenario for each MNC would be to locate its debt in H and deduct it at 35% (for instance, by borrowing from a third-party lender through its affiliate in country H). This requires the assumption that each MNC has sufficient income in H (either currently or in the future via loss carryforwards) to be able to fully deduct its interest payments. Hodder and Senbet (1990) and Dharmapala (2009) develop models of firms’ capital structure in a multijurisdictional setting that assume that all firms deduct their interest expenses in the country with the highest tax rate. Desai, Foley and Hines (2004) report evidence consistent with MNCs locating debt in higher-tax jurisdictions.

If all firms are successful in locating all their third-party debt in country H, then CON will be satisfied, as each firm deducts all of its debt at 35%. In addition to the assumptions noted above, this of course requires that country H is willing to allow all MNC affiliates located there to fully deduct interest expenses, regardless of whether the borrowing finances investment in H or some other country, and regardless of whether the affiliate’s parent is resident or nonresident in country H. A normative argument that country H should behave in this generous manner can be derived from the work of Hines (2008, 2009). Hines argues that residence countries of MNCs should not in general disallow interest deductions for borrowing that finances foreign activity. The argument relies on a number of interrelated elements. The first of these elements is that such disallowance implicitly imposes a domestic tax burden on foreign activity, and is thus inconsistent with the basic premise of territorialism (i.e. that foreign activity should not be burdened by residence country taxation).

5 For example, suppose that the US were to impose a territorial system with a 35% rate on domestic income. Consider a US MNC that initially has $100 of domestic income, $100 of foreign income, and $60 of expenses incurred in the US. Recalling our earlier premise that tracing is not possible, the US would (if it were to disallow deductions associated with foreign earnings) use a formula based on the location of assets or earnings. Suppose that it only allows deductions to be taken in the US based on the fraction of worldwide earnings that are sourced in the US. Then, the MNC would be permitted to deduct $30 in the US, and its US tax liability would be $24.50 (35% of $70). Suppose instead that the MNC’s foreign income is $200 (i.e. the scale of its foreign activity is larger), with all
A second crucial element in Hines’ argument relates to the normative justification for the tax preference for debt. Economists typically view the tax preference for debt as creating a distortion relative to the socially optimal pattern of corporate financing. However, the tax preference for debt is a longstanding and widespread feature of the world’s corporate tax systems. In themselves, of course, neither longevity nor cross-national popularity guarantee that this policy is optimal. Nonetheless, proponents of the disallowance of deductions associated with foreign activity generally do not question the tax-deductibility of debt incurred for purely domestic purposes, nor do they advocate abolishing tax deductibility for the debt incurred by purely domestic firms (non-MNCs). Thus, Hines argues that any disallowance of MNCs’ interest or other expenses should be consistent with the underlying normative reason for granting a tax preference for debt. Hines does not articulate such a normative reason, although we review some recent theories on this point in below. The putative positive externalities from debt may relate either to borrowing per se or to debt-financed investment. It is thus unclear whether those externalities are present (or as strong) in the case of domestic borrowing by a MNC to finance foreign investment. Nonetheless, a key implication of this view is that MNCs should presumptively receive similar tax treatment of debt to domestic-only firms (i.e. full deductibility, regardless of the use of the funds), unless a compelling normative case can be developed to distinguish the two cases.

Hines (2008, 2009) focuses on the scenario in which a residence country is deciding whether or not to grant full deductibility to the interest expense incurred in the residence jurisdiction, where some fraction of this borrowing finances overseas activity. Translating these arguments to a world such as ours in which there are many MNCs, resident in different countries, seems to imply (at least as a first approximation) that the high-tax country H allow full deductions for borrowing by all MNC affiliates, regardless of whether the affiliate’s parent is a

other variables held fixed. Then, the US MNC would only be able to deduct $20 in the US, based on two thirds of its worldwide earnings being foreign, and its US tax liability would be $28 (35% of $80). In effect, an expansion in the scale of foreign activities (holding domestic activities fixed) has led to an increased US tax burden on the foreign activities of the US MNC. Hines argues that this increased burden is presumptively inconsistent with the premise that underlies the use of a territorial system (i.e. that foreign activity should not be burdened by residence country taxation). Allowing full deductibility for expenses incurred in the US (including interest expenses) would address this problem, and, in Hines’ view, would be more consistent with the underlying premises that lead governments to implement territorial tax systems.
resident of H, and regardless of whether the borrowed funds are used for investment in H or elsewhere. As noted earlier, this regime would satisfy CON.6

The arguments for H to allow full deductibility may or may not be compelling as a normative matter (for instance, Becker and Fuest (2010) respond to the Hines (2008) argument by claiming that full deductibility does not in general maximize national welfare). What is more important for our purposes is that, even for those persuaded by the normative argument, it is clear that in view of existing earnings stripping rules and the disallowance of certain deductions, a regime of universal high-tax borrowing is very different from the reality that prevails today. In particular, there are various reasons, discussed immediately below, why a regime in which all MNCs borrow in the high-tax country is likely to be politically infeasible. Moreover, as also discussed below, even the normative attractiveness of this solution is undermined when firms are able to engage in multiple-dip financing.

From the perspective of H’s government, the inter-affiliate debt that would be used to implement borrowing in H and investing in L – for instance, the MNC’s H-affiliate borrowing from a third-party lender, then injecting the funds into the L-affiliate as equity or debt – would be perceived as stripping earnings out of H. Thus, interest deductibility in H may be limited by earnings stripping rules, such as Section 163(j) in the US. Typically, these rules take the form of disallowing interest deductions when they exceed some fraction (e.g. 50%) of income. There is also typically a safe harbor expressed in terms of the ratio of debt to equity, to ensure that only highly leveraged affiliates are subject to the rule.

Earnings stripping out of H may be particularly objectionable when undertaken by a nonresident MNC such as firm M. If country H imposes an earnings stripping rule only on affiliates of nonresident MNCs, then firm H will enjoy an obvious competitive advantage as a result of being fortunate enough to be resident in a high-tax country: it can borrow in H to

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6 However, whenever borrowing in H finances investment in country M or L, interest will be deducted at a higher rate than that at which the income generated by the investment is taxed (thereby arguably subsidizing these investments). In addition, the tax preference for debt enjoyed by firms M and L will be larger than envisaged by the M and L governments when they chose their tax rates. One possible response to these counterarguments that draws on another element of the Hines (2008, 2009) framework is that these possibilities are neutralized by implicit taxes. Pretax returns in country H will be higher and those in countries M and L correspondingly lower, to reflect the different source-based tax rates on income earned in those countries. Thus, if a firm borrows in country H to finance an investment in country L, it deducts its interest payments at 35%, while facing a total tax rate of 35% (consisting of an explicit 15% tax and an implicit 20% tax that reflects the lower pretax returns available in country L).
finance the $100 investment in L, and thereby enjoy a lower after-tax cost of debt than firm M
(which cannot fully deduct interest on its borrowing in country H).

Even if H’s earnings stripping rule is nominally nondiscriminatory with regard to resident
and nonresident MNCs, it is likely that firm H will retain a competitive advantage. In general, it
seems reasonable to assume that each firm’s assets are located disproportionately in its country
of residence, at least for historical reasons. Then, for a given amount of borrowing (such as the
$100 required for the investment in L), it is more likely that a resident MNC will fall within the
permitted parameters of the earnings stripping rule. For example, assume that country H’s
earnings stripping rule disallows deductions exceeding 50% of income. Suppose that firm H
earns $90 of income in H, while firm M earns $10 of income in H. If each borrows $100 in H
and pays $10 of (pretax) interest, then firm H will be able to deduct all of its $10 interest
payment, while firm M will only be able to deduct $5 of the $10 of interest that it pays. Thus, in
competing to purchase an asset in country L, firm H’s after-tax cost of debt is 6.5% (it pays $10
of interest and receives a deduction worth $3.50), whereas firm M’s after-tax cost of debt is
8.25% (it pays $10 of interest and receives a deduction worth $1.75). Thus, firm H will enjoy a
competitive advantage in bidding for the asset in country L, and CON will be violated.7

Even when both firm H and firm M can fully deduct their interest expense in H, the
“shadow cost” to firm M will be higher whenever its operations are less concentrated in H than
are those of firm H. The shadow cost concept refers to the opportunity cost of obtaining a
deduction, specifically to foregoing possible deductions for potential future projects by taking a
deduction for a current project. For example, assume again that country H’s earnings stripping
rule disallows deductions exceeding 50% of income. Suppose that firm H earns $90 of income in
H, while firm M earns $20 of income in H. If each borrows $100 in H and pays $10 of (pretax)
interest, then each firm will be able to deduct all of its $10 interest payment. It thus appears that
CON is satisfied in this scenario. However, note that firm M’s H-affiliate has now exhausted its
interest deductions. If another investment opportunity elsewhere in the world that would entail
borrowing in H were to emerge within the same tax year, then firm M would not be well-
equipped to take advantage of it. Firm M would have to borrow in M or L, and would thus face a

7 If country H permits the carryforward of disallowed interest deductions, then firm M’s after-tax cost of debt will be
lower than 8.25%. However, as long as the carryforwards are not as valuable as a current deduction – because of the
time value of money (given the absence of interest on carryforwards), or because of the possibility that firm M’s H-
affiliate will never earn enough income to fully deduct the interest – then, the after-tax cost of debt for firm M will
be higher than 6.5%.
higher after-tax cost of debt than would firm H, which retains a substantial capacity to deduct additional interest payments. Thus, competing for the $100 investment opportunity in country L entails a higher shadow cost in terms of foregone possible future investments for firm M relative to firm H. Firm M may thus forego the investment opportunity in L, ceding it to firm H. Under these circumstances, firm M effectively faces a higher cost of debt finance than does firm H.

In addition to the political pressure to curtail perceived earnings stripping, there is also likely to be pressure on government H to disallow deductions that are thought to be associated with foreign investment. This point can be illustrated by the recent and current debates in the United States on moving to a territorial system. Most such proposals envisage the disallowance of some portion of deductions thought to be associated with foreign earnings (e.g. US Department of the Treasury, 2007; Altshuler and Grubert, 2008). Indeed, Hines (2008, p. 466) concludes that “from a U.S. tax reform proposal standpoint, exempting foreign income from taxation appears to be closely associated with limiting the deductibility of domestic expenses.”

It is clear that disallowance along these lines by country H will generally lead to violations of CON. In particular, suppose that disallowance is based on the fraction of a multinational group’s assets that are located abroad (recalling once again the impossibility of perfect tracing rules). For concreteness, suppose that 50% of each firm’s assets are located in its residence country, and 25% in each of the other two countries. Then, country H would disallow 50% of firm H’s interest expenses (leaving it with an after-tax cost of debt of 8.25%), while disallowing 75% of the interest expenses of firm M and firm L (leaving each with an after-tax cost of debt of 9.125%, assuming in each case that no additional deductions are allowed in any other jurisdiction).

So far, we have assumed that disallowance treats MNC affiliates with resident and nonresident parents in a facially neutral manner. This need not necessarily be the case, however. If affiliates of foreign MNCs are disallowed deductions to a greater extent by country H, this would simply exacerbate the violation of CON highlighted above. In the limit, a policy of disallowing deductions for affiliates of foreign MNCs would lead to a scenario in which each MNC borrows, and deducts interest payments, only in its home country. Then, firm H will face an after-tax cost of debt of 6.5%, firm M of 7.5%, and firm L of 8.5%.8

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8 As part of each firm’s borrowing would finance investment abroad, it is possible that each government may disallow part of the interest deduction on the grounds that it is used to generate foreign income that is exempt from...
The possible arguments for universal high-tax borrowing were developed under the assumption that firms could deduct their interest payments in (at most) one jurisdiction. When multiple-dip financing structures are available to MNCs, the normative force of this “universal high-tax borrowing” regime is significantly undermined, quite apart from questions of political feasibility. Multiple-dip structures (described in more detail in Section 3.3.5 below) allow MNCs to obtain multiple deductions for interest payments on what is in substance the same third-party debt. Recall that the normative rationale for the universal high-tax borrowing regime is premised on a 35% deduction for local borrowing being optimal from the perspective of country H. When firms have the unconstrained ability to use multiple-dip financing structures, they will be able to obtain a much larger subsidy. In our example, each firm would be able to deduct its interest expenses at a rate of 85% (the sum of the three countries’ tax rates). This far exceeds any one country’s willingness to subsidize borrowing, and is thus difficult to justify in terms of whatever external benefits might be generated by debt financing. Thus, a universal high-tax borrowing regime would create what by any standards would seem to be an excessive preference for debt relative to equity.9

3.3.3) Formula Apportionment

In response to the impossibility of tracing and to the apparent debt-equity and investment distortions created by interest deductions, Graetz (2008) proposes a system of multilateral apportionment of the worldwide interest expenses of MNCs. The worldwide interest expense of a MNC would be allocated under this proposal in accordance with the location of the MNC’s assets (for instance, if 50% of a MNC’s assets are located in country H, 50% of its interest deductions would be allocated to country H). More recently, Sullivan (2013) proposes a system of formula apportionment based instead on the location of MNCs “gross profits” (earnings before interest and taxes). Implementing a system of formula apportionment would require a significant degree of multilateral cooperation, but it would arguably have a number of important advantages over the current regime. In particular, it would limit the extent to which firms could engage in tax arbitrage by borrowing in high-tax locations in order to generate income in lower-

domestic taxation. Given the impossibility of perfect tracing, however, this disallowance would not be based on the actual use of funds, but on some arbitrary criterion, such as the fraction of assets held abroad. This type of disallowance would raise the cost of debt finance for each firm, but it would not in general eliminate the disparities across firms in the cost of financing.

9 A distinct issue, involving violations of CON, arises when different MNCs have differential access to multiple-dip structures due to various tax law provisions, as discussed in Section 3.3.5 below.
tax jurisdictions, and thereby avoid subsidizing such investments. It would also mitigate to some degree the heightening of debt-equity distortions due to such tax arbitrage.

However, the proposed formula apportionment systems would not, as a general matter, satisfy CON in all circumstances. For instance, consider a situation in which firm H holds half its assets in country H, the other half in country L, and has no assets in country M. Suppose also that firm M holds 50% of its assets in country M and the other 50% in country L. Assume that neither firm H nor firm M initially has any debt, and that each firm initially has $900 of worldwide assets. These two firms compete for a debt-financed $100 investment in country L. If firm H were to acquire the asset, then 45% of its interest deductions would be allocated to country H (and deducted at 35%) and 55% of its worldwide interest deductions would be allocated to country L (and deducted at 15%); its after-tax cost of debt would thus be 7.6%. If firm M were to acquire the asset, 45% of its worldwide interest deductions would be allocated to country M (and deducted at 25%) and 55% of its worldwide interest deductions would be allocated to country L (and deducted at 15%); its after-tax cost of debt would thus be 8.05%. Firm H would thus enjoy a lower after-tax cost of debt.\(^1\)

Moreover, any system of formula apportionment would face significant obstacles. The degree of multilateral cooperation and coordination required to agree on a formula and to implement the system would in many respects exceed that required for the WDC and NFD regimes discussed below. Moreover, even if these obstacles were to be overcome, a formula apportionment system would mitigate but not eliminate the distortions due to mismatch between income and interest expense and to the tax bias towards debt over equity financing. In contrast, the WDC and especially the NFD regimes offer the prospect of eliminating these distortions, as well as satisfying CON.

\subsection*{3.3.4) Thin Capitalization Rules}

Thin capitalization provisions originally resembled the earnings stripping rules discussed above, and focused on inter-affiliate debt. However, a new wave of what Kleinbard (2011, pp. 140f) terms “sophisticated” thin capitalization rules has emerged in recent years. These rules

\footnote{If the MNCs have sufficiently large amounts of preexisting debt, then there is a countervailing factor to be considered. In particular, a larger fraction of the preexisting (inframarginal) interest deductions of the firm that acquires the asset in country L will be allocated to country L, thereby lowering the tax subsidy to this preexisting debt. This effect tends to mitigate the difference in the after-tax cost of debt due to country H’s higher tax rate relative to country M. Indeed, Sullivan (2013, p. 1352 and Table 2, p. 1364) presents an example in which the two opposing effects exactly cancel out, and (using our terminology) CON would be satisfied.}
seek to ensure that a local affiliate’s debt-to-asset ratio does not fall too far out of step with the worldwide debt-to-asset ratio of the multinational group to which it belongs, and apply equally to affiliates of resident and nonresident MNCs.

We use a stylized version of Germany’s thin capitalization rule as an illustration. The German thin capitalization regime imposes a “hard cap” on interest deductions of 30% of income. Above this level, multinational affiliates are permitted interest deductions only to the extent that their (local) debt-to-asset ratio is no higher than the multinational group’s worldwide debt-to-asset ratio. When the hard cap is binding, this regime creates outcomes that are quite similar in some respects to those of a formula apportionment system. However, unlike formula apportionment, a thin capitalization rule does not require multilateral coordination; it can be (and indeed has been) implemented unilaterally.

To illustrate the consequences of thin capitalization rules for CON in a simplified manner, assume that the hard cap percentage is set to zero. Assume that all countries impose a similar thin capitalization rule, and apply it neutrally to resident and nonresident MNCs. Suppose that firm H has initial assets of $900, of which $600 is located in H and $300 in M, and initially has no debt. If firm H were to borrow $100 to purchase a new asset in country L, its worldwide debt would be $100, and its worldwide debt-to-asset ratio would be 0.1. Then, of the $10 of pretax interest, only $6 could be deducted in H (to correspond to the 0.6 local debt-to-asset ratio of the H-affiliate), $3 in country M, and $1 in country L. Thus, the overall rate at which this interest payment would be deducted is:

\[(0.6)(35) + (0.3)(25) + (0.1)(15) = 30\%\]

The after-tax cost of debt for firm H would be 7%.

Suppose that firm M also has initial assets of $900, of which $300 is located in H and $600 in M, and also initially has no debt. If firm M were to borrow $100 to purchase a new asset in country L, its worldwide debt would be $100, and its worldwide debt-to-asset ratio would be 0.1. Then, of the $10 of pretax interest, only $3 could be deducted in H (to correspond to the 0.3 local debt-to-asset ratio of the H-affiliate), $6 in country M, and $1 in country L. Thus, the overall rate at which this interest payment would be deducted is:

\[(0.6)(25) + (0.3)(35) + (0.1)(15) = 27\%\]

The after-tax cost of debt for firm M would be 7.3%. Thus, firm H would enjoy a competitive advantage in bidding for the asset in country L.
3.3.5) Universal Multiple-Dip Financing Structures

So far, we have generally assumed that firms are able to deduct their third-party debt in (at most) one jurisdiction. However, in view of the possibility of using inter-affiliate debt, there is no intrinsic reason to impose this restriction. Indeed, double-dip and multiple-dip financing structures using conduit entities have been extensively discussed in the recent literature on MNCs (e.g. Mintz and Weichenrieder, 2010). Figure 1 depicts a simple multiple-dip structure. The MNC’s residence is not specified, and is not crucial for this simple example. However, we can assume that the MNC is resident in country H for concreteness. Suppose that the MNC has affiliates in H, M and L, and wishes to finance an investment opportunity in country L using debt. The H affiliate borrows from a third-party lender. This money is then used to inject equity into an affiliate located in a tax haven jurisdiction. The haven affiliate then lends this money to the group’s M-affiliate, which in turn uses it to inject equity into an affiliate in a second tax haven jurisdiction. This haven affiliate then lends the money to the L-affiliate, which uses it to finance the investment opportunity.

Relative to more straightforward financing structure – such as borrowing from a third-party lender in country L – this multiple-dip structure potentially enables the MNC to deduct the interest paid to the third-party lender in all three nonhaven jurisdictions – H, M and L. Suppose that all MNCs are able to achieve deductions in all three countries (whether they can do so in practice depends on a number of characteristics of the countries’ tax laws, as discussed below). Recall our canonical hypothetical scenario where firms H and M are competing for a $100 investment in country L. As before, the successful firm is assumed to borrow the $100 required for the investment from a third-party lender, and to pay 10% pretax interest. Under the rules we have posited, each firm is able to establish multiple-dip financing structures (as shown in Figure 1) that would enable this $10 of pretax interest expense to be deducted in all three countries (H, M and L). Thus, the overall rate at which the $10 of pretax interest expense would be deducted is the sum of the tax rates of the three countries:

\[(1)(35) + (1)(25) + (1)(15) = 85\%\]

In other words, the after-tax cost of debt is 2.5%. Importantly, this conclusion holds equally for firm H and firm M (and also for firm L) – each firm is able to achieve identical interest deductions, so that CON is satisfied.
Because achieving full multiple-dip deductions depends on the interaction of complex features of different countries’ tax laws, it is not clear whether firms have in fact succeeded in using multiple-dip structures as a “self-help” approach that solves the problem of ownership distortions. If they have done so, however, it is clear that (relative to formula apportionment, thin capitalization rules, and the other approaches discussed above) universal multiple-dip financing would greatly exacerbate distortions along other dimensions. In particular, note that overall rate at which interest payments can be deducted is potentially very large in relation to the tax rate of any one country. The incentive to use debt would thus be substantially greater than it would be under, for instance, formula apportionment, and the debt-equity distortion would be correspondingly more severe. There would also be a greater incentive to undertake negative-value investments. Indeed, with a sufficient number of countries in which MNCs operate, the after-tax cost of debt is likely to be negative in absolute terms, and not merely to be lower than the rate at which income generated by the investment is taxed. These disadvantages of universal multiple-dip financing would seem to outweigh its benefits in terms of achieving CON.

Quite apart from the magnification of debt-related distortions due to universal multiple-dip financing, it is doubtful whether this practice would in fact achieve CON. For the interest payments in our example above to all be successfully deducted, several conditions must be satisfied. In particular, it is important that the home country does not disallow interest deductions for debt used to finance foreign investment. Of course, as we have discussed above, it is not in general possible to reliably identify which funds are used for what purpose, and so even if the home government seeks to limit deductions in this way, it can only do so to a limited extent (such as through thin capitalization rules). Even so, such rules would imply that only part of the interest paid by H would be deductible.

It is also important for the success of this structure that there exist tax haven jurisdictions satisfying a number of criteria. One is the absence of withholding taxes on dividends; in Figure 1, if withholding taxes had to be paid on dividends from havens 1 and 2, then this would reduce or eliminate the gains from the multiple deductions. Thus, it is being assumed here is that there are a sufficient number of jurisdictions that can host conduit entities that have either eliminated dividend withholding taxes by treaty, or that no such taxes are applicable, for instance because the conduit entity host and the country to which the dividends are paid both belong to the
European Union (EU). Equivalently, we assume that treaty shopping by the MNC can achieve the same objective (i.e. the elimination of withholding taxes on dividends).

A further requirement for the success of these structures that residence countries do not impose “controlled foreign corporation” (CFC) rules that constrain the use of multiple dips. In the context of territorial systems, the term CFC rules refers primarily to exceptions from the source principle imposed by residence countries, typically for the purpose of taxing the passive foreign income of their MNCs.\footnote{See e.g. Kleinbard (2011, p. 145) for a discussion.} Suppose instead that the residence country taxes interest income earned by haven affiliates. This would make multiple dip structures less profitable, and would introduce new types of violations of CON.

In our earlier example of firm H and firm competing for an investment in country L, CON would not be violated. However, this is not true in general. For example, suppose that firm H and firm L are competing for an investment in country M. Then, firm H’s optimal debt financing strategy is to borrow in H, thereby deducting its interest payments to the third-party lender at 35%. However, additional deductions in M and L are not feasible, because the interest received by the conduit entities in the haven jurisdictions would be taxed by the home country (H) at 35%; this would more than eliminate the benefits from deductions at 25% (in M) and 15% (in L). Thus, firm H would be unable to utilize multiple dips, and its after-tax cost of debt would be 6.5%.\footnote{A natural question that arises is whether these CFC rules would be in tension with country H’s generous policy towards interest deductions. As we have not specified the precise rationale for why a preference for debt exists, it is impossible to reach a firm conclusion. There is, however, no necessary contradiction. Country H’s desire to subsidize debt financing may, for instance, apply only to third-party debt, rather than to inter-affiliate debt within a multinational group. This may be because the externalities generated by debt financing are created only by the “real” economic incentives and pressures associated with an arm’s length lender, rather than by inter-affiliate debt.} Firm L, on the other hand, could also borrow in H (deducting interest payments to the third-party lender at 35%). It could also “double dip” in country M, deducting at 25%. However, the interest received in the haven affiliate (haven 1) would be taxed by the home country (L) at 15%. It would also be pointless to seek to achieve an additional deduction at 15% in L, as the taxation of haven 2 interest income by country L at 15% would eliminate this gain. Overall, firm L’s after-tax cost of debt would be 5.5%. Thus, with these “strong” CFC rules, it would enjoy a competitive advantage as a result of being resident in a low-tax country. This outcome for firm L is depicted in Figure 2.
4) The Worldwide Debt Cap (WDC) Regime

Economists have argued for decades for an end to the preferential treatment of debt. As is well-known, there are two alternative ways to eliminate the asymmetric tax treatment of debt and equity (see de Mooij (2012) for a recent discussion). One is to end the deductibility of interest, and the other is to retain interest deductibility while introducing a deduction for the normal rate of return to equity. The former is associated with the “comprehensive business income tax” (CBIT) approach developed by the US Treasury (1992), while the latter involves allowing an “allowance for corporate equity” (ACE) – a deduction at the risk-free rate of return, calculated using the book value of the firm’s equity. In this section, we propose a novel approach to the treatment of interest deductions in a multijurisdictional setting that can be viewed as a generalization of the CBIT approach. In Section 5, we propose an alternative approach to the treatment of interest deductions in a multijurisdictional setting that falls more into ACE tradition.

4.1) The Worldwide Debt Cap

Recall that (as discussed in Section 3.3.5) the successful use of multiple-dip financing by all MNCs would lead to outcomes that satisfy CON and therefore avoid ownership distortions, but that would greatly exacerbate various other debt-related distortions. In this section, we suggest an approach to the treatment of interest deductions in a multijurisdictional setting that harnesses firms’ incentives to use multiple-dip structures in order to achieve CON, while at the same time limiting the other debt-related distortions. We refer to this approach as the “worldwide debt cap” (WDC) regime.

As part of a process of reform that moved the UK from worldwide to territorial taxation, additional restrictions on interest deductibility by UK affiliates of multinational groups were imposed in 2009. The central provision, for our purposes, was a worldwide debt cap. Under this provision, a UK affiliate is unable to deduct for UK tax purposes interest expense that exceeds the worldwide third-party interest expense of the multinational group to which that affiliate belongs. In the UK, this debt cap was imposed in addition to existing earnings stripping rules and other anti-avoidance measures. There has also been no significant move so far by other countries to impose similar rules. However, to simplify the analysis, we consider here a scenario in which every country imposes a worldwide debt cap, with no other restrictions on interest deductibility. In particular, we assume that there are no restrictions (apart from the worldwide

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13 See Sullivan and Cromwell and Latham and Watkins descriptions . . .
debt cap) on parents’ interest deductions for borrowing that finances equity injections into foreign affiliates, and no earnings stripping or thin capitalization rules.

We also assume that CFC rules are structured so as not to preclude the use of multiple-dip financing. This requires, in particular, that residence countries’ CFC rules exempt haven affiliates’ related-party interest income. One may reasonably ask why CFC rules might be structured in this way. Recall, however, that the fundamental motivation to impose CFC rules within the framework of an otherwise territorial tax system is to address the problem of the location of passive assets. MNCs will typically hold some amount of cash-like or passive assets, the location of which is highly flexible. If the MNC’s residence country exempts interest received on cash holdings held abroad, then there is an inescapable logic to locating those cash holdings in a zero-tax jurisdiction, and no significant practical difficulty in doing so. CFC rules that address this basic problem can be crafted to apply only to third-party debt earned in haven jurisdictions, ensuring that only “true” passive income is caught in this net.

Consider the consequences (within our simple three-country example) of an international tax regime in which all countries impose a worldwide debt cap as their only restriction on interest deductibility. Recall our canonical hypothetical scenario where firms H and M are competing for a $100 investment in country L. As before, the successful firm is assumed to borrow the $100 required for the investment from a third-party lender, and to pay 10% pretax interest. It is important to note that there is no intrinsic reason that worldwide interest expense must be fully deductible in each country, especially as countries currently disallow interest deductions on various grounds. In particular, suppose that, in conjunction with the worldwide debt cap, each country also disallows a fixed (arbitrary) fraction of interest expenses. Importantly, we assume that this fraction is unrelated to the location of the firm’s assets and activities. Thus, it is fundamentally different from the formulary apportionment system discussed earlier (Graetz, 2008; Sullivan, 2013). It more closely resembles a “revenue sharing” apportionment system (e.g. Mintz, 2004), although what is being shared among countries here are subsidies rather than revenues. It is also quite unlike the idea of disallowing a parent’s interest expenses for debt that finances foreign activity, as the fraction of worldwide debt that is deductible is unrelated to the location of assets or earnings. We also envisage that the disallowance would be applied without distinction to all multinational affiliates located in the country, regardless of whether the parent is a resident or nonresident.
For example, let the fraction of worldwide third-party debt granted a deduction by country H be $\gamma_H$, and let $\gamma_M$ and $\gamma_L$ be defined analogously. Then, the overall rate at which interest payments can be deducted by any MNC is:

$$(\gamma_H)(35) + (\gamma_M)(25) + (\gamma_L)(15)$$

This holds for all MNCs, given that each firm is able to establish multiple-dip financing structures (as shown in Figure 1) that would enable it to deduct its interest expenses in each country (subject to the limitation imposed by the $\gamma$’s). Thus, CON is maintained under this more general system. However, the overall subsidy to debt-financed investment is obviously lower than when full deductions are allowed, and may be much lower if the rates of disallowance are sufficiently high (i.e. if the $\gamma$’s are sufficiently low). Indeed, if countries are sufficiently inclined to disallow deductions, this system (while satisfying CN) may also achieve more efficient outcomes with respect to the debt-equity choice and the choice of investment projects than does the existing international regime for the treatment of MNCs’ interest deductions.

More generally, let $n$ be the number of countries. We focus on a single multinational group that has affiliates in all $n$ countries. As will become apparent, it is unnecessary to specify the residence country. Let $\gamma_i < 1$ be the fraction of worldwide debt for which country $i$ allows a deduction. Let $\tau_i$ be country $i$’s tax rate. Let $D_{ix}$ be the (net) debt issued by affiliate $i$ to third-party lenders. Note that cash holdings (and thus retained earnings that are not immediately reinvested) are counted as negative debt, so it is possible that $D_{ix} < 0$ if cash holdings exceed borrowing. Let $D_{ij}$ be the (net) debt issued by affiliate $i$ to affiliate $j$. Equivalently, this can be defined as affiliate $j$’s holdings of debt in affiliate $i$, or as the amount lent by affiliate $j$ to affiliate $i$. Note that the way we define this implies that if affiliate $i$ were to lend to affiliate $j$, then $D_{ij}$ falls while $D_{ji}$ rises.

The WDC system entails that country $i$ allows a local affiliate a deduction with value:

Value of deduction in country $i = \gamma_i \tau_i (\sum_{j=1}^{n} D_{jx})$

A multinational firm, by assumption under this system, faces no obstacles in establishing a multiple-dip financing structure across its $n$ affiliates, and so will obtain deductions equal in aggregate to:

Aggregate value of deduction = $\sum_{i=1}^{n} \gamma_i \tau_i (\sum_{j=1}^{n} D_{jx})$
For an investment of $I$ in any location, the value of the deduction will be the same for all MNCs, regardless of the residence country tax rate. This eliminates ownership distortions among multinationals.

This system would require only a limited degree of multilateral coordination. It entails that international norms specify the broad structure of interest treatment (somewhat like the structure of double tax avoidance in the current international tax regime), with all countries adopting a worldwide debt cap. However, the $\gamma$’s can be chosen unilaterally by countries (as, of course, can tax rates). Thus, significantly less coordination would be required than, for instance, for formula apportionment.

Thus, a system based on a worldwide debt cap would have a number of significant advantages over both the current regime and various proposed alternatives. It responds in novel ways to two of the most widely expressed policy concerns relating to multinationals’ interest deductions. The first is the widespread concern regarding earnings stripping out of higher-tax jurisdictions through the use of inter-affiliate debt. By completely ignoring all inter-affiliate debt for tax purposes, a worldwide debt cap system would eliminate the considerable amount of tax planning in which firms engage in order to strategically locate inter-affiliate debt. It would also eliminate the need for the various earnings stripping rules and thin capitalization rules that pervade the international tax arena, and thus save the associated compliance and enforcement costs.

Second, the worldwide debt cap system also addresses the widespread concern in higher-tax residence jurisdictions about domestic borrowing that is used to finance foreign investment. As discussed earlier, this issue is often framed in terms of denying domestic deductibility to borrowing that finances earnings that will be exempt from domestic taxation. The WDC system does not permit countries to disallow deductions based on the putative location of the use of funds or on the location of the firm’s worldwide assets or income. However, it permits countries to consider the extent to which funds are likely to be used overseas in setting its $\gamma$. Thus, for example, smaller economies may choose to set smaller $\gamma$’s in the belief that a smaller fraction of an MNC’s worldwide borrowing will finance investment in domestic activities. Note, however, that it is important that this disallowance of deductions is not based on any aspect of the behavior of the firm itself (as that would, in general, lead to violations of CON of the sort that have been discussed earlier with respect to other systems).
In addition, the worldwide debt cap system involves abolishing international tax law rules (such as the “strong” CFC rules described above) that inhibit the establishment of multiple-dip financing structures. Taken in isolation, this simplifies many aspects of the international tax regime. Instead of seeking to combat multiple-dipping, the worldwide debt cap system harnesses firms’ growing sophistication in establishing such financing structures. However, at the same time, it curbs the adverse revenue consequences by means of the limitation on worldwide interest expense that can be deducted in any one country (that is, by use of the γ’s).

As noted above, the WDC regime can be viewed as a generalization of a CBIT. This is because it is based on a (partial) disallowance of interest deductions. In particular, if all countries were to set \( \gamma = 0 \), MNCs would not obtain interest deductions anywhere, and would in effect be subject to a CBIT system, which can thus be viewed as a special case of the WDC regime. It may be argued that under a WDC regime, countries would have an incentive to lower their \( \gamma \)’s towards zero. For a country that is “small” in relation to MNCs’ worldwide activity, doing so increases its revenue, while it does not drive away MNC investment (which depends on the global weighted average of the \( \gamma \)’s, which any individual “small” country cannot significantly influence). In other words, a WDC system might tend over time towards a CBIT, at least for MNC affiliates. This might be viewed as an advantage if it is thought that a CBIT would be optimal, but may be problematic otherwise.

While the WDC system would achieve of CON and have a number of other significant virtues, it is also important to bear in mind that it would not solve all of the problems associated with the treatment of multinationals’ interest deductions. Two issues stand out in particular. The first is the overall (global) degree of tax preference for debt. Under the worldwide debt cap system, the degree of tax preference for debt among multinationals will depend on the sum of the \( \gamma \)’s chosen unilaterally by the world’s governments. This sum is not under the control of any single policymaker, and is thus unlikely to coincide (except purely by accident) with any considered notion of the socially optimal preference for debt finance. This in itself does not necessarily imply that the proposed system would be inferior to the current regime along this dimension. The current regime is also characterized by governments independently choosing their degree of debt preference, while there is currently much greater scope for firms to manipulate their interest deductions through inter-affiliate debt, multiple-dip structures, and other mechanisms.
Second, the proposed system is intended to achieve CON among MNCs; it does not address the separate but related issue of competitive neutrality between MNCs and purely domestic firms.\(^{14}\) It is important to note that a worldwide debt cap system does not guarantee that MNCs and domestic-only firms will face the same after-tax cost of debt. It is possible that either MNCs would be favored or that domestic-only firms would be favored. This depends on whether governments allow full deductions for domestic-only firms (while restricting deductibility for MNCs to a fraction \(\gamma\)), and on the relative magnitudes of domestic tax rates and the sum of \(\gamma\)’s across countries.

Given these limitations, it is worth pausing to reflect on whether the worldwide debt cap is a realistic policy proposal or simply a thought experiment. We view it as illuminating many of the problems associated with the tax treatment of interest expenses in a multi-jurisdictional world. An important point that is implicit in our discussion is that these problems are much more severe and difficult to resolve than might appear at first sight, particularly when the CON criterion is used as a benchmark. In this light, our proposal should be viewed primarily as a thought experiment, although it has elements that policy-oriented scholars and policymakers may perhaps usefully ponder. In the next subsection, we push the thought experiment further by considering a multilateral version of the worldwide debt cap that would retain the advantages highlighted above, while also solving the remaining problems associated with multinationals’ interest deductions.

### 4.2) A Multilateral Version of the Worldwide Debt Cap System

In this subsection, we briefly sketch the outlines of a multilateral version of this system that can, given sufficient international coordination, address both the issues of the overall degree of debt preference faced by MNCs and the relationship between the after-tax cost of debt faced by MNCs and that faced by purely domestic firms. The common practice of allowing firms to deduct their interest expenses, but not the returns they pay to equityholders, creates a tax-induced preference for debt in firms’ financial choices. While this practice is a longstanding one, its justification from a normative economic standpoint has not been clearly elucidated. Such a normative rationale can only be developed if we are prepared to believe that debt financing

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\(^{14}\) It might be argued that the latter is not an issue of much significance. Modern theories of multinational firms emphasize that the common ownership of assets dispersed across multiple locations is of greatest value to the most productive firms (typically those with substantial intangible assets). Thus, it is likely that the relatively productive firms that end up becoming multinationals and the relatively less productive firms that remain purely domestic will rarely compete for the same assets.
confers some positive externality on society. The current practice of governments is consistent with a belief in the existence of some such externality, but the rate at which debt is subsidized varies considerably across countries. This subsidy rate – i.e. the reduction in tax liabilities associated with an additional dollar of interest payments – is in practice quite complicated to compute, but to a first approximation can be identified with the statutory corporate tax rate. The variation in this subsidy rate across countries evidently reflects disagreement about the value of the externalities conferred by debt, or reflects variations in the value of these externalities in different locations.

In a globalized economy where MNC borrowing is fungible and highly mobile, it is difficult to accommodate location-specific variations in debt-related externalities (if any exist). Similarly, disagreements among governments about the value of these externalities must be resolved if MNCs are to face a consistent regime for the treatment of interest deductions. Thus, the first step in a multilateral solution to the treatment of MNCs’ interest deductions is for governments to reach some sort of agreement about the extent to which they wish to favor debt financing.

Suppose, for instance, that all governments were to agree that the optimal subsidy rate is 16% (a number that is chosen purely for illustrative purposes; note that in the absence of positive externalities, the optimal subsidy may well be zero). This could be implemented through a worldwide debt cap system by assigning γ’s across countries to satisfy the following criteria. First, the γ’s would (as above) be independent of the behavior of any firm, for example being based on countries’ population or economic size. Second, the γ’s would be chosen so that the sum of tax rates across countries, weighted by the appropriate γ’s, equals 16%. Note that for any set of arbitrary weights associated with each country, it is possible to multiply these weights by a constant to obtain a weighted sum of 16%. If countries are willing and able to perform this task, then all MNCs would enjoy worldwide interest deductibility at a rate of 16%, under the same assumptions as in Section 4.1. This of course satisfies CON, but it does so not at some arbitrary degree of global debt preference, but rather at the putatively optimal level of global debt preference on which countries have agreed.

The next step is for all countries to commit to offering interest deductions to their purely domestic firms at the same rate of 16%. Under this regime, all MNCs everywhere in the world and all purely domestic firms in all countries of the world face the same after-tax cost of debt.
Not only is CON satisfied among MNCs, but there is also neutrality in ownership patterns between MNCs and purely domestic firms in all countries.

Of course, achieving multilateral coordination on this scale represents a formidable challenge, and so this idea is offered here only as a theoretical possibility. Note, however, that the demands on international coordination made here are not in substance very different from that which would be required for multilateral formula apportionment. As with formula apportionment, countries preserve their ability to set their own tax rates (pertaining to income and to all expenses other than interest).

5) The Net Financing Deduction (NFD) Approach

The implementation of a CBIT faces significant transition difficulties with regard to the treatment of existing debt, and faces various other obstacles (see e.g. de Mooij, 2012). An “allowance for corporate equity” (ACE) instead extends deductibility to equity returns, offering a deduction at the risk-free rate of return for corporate equity. This proposed system has a wide range of neutrality properties. As a result, economists in recent years have advocated an ACE system in preference to a CBIT. For instance, the Mirrlees Review in the UK (Mirrlees et al., 2011) advocates an ACE, primarily in order to exempt the normal rate of return on capital from taxation and thereby implement what amounts to a cash-flow or consumption tax on economic rents. De Mooij (2012) also advocates the introduction of an ACE system, emphasizing instead the achievement of neutrality between debt and equity financing.

An ACE would use as its base the book value of equity, subtracting equity participation in other firms (see e.g. de Mooij, 2012, p. 504). Thus, a multinational parent’s ACE would be based on the value of the equity in its domestic operations. Subsidiaries would receive ACE deductions in the jurisdiction in which they operate, rather than in the parent’s home country (assuming that the ACE system is established universally). It follows that an ACE does not create a violation of ownership neutrality for equity-financed investments (if firms H and M are competing to purchase a subsidiary in L, the latter will deduct its ACE in L at L’s tax rate, regardless of the buyer’s identity. On the other hand, the ACE does not solve the problem of CON for debt-financed investments, given that it leaves in place existing deductions for interest payments.
The “Allowance for Corporate Capital” (ACC) approach is a variant of the ACE. The key difference is that whereas an ACE adds on a deduction for the normal return to equity onto the existing interest deduction, an ACC allows a deduction for aggregate capital (i.e. debt plus equity) at the same rate, typically the risk-free rate of return. The ACE/ACC approaches have long been discussed in the economic literature on the design of neutral business taxes (see e.g. Boadway and Bruce, 1984; Devereux and Freeman, 1991).

The NFD (as formulated here) is a variant of the ACC. It also draws on a recent proposal by Devereux (2010) that is intended to restrict interest deductibility in a high-tax residence country in circumstances where the borrowing finances foreign activity. In particular, where a UK parent borrows in the UK, interest deductibility in the UK would be restricted to the portion of the debt that finances domestic activity. That is, deductibility would be denied to the extent that the UK borrowing finances an injection of equity (or debt) into a foreign affiliate (Devereux, 2010, p. 117).

Let \( n \) be the number of countries. We focus on a single multinational group that has affiliates in \( k \leq n \) countries. As will become apparent, it is unnecessary to specify the residence country. Let \( r_i \) be the rate at which country \( i \) allows a deduction for capital; in the ACC framework, this should ideally be the risk-free rate of return, but its precise determination is immaterial for the claim that we make. Let \( \tau_i \) be country \( i \)’s tax rate. Let \( D_{ix} \) be the (net) debt issued by affiliate \( i \) to third-party lenders. Note that cash holdings (and thus retained earnings that are not immediately reinvested) are counted as negative debt, so it is possible that \( D_{ix} < 0 \) if cash holdings exceed borrowing. Similarly, let \( E_{ix} \) be the (net) equity issued by affiliate \( i \) to common stockholders (i.e. to any shareholder that is not itself an affiliate of this multinational group). Let \( D_{ij} \) be the (net) debt issued by affiliate \( i \) to affiliate \( j \). Equivalently, this can be defined as affiliate \( j \)’s holdings of debt in affiliate \( i \), or as the amount lent by affiliate \( j \) to affiliate \( i \). Note that the way we define this implies that if affiliate \( i \) were to lend to affiliate \( j \), then \( D_{ij} \) falls, while \( D_{ji} \) rises. Let \( E_{ij} \) be the (net) equity issued by affiliate \( i \) to affiliate \( j \). The remarks above apply here as well.

The NFD involves country \( i \) allowing a deduction of the following amount for affiliate \( i \):

\[
\text{Value of deduction} = \tau_i r_i [D_{ix} + E_{ix} + \sum_{j=1}^{k} (D_{ij} + E_{ij})]
\]
(Recall that this setup entails that if affiliate \(i\) lends to another affiliate \(j\), there is a decrease in \(D_{ij}\) – i.e. the value of deductions is lower, other things equal, for an affiliate that injects capital into another affiliate). Let

\[ S_i = [D_{ix} + E_{ix} + \sum_{j=1}^{k}(D_{ij} + E_{ij})] \]

be the “stock” of capital of affiliate \(i\).

Suppose that all countries adopt an NFD system (albeit with potentially varying \(r_i\) and \(\tau_i\)). Then, it can be shown that an investment of \(I\) in country \(i\) will generate a deduction of \(\tau_ir_iI\), regardless of the form of financing. To establish this, consider an exhaustive list of cases:

i) Affiliate \(i\) issues \(I\) of debt to a third-party lender: \(D_{ix}\) increases by \(I\) and so the value of the incremental deduction is \(\tau_ir_iI\). Note that the use of \(I\) of retained earnings by affiliate \(i\) would also generate the same incremental deduction, as the reduction in cash holdings of \(I\) entails an increase of \(I\) in \(D_{ix}\). This point also applies to all the cases below that involve third-party debt.

ii) Affiliate \(i\) issues \(I\) of equity to a third-party shareholder: \(D_{ix}\) increases by \(I\) and so the value of the incremental deduction is \(\tau_ir_iI\).

iii) Affiliate \(j \neq i\) issues \(I\) of debt to a third-party lender, and then lends \(I\) to affiliate \(i\). For affiliate \(j\), \(\Delta S_j = \Delta D_{jx} + \Delta D_{ji} = I + (-I) = 0\): i.e. the increase in third-party debt is offset by the decrease in \(D_{ji}\), so that affiliate \(j\) does not experience any change in its deductions under the NFD.

For affiliate \(i\), \(\Delta S_i = \Delta D_{ij} = I\): thus, affiliate \(i\)’s deduction increases by \(\tau_ir_iI\).

This conclusion is unaffected by interposing an arbitrary number of intermediary conduit affiliates between \(j\) and \(i\). For example, suppose that \(j\) lends to affiliate \(m\), which then lends to affiliate \(i\). As before, \(\Delta S_j = \Delta D_{jx} + \Delta D_{jm} = I + (-I) = 0\) and \(\Delta S_i = \Delta D_{im} = I\), while:

\(\Delta S_m = \Delta D_{mj} + \Delta D_{mi} = I + (-I) = 0\). Thus, the only deduction anywhere in the multinational group is \(i\)’s deduction of \(\tau_ir_iI\). This point about conduit affiliates applies equally to the cases below.

iv) Affiliate \(j \neq i\) issues \(I\) of debt to a third-party lender, and then injects equity of \(I\) into affiliate \(i\).

For affiliate \(j\), \(\Delta S_j = \Delta D_{jx} + \Delta E_{ji} = I + (-I) = 0\): i.e. the increase in third-party debt is offset by the decrease in \(E_{ji}\), so that affiliate \(j\) does not experience any change in its deductions under the NFD.
For affiliate $i$, $\Delta S_i = \Delta E_{ij} = I$: thus, affiliate $i$’s deduction increases by $\tau r_i I$.

As discussed previously, this conclusion is unaffected by interposing an arbitrary number of intermediary conduit affiliates between $j$ and $i$.

v) Affiliate $j \neq i$ issues $I$ of equity to third-party shareholders, and then lends $I$ to affiliate $i$.

For affiliate $j$, $\Delta S_j = \Delta E_{jx} + \Delta D_{ji} = I + (-I) = 0$: i.e. the increase in third-party equity is offset by the decrease in $D_{ji}$, so that affiliate $j$ does not experience any change in its deductions under the NFD.

For affiliate $i$, $\Delta S_i = \Delta D_{ij} = I$: thus, affiliate $i$’s deduction increases by $\tau r_i I$.

As discussed previously, this conclusion is unaffected by interposing an arbitrary number of intermediary conduit affiliates between $j$ and $i$.

vi) Affiliate $j \neq i$ issues $I$ of equity to third-party shareholders, and then injects equity of $I$ into affiliate $i$.

For affiliate $j$, $\Delta S_j = \Delta E_{jx} + \Delta E_{ji} = I + (-I) = 0$: i.e. the increase in third-party equity is offset by the decrease in $E_{ji}$, so that affiliate $j$ does not experience any change in its deductions under the NFD.

For affiliate $i$, $\Delta S_i = \Delta E_{ij} = I$: thus, affiliate $i$’s deduction increases by $\tau r_i I$.

As discussed previously, this conclusion is unaffected by interposing an arbitrary number of intermediary conduit affiliates between $j$ and $i$.

It follows from this result that different firms (whether multinational or domestic-only) competing for the same investment in country $i$ will obtain the same deduction ($\tau r_i I$) regardless of the source of their financing (and, in particular, for multinationals, regardless of the tax rate in their residence country). This eliminates ownership distortions (i.e. satisfies CON). It also solves the “mismatch” problem (i.e. the ability of multinationals to borrow in high-tax jurisdictions to finance investment in low-tax jurisdictions). In addition, it solves the earnings stripping problem: for instance, a parent injecting equity into a tax haven affiliate and then borrowing from the latter does not generate any tax deductions. The perceived problem of domestic deductions for borrowing that funds foreign investment would also not be an issue under the NFD regime. This system also eliminates the ability of MNCs to engage in multiple-dip financing. Unlike tracing rules, the NFD is not vulnerable to “cash damming” strategies, as it looks only to the stock of
capital in a given time period. It is also unaffected by MNCs’ choice of whether to label a capital flow to an affiliate as “debt” or “equity.”

Most fundamentally, the NFD eliminates debt-equity distortions for both domestic and multinational firms. However, it does not allow policymakers to subsidize debt (if that is what we interpret them as wishing to do), even if there happen to be positive externalities of debt. How significant a limitation this would constitute depends very much on how we conceptualize the rationale for the existing favorable tax treatment of debt. This tax preference appears to have its origins in the accounting treatment of interest payments. Under accounting conventions, interest is an expense associated with earning income, just like wages and the cost of raw materials. It therefore appears natural for interest payments to be deductible under accounting rules. Historically, this treatment of interest was imported into tax law from accounting, along with many other income tax concepts. Of course, the deduction of interest payments does not in itself fully explain the asymmetric treatment of interest and equity returns. This, however, appears to have its origins in the efforts of accounting rules to measure the income of a business from the perspective of the equityholders.

That the tax preference for debt has survived over time, especially in the face of withering criticisms from economists, is much more of a puzzle. It seems far-fetched, especially in the wake of the 2008 financial crisis, to argue that debt financing by corporations confers a positive externality on society. However, the longstanding practice of most of the world’s governments of offering a tax preference for debt is explicable in normative economic terms only under such a premise. Of course, it is entirely possible that even such a time-honored practice has no normative economic justification. Indeed, it may even be the case that optimal policy would entail penalizing rather than subsidizing debt. Recently, a small theoretical literature has emerged elaborating on possible normative justifications for the preferential treatment of debt.

Within the public finance literature, Gordon (2010) focuses on the implications of the (limited) progressivity of the US corporate income tax – in particular, small firms face a lower marginal corporate tax, while larger firms face a higher marginal tax rate. Gordon (2010) argues that the optimal policy in response to adverse selection in debt financing is to subsidize borrowing by firms with stronger prospects and to discourage (i.e. tax) borrowing by firms with
weaker prospects.\textsuperscript{15} The current US corporate tax system has two features that he argues are consistent with this aim. First, the progressivity of the tax rate implies that firms that end up being more successful face a higher marginal tax rate, and so obtain a larger marginal subsidy for debt. Second, firms that end up being more successful are more likely to be able to use past loss carryforwards. Thus, they again receive a larger marginal debt subsidy. The corporate tax system thus, according to Gordon (2010), subsidizes the debt of stronger firms to a greater extent. Moreover, once personal taxes on the interest income received by debtholders is taken into account, he argues, the overall impact of the income tax system is to subsidize borrowing by stronger firms while taxing borrowing by weaker firms.

Within the corporate finance literature, John, Senbet and Yang (2012) emphasize the role of corporate limited liability in explaining why a tax preference for debt may be warranted,\textsuperscript{16} while He and Matvos (2012) argue that the tax preference for debt can mitigate a wasteful war of

\begin{footnotesize}
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  \item The dominant approach within corporate finance to understanding the impact of taxes on firms’ debt choices has emphasized the tradeoff between the tax benefits of debt and the potential costs of financial distress. Gordon (2010) focuses on the implications within this framework of the (limited) progressivity of the US corporate income tax – in particular, small firms face a lower marginal corporate tax, while larger firms face a higher marginal tax rate. He argues that this framework predicts that larger firms will thus issue more debt than smaller firms. Yet, recent empirical evidence (e.g. Gordon and Lee, 2001) shows the opposite pattern, with higher debt ratios for smaller firms than for larger firms. Gordon (2010) argues that the observed pattern is more consistent with an adverse selection model of corporate borrowing. In a classic contribution, Myers and Majluf (1984) develop an asymmetric information model of the outside financing of firms. In their model, firms’ insiders have private information about the firm’s future prospects. Firms may need outside financing because of strong investment opportunities, or because of poor performance. When the insiders seek outside financing, it is impossible for them to credibly communicate (fully) to the outside investors the private information that their investment opportunities are strong. Thus, outside financing is typically more costly for firms than the use of internal funds (retained earnings). In response, firms with strong prospects refrain from seeking outside financing and rely on internal funds. The population of firms seeking outside financing thus consists predominantly of those with poor prospects. This is a classic adverse selection equilibrium, in which potentially mutually beneficial transactions fail to occur because of the inability to convey private information.

  \item With respect to “contract” creditors of the firm (such as debtholders, workers and suppliers), limited liability is of course merely a default rule that can be undone or created by contract. For “tort” creditors (such as potential victims of accidents or pollution caused by the firm), limited liability will prevail in practice as contracting is impossible. Thus, in states of the world in which it becomes insolvent, the firm will externalize some of the costs of its operations onto tort creditors. This implies that the equityholders will in general wish to over-invest – i.e. to expand the scale of their corporation’s activities beyond the socially optimal level. A standard result in the corporate finance literature is that introducing debt into a firm’s capital structure reduces the desired level of investment from the perspective of equityholders (Myers, 1977). The equityholders choose the investment level to maximize the value of their residual claim, subject to the payments owed to the debtholders. The larger these payments, the lower the residual claim, and hence the lower the optimal investment level (from the equityholders’ standpoint). In corporate finance, this is generally viewed as an under-investment result. In contrast, John, Senbet and Yang (2012) argue that the impact of debt may not entail a distortion to investment, but rather may correct the over-investment due to limited liability. However, in their model, equityholders have insufficient incentives to issue debt. Thus, it is socially optimal to subsidize debt issuance, for instance through a tax preference for debt. In this framework, the tax preference operates essentially as a Pigovian subsidy to debt, mitigating the tendency for equityholders to over-invest in response to limited liability.
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attrition in a declining industry. Whether or not we lend any credence to these types of theories, this emerging body of literature focuses attention on the need for a compelling normative rationale for the tax preference for debt if it is to be defended on principled grounds. On the other hand, economists have been arguing for decades for an end to the preferential treatment of debt, implicitly rejecting the notion that debt confers positive externalities that warrant Pigovian subsidies. If we adopt this latter approach, at least on the grounds that a compelling case for the optimality of a tax preference for debt has not yet been made, then the key limitation of the NFD – i.e. that it fails to provide policymakers with the opportunity to subsidize debt – appears much less of a problem. Indeed, it may constitute an advantage by ending the historical legacy bequeathed by the importation into tax law of equityholder-centered accounting concepts.

6) Conclusion [to be written]

References


17 He and Matvos (2012). They construct a game theoretic model of a “war of attrition” game between two firms in a declining industry. The industry can only support one of the firms, and it is thus socially optimal for the weaker firm to exit immediately. However, in a setting with private information about each firm’s strength, each firm has an incentive to remain in the industry. When firms take on debt, their exit times are shortened because of the possibility of default and insolvency. However in this model, firms have insufficient incentives to take on debt. Thus, a subsidy to debt (such as that implemented through the tax system’s preference for debt) can encourage firms to issue more debt. This in turn makes it more likely that the weaker firm will face insolvency and default, which mitigates the wasteful war of attrition between the two firms.


Figure 1: An Illustration of Multiple-Dip Financing

Third-party Lender

Firm H: deducts interest in H, M and L

H Affiliate

M Affiliate

L Affiliate

Loan

Interest

Dividends

Loan

Interest

Equity

Haven 1 Affiliate

Interest

Equity

Haven 2 Affiliate

Equity

Dividends

Equity

Dividends
Figure 2: An Illustration of the Limits to Multiple-Dip Financing in the Presence of “Strong” CFC Rules

With “strong” CFC rules, Firm L deducts interest in H and M.