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COLLOQUIUM ON TAX POLICY  
AND PUBLIC FINANCE  
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**“Competitive Neutrality among Debt-Financed  
Multinational Firms”**

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NYU School of Law  
Vanderbilt Hall-208  
Time: 4:00-5:50pm  
Number 7

## **SCHEDULE FOR 2013 NYU TAX POLICY COLLOQUIUM**

(All sessions meet on Tuesdays from 4-5:50 pm in Vanderbilt 208, NYU Law School)

1. January 22 – David Kamin, NYU Law School, “Are We There Yet?: On a Path to Closing America's Long-Run Deficit.”
2. January 29 – Edward McCaffery, USC Law School, “Bifurcation Blues: The Perils of Leaving Redistribution Aside.”
3. February 5 – Jake Brooks, Georgetown Law School, “Taxation, Risk, and Portfolio Choice: The Treatment of Returns to Risk Under a Normative Income Tax.”
4. February 12 – Lilian Faulhaber, Boston University School of Law, “Tax Expenditures, Charitable Giving, and the Fiscal Future of the European Union.”
5. February 26 – Peter Diamond (with Emmanuel Saez), MIT Economics Department, “The Case for a Progressive Tax: From Basic Research to Policy Recommendations.”
6. March 5 – Darien Shanske, University of California at Hastings College of Law, “Modernizing the Property Tax.”
7. **March 12** – **Dhammika Dharmapala, U. of Illinois Law School, “Competitive Neutrality among Debt-Financed Multinational Firms.”**
8. March 26 – Sarah Lawsky, University of California at Irvine Law School, “Unknown Probabilities and the Tax Law.”
9. April 2 – Alan Viard, American Enterprise Institute, “Progressive Consumption Taxation: The Choice of Tax Design.”
10. April 9 – Brian Galle, Boston College Law School, “A Nudge is a Price.”
11. April 16 – Leslie Robinson, Tuck Business School, Dartmouth College, “Internal Ownership Structures of Multinational Firms.”
12. April 23 – Larry Bartels, Department of Political Science, Vanderbilt University, “Inequality as a Political Issue in the 2012 Election.”
13. April 30 – Itai Grinberg, Georgetown Law School, “A Governance Structure to Mediate the Battle Over Taxing Offshore Accounts.”
14. May 7 – Raj Chetty, Harvard Economics Department, “Active vs. Passive Decisions and Crowd-Out in Retirement Savings Accounts: Evidence from Denmark.”

# Competitive Neutrality among Debt-Financed Multinational Firms

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## Abstract

Debt plays an important role in the financing of multinational corporations (MNCs). Interest expenses are typically tax-deductible in most corporate income tax systems, and there has been a growth of interest in recent years in the tax treatment of debt and its consequences. This paper discusses the optimal form that interest deductibility and associated restrictions should take in a multi-jurisdictional setting. We straightforwardly extend existing neutrality norms in international taxation to serve as a benchmark. Our simple notion of competitive neutrality (CN) 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 first show using a simple three-country framework that when MNC investments are debt-financed, the potentially differential deductibility of debt entailed by various tax law provisions leads in general to violations of CN. We also show that a multilateral formula apportionment system would not generally satisfy CN, unless all MNCs' assets are distributed across countries in the same proportions. Moreover, we also show that MNCs' ability to establish "multiple-dip" financing structures (in which the same third-party debt is deducted in multiple countries) generally exacerbates these violations of CN.

We suggest – more as a thought experiment than as a serious policy proposal – a regime that satisfies CN under a general set of conditions. This involves countries imposing a worldwide debt cap that restricts a multinational affiliate's deductible interest to (some arbitrary fraction of) the total worldwide third-party interest payments of its multinational group. We argue that if all countries adopt this rule, and do not impose any other restrictions on interest deductibility for multinational affiliates, then CN will be satisfied if firms earn sufficient income in each country. This regime relies on harnessing rather than restricting MNCs' "multiple-dip" financing structures. We also review various proposed explanations for why interest is tax-deductible, and conclude by revisiting the arguments for the tax deductibility of debt in a multi-jurisdictional setting.

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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).

Interest expenses are typically tax-deductible in most corporate income tax systems (subject to various limitations).<sup>1</sup> The recent academic literature has highlighted the growing sophistication of MNCs in structuring their financing arrangements (e.g. Mintz and Weichenrieder, 2010). The increasing complexity of these arrangements has significant implications for the tax deductibility of interest payments. 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 of MNCs' potential ability to deduct interest in multiple jurisdictions (when not constrained by specific anti-avoidance rules).

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) proposes a multilateral system of formulary apportionment of interest deductions across jurisdictions, based on the location of firms' assets or sales. 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

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<sup>1</sup> 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](http://www.taxand.com/news/newsletter/deductibility_of_interest_expenses-eu_crackdown)

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 is 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 a different margin that has not been widely discussed in the previous literature – competitive neutrality among MNCs from different residence countries. Competitive neutrality (CN) entails (in this context) that all multinational firms competing for the same investment face the same after-tax cost of debt (regardless of their country of residence). Various concepts related to CN have been widely discussed in the literature on international tax policy. For instance, Desai and Hines (2003) 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. They highlight in particular the possibility that residence-country taxation of foreign earnings may distort these ownership patterns.

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 by considering the case of debt-financed MNCs. This is an important case to consider because it is clear that when MNC investments are debt-financed, the potentially differential deductibility of debt caused by differing home-country tax rates, thin capitalization rules and other tax law provisions may potentially violate CN.

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 CN. The arguments about interest allocation advanced by Hines (2008; 2009) imply the optimality of a solution in which all MNCs are able to borrow in the highest-tax country, and where the highest-tax country allows full deductibility for all MNCs' interest expenses. While such a regime would satisfy CN, it 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 CN.

We also show that a multilateral formula apportionment system (Graetz, 2008) while having many virtues in terms of addressing other types of inefficiencies, does not generally satisfy CN. Similarly, a system of "sophisticated" thin capitalization rules (based on affiliates' debt to asset ratios, as imposed, for instance, in Germany) also fails to generally satisfy CN, except in the unlikely scenario in which all MNCs' assets are distributed across countries in the same proportions.

We suggest one (at least theoretically feasible) regime that may satisfy CN under a wider set of conditions than those described above. This 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 if all countries adopt this rule, and (unlike the UK) do not impose any other restrictions on interest deductibility for multinational affiliates, then CN will be satisfied if firms earn sufficient income in each country.

This outcome would create a level playing field among firms in terms their after-tax cost of debt. However, it is offered here more as a thought experiment than as a serious policy proposal, because it would also significantly exacerbate the debt-equity distortion, the

asymmetry between multinational affiliates and purely domestic firms, and incentives to undertake negative-value projects. Nonetheless, we further argue that these disadvantages can be ameliorated (while CN continues to be satisfied) if each country allows only some arbitrary fraction of total worldwide third-party interest payments to be deductible.

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. Our unilateral worldwide debt cap system achieves CN but does not allow countries to coordinate on a putatively optimal preference for debt. It also does not ensure competitive neutrality between multinationals and domestic-only firms. A multilateral version of our solution requires much greater international coordination, but allows countries to decide collectively on an optimal preference for debt and to implement this via our worldwide debt cap system. It would also ensure neutrality between multinationals and domestic-only firms.

A special case of worldwide debt cap system is one in which all countries deny interest deductibility. We revisit the various proposed explanations for why interest is tax-deductible, and conclude that the case for eliminating the deductibility of debt is greatly strengthened by the growing importance of MNCs and the growth of cross-border portfolio investment, as well as by the increasing difficulties in coordinating interest deductions across jurisdictions.

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 CN and shows how the current tax treatment of MNCs' interest deductions typically fails to satisfy CN. Section 4 considers CN in situations where MNCs can obtain deductions in multiple jurisdictions, and analyzes the consequences of a regime in which countries impose worldwide debt caps. Section 5 reviews proposed explanations for the tax deductibility of interest, and discusses their relevance in a world characterized by growing cross-border activity. Section 6 concludes.

## **2) The Importance of Debt for Multinational Firms**

[To be written]

## **3) The Basic Problem of Competitive Neutrality**

### **3.1) Example and Definition**

To introduce and analyze the concept of competitive 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 attempt to 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 possibilities as to how these deductions may apply 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”; one 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 “competitive neutrality” (CN), which may be defined as follows:

**Definition of CN:** Competitive neutrality is satisfied when the tax system does not change the identity of firms that acquire particular assets; specifically, it is satisfied when all multinational firms that are competing for the same investment face the same after-tax cost of debt.

CN is of course only one of a number of possible criteria that an international tax regime would ideally satisfy. However, it is likely to be an important one to the extent that asset ownership is associated with differential productivity. Desai and Hines (2003) 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 criterion of Capital Ownership Neutrality (CON), 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 ownership. 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 CN is violated, 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 the purchaser holds the asset in country L for one period. The more productive owner would generate a gross return of \$115, and faces a 10% after-tax cost of debt. The less productive owner would generate a gross return of \$111, and faces a 5% after-tax cost of debt. In these circumstances, the less productive owner would be willing to bid more for the asset than would the higher-productivity owner.

As noted above, CN reflects only one of many possible dimensions along which tax policy may give rise to inefficiencies. Of course, a complete analysis of the relevant tax policy 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.

### 3.2) The Role of 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 CN 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.<sup>2</sup> 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: “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

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<sup>2</sup> 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.

context and assumptions, as explored below. In general, however, CN will be violated in a wide range of circumstances.

### **3.3) Competitive Neutrality through 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. For instance, 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 CN 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 also 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 is a subtle one that 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).

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 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.

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 Section 5 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 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 CN. 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).

If the various arguments above are viewed as compelling, then there exists a coherent normative argument for an international regime (achieved purely through the unilateral generosity of country H) in which universal borrowing in H satisfies CN. Even for those persuaded by the normative argument, however, it is clear that in view of earnings stripping rules and the disallowance of certain deductions, this picture is very different from the actual one 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 discussed in Section 4 below, even the normative attractiveness of this solution is undermined when firms are able to engage in multiple-dip financing.

### ***3.3.1) Earnings Stripping Rules***

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 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).

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%. Thus, firm H will enjoy a competitive advantage in bidding for the asset in country L, and CN will be violated.

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 CN 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 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.

### ***3.3.2) The Disallowance of Deductions Associated with Foreign Investment***

The previous subsection addressed a scenario in which each firm borrows, and deducts its interest payments, in country 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.”

However, it is clear that disallowance along these lines by country H will generally lead to violations of CN. 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 CN 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%. 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 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.

It is clearly not surprising that CN is violated in these types of scenarios where interest deductions are subject to disallowance. That MNCs resident in high-tax countries enjoy a competitive advantage in these circumstances is not a novel claim: though it has not been explicitly discussed in the published literature, it is a straightforward extension of existing ideas, and has been discussed in conference settings. Next, we turn to various solutions to the treatment of interest deductions and assess how they fare in terms of CN.

### **3.4) Formula Apportionment and Thin Capitalization Rules**

#### ***3.4.1) 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 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). This proposal would require significant 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-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, this proposed formula apportionment system would not satisfy CN, except in the very special set of circumstances in which all of the world's MNCs distribute their assets across countries in identical proportions. To see this, 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. Then, 50% of its worldwide interest deductions would be allocated to country H (and deducted at 35%) and 50% of its worldwide interest deductions would be allocated to country L (and deducted at 15%); its after-tax cost of debt would thus be 7.5%. Suppose also that firm M holds 50% of its assets in country M and the other 50% in country L. Then, 50% of its worldwide interest deductions would be allocated to country M (and deducted at 25%) and 50% 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%. In competing for a \$100 investment in country L, firm H would thus enjoy a lower after-tax cost of debt.

Clearly, whenever different MNCs have different patterns of asset ownership across countries (as would be expected in general), a system of formula apportionment based on assets will not satisfy CN. Tax rate differences across countries are smoothed out to some degree by formula apportionment, but the competitive advantage enjoyed by firms that are disproportionately located in high-tax jurisdictions will not be eliminated. A similar conclusion holds for the thin capitalization rules that have been widely introduced in recent years, as discussed below.

### ***3.4.2) Thin Capitalization Rules***

Thin capitalization provisions originally resembled the earnings stripping rules discussed earlier, 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 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 quite similar outcomes to 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 this 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.

Note that this violation of CN holds in essentially the same circumstances as those discussed above with respect to formula apportionment – i.e. whenever different MNCs have different patterns of asset ownership across countries. Thus, while formula apportionment and thin capitalization rules solve some of the problems arising from the treatment of interest deductions in a multijurisdictional world, they do not satisfy CN.

#### **4) Competitive Neutrality with Multiple-Dip Structures**

##### **4.1) Introducing 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. However, for these interest payments to all be successfully deducted, several conditions must be satisfied. In particular, it is important that the home country (country H in this example) 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 H 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; 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 EU. Equivalently, we assume that treaty shopping by the MNC can achieve the same ends (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 (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 CN. In our earlier example of firm H and firm competing for an investment in country L, CN 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%. 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.

#### **4.2) The Consequences of Multiple-Dip Financing for Universal High-Tax Borrowing**

In Section 3.3, we described a regime for the treatment of MNCs' interest deductions that – while far from current realities – carried some normative force. This involved each MNC locating all of its debt in country H, and country H being sufficiently generous as to allow full deductibility. As argued in Section 3.3, this regime would straightforwardly satisfy CN, although it appears politically infeasible for a number of reasons. However, that argument was 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, even leaving to one side questions of political feasibility.

There are two distinct problems created for this regime by multiple-dip financing. First, recall that the normative rationale for this regime is premised on a 35% deduction for local borrowing being optimal from the perspective of country H. That is, local borrowing in country H presumably creates a positive externality that warrants a Pigovian subsidy at a 35% rate. Even if we believe this to be the case, however, 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 benefits are 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 relative to equity.

A distinct problem arises if different MNCs have differential access to multiple-dip structures, because of the types of CFC rules discussed in Section 4.1 above (or other tax law

provisions with similar effects). Recall that under what might be termed a “strong” CFC rule (that taxes interest income paid to haven affiliates by other affiliates), the use of multiple-dip financing is significantly curtailed. For firm H, 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. In contrast, firm L would have some (limited) scope to use multiple dips. Firm L could borrow in H (deducting interest payments to the third-party lender at 35%) and could also “double dip” in country M, deducting at 25%. However, it cannot seek an additional deduction at 15% in L, as the taxation of haven affiliates’ interest income by country L at 15% would eliminate this gain. Overall, firm L would have a lower after-tax cost of debt in our example, and thus a competitive advantage over firm H.

A natural question that arises with regard to the latter argument is whether strong 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.

### **4.3) Competitive Neutrality with Worldwide Debt Caps**

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.<sup>3</sup> 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

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<sup>3</sup> See Sullivan and Cromwell and Latham and Watkins descriptions . . .

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 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 wonder 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. Thus, its worldwide interest expense increases by \$10 per year as a result of this investment. 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%, so that CN is satisfied.

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, independently of the distribution of its

preexisting assets across countries. This outcome assumes that each affiliate of each MNC has sufficient income to utilize the deductions currently. If this last condition does not hold, the deductions may be carried forward and used to offset future income. As previously discussed, these carryforwards are less valuable than current deductions. However, as long as the (weighted) fraction of countries in which current income is inadequate for a full deduction is roughly similar across MNCs, CN will be approximately satisfied. These requirements are thus considerably less onerous than the requirement that MNCs' assets are distributed in identical patterns across countries (required for CN under formula apportionment or thin capitalization rules).

Thus, an international tax regime in which all countries use only a UK-style worldwide debt cap can satisfy CN and solve the problem of ownership distortions. However, it is clear that (relative to formula apportionment, thin capitalization rules, and the other approaches discussed above) a worldwide debt cap system would 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 the worldwide cap regime would seem to outweigh its benefits in terms of achieving CN. However, it is important to note that this system can be generalized in ways that both preserve CN and greatly reduce the distortions along other dimensions. So far, we have assumed that worldwide interest expense is fully deductible in each country. There is no intrinsic reason why this must be the case, 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), and more closely resembles a "revenue sharing" apportionment system (e.g. Mintz, 2004). 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.

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, CN 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.

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. 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 in many respects 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 worldwide debt cap 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 CN 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  $\gamma$ 's).

Thus, while the primary virtue of a worldwide debt cap system would be the achievement of CN (under relatively mild assumptions and a minimal degree of multilateral coordination), it also has a number of other significant virtues. However, 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 in any way 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 CN among MNCs; it does not address the separate but related issue of competitive neutrality between MNCs and purely domestic firms. 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. Nonetheless, 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 CN 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.

#### **4.4) A Multilateral Version of the Worldwide Debt Cap System**

Recall that, as noted in our earlier discussion, the unilateral version of the worldwide debt cap system (while satisfying CN) leaves unresolved two potentially important issues. One is the overall degree of debt preference faced by MNCs, which depends on the simultaneous and independent choices of all of the world's governments. The second is the relationship between the after-tax cost of debt faced by MNCs and that faced by purely domestic firms. In this subsection, we briefly sketch the outlines of a multilateral version of this system that can, given sufficient international coordination, address both these issues.

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 (as discussed in Section 5 below) if we are prepared to believe that debt financing 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%. This could be implemented through a worldwide debt cap system by assigning  $\gamma$ 's across countries to satisfy the following criteria. First, the  $\gamma$ 's would (as in Section 4.3) be independent

of the behavior of any firm, for example being based on countries' population or economic size. Second, the  $\gamma$ 's would be chosen so that the sum of tax rates across countries, weighted by the appropriate  $\gamma$ '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 4.3. This of course satisfies CN, 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 CN 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. These tax rates pertain to income and to all expenses other than interest.

## **5) Revisiting the Tax Preference for Debt**

The tax preference for debt discussed above has 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, and in the

wake of the 2008 financial crisis perhaps even laughable, 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, however, a small theoretical literature has emerged elaborating on possible normative justifications for the preferential treatment of debt. Given the centrality of this question for assessing the consequences of the tax preference for debt, we briefly review the main ideas articulated in this literature.

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.

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. 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.

John, Senbet and Yang (2012), on the other hand, emphasize the role of corporate limited liability in explaining why a tax preference for debt may be warranted. 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.

A third approach is developed by 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.

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. As is well-known, there are two alternative ways to eliminate 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.

Under a CBIT, firms will generally be denied interest deductions, while interest income that they receive will be exempt from tax (thus, banks are essentially exempt from taxation on their returns from firms). However, interest paid by non-CBIT entities such as households is subject to tax. The implementation of a CBIT entails some difficult issues in relation to cross-border lending. It also faces significant transition difficulties with regard to the treatment of existing debt. An ACE instead extends deductibility to equity returns, and has a wide range of neutrality properties. In general, 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. De Mooij (2012) also advocates the introduction of an ACE system, emphasizing instead the achievement of neutrality between debt and equity financing.

In the light of this ongoing debate, it is worth noting that a system in which interest payments are denied deductibility is a special case of the unilateral worldwide debt cap system that we described in Section 4 above (and thus of course satisfies CN). In particular, when each country chooses to set  $\gamma = 0$ , interest is not deductible for MNCs. If the unilateral version of the system were in place, then it is arguable that countries would have an incentive to lower their  $\gamma$  – doing so increases revenue without driving away foreign activity. Ultimately, we might expect that all countries (as long as they are “small” in relation to MNCs’ worldwide activity) would set  $\gamma = 0$ , i.e. disallow all deductions and in effect abolish the tax-deductibility of interest. This would also be the outcome under our multilateral version of the system if countries were to collectively decide that no preference for debt is warranted, and accordingly assign  $\gamma = 0$  for all countries.

Of course, the coordination and transition issues associated with the CBIT approach also apply to this special case of the worldwide debt cap. These issues must ultimately be addressed, but it is important to highlight the following implication of our discussion. A CBIT approach involving the end of interest deductibility would also solve the problem of CN. 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, at least to a first approximation, the ACE does not create a violation of competitive 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 CN for debt-financed investments, given that it leaves in place existing deductions for interest payments. Thus, while there are some strong grounds for favoring an ACE over the abolition of

interest deductibility, one advantage of the latter that has not been previously discussed is that would solve the problem of CN.

**[to be completed]**

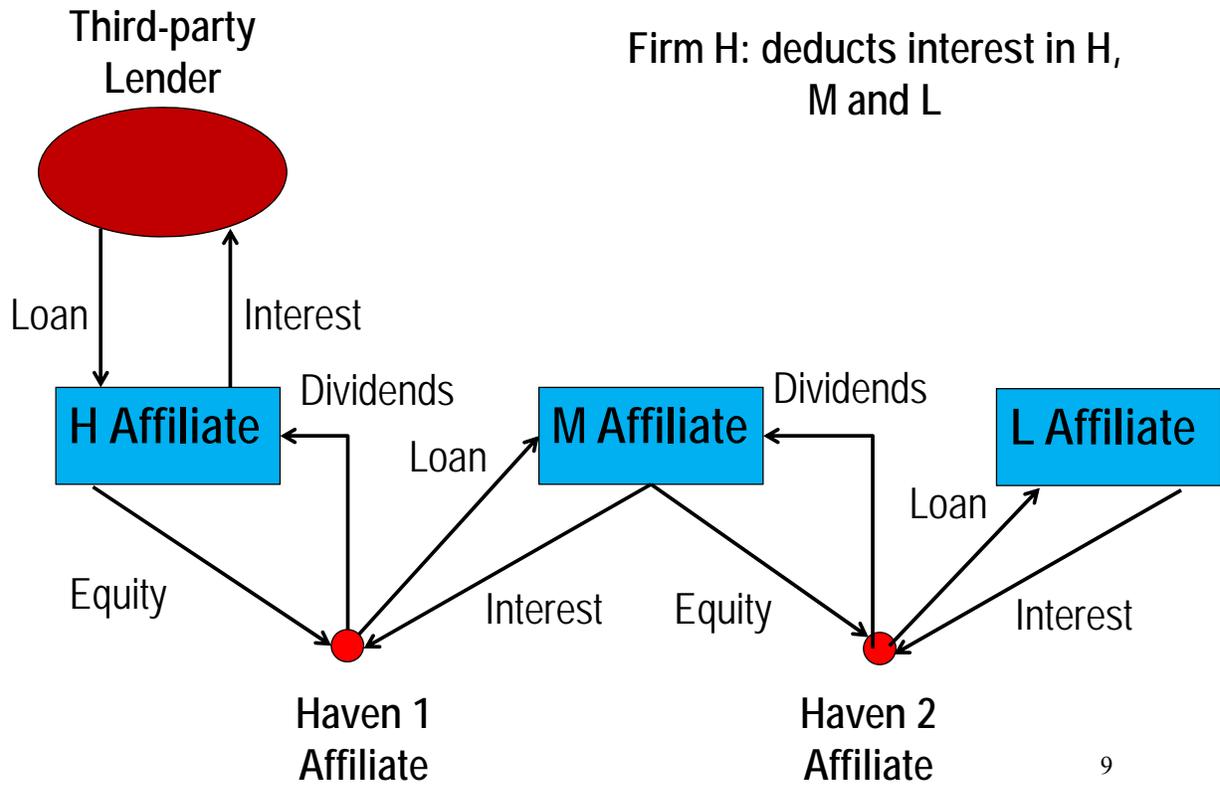
## **6) Conclusion [to be written]**

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**Figure 1: An Illustration of Multiple-Dip Financing**



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

