Foreign Direct Investment, Thin Capitalization, and the Interest Expense Deduction: A Policy Analysis

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PRÉCIS

Cinq pays, soit l’Australie, le Danemark, l’Allemagne, l’Italie et la Nouvelle-Zélande, ont récemment adopté des mesures contraignantes détaillées sur la déductibilité des frais d’intérêt qui s’applique aux investissements directs à l’étranger. L’instauration de l’article 18.2 de la Loi de l’impôt sur le revenu du Canada, qui interdit la déduction des frais d’intérêt pouvant être attribuables à certains types de revenu exonérés dans le cadre d’investissements directs à l’étranger, ne concorde avec ces mesures législatives qu’au sens large où il tente d’imposer une certaine forme de restriction sur la déductibilité. L’approche choisie par le ministère des Finances diffère sous deux aspects importants de celle qui a été adoptée dans ces autres pays. Tout d’abord, il semble qu’elle repose sur l’hypothèse que différents types de restriction sur la déductibilité sont nécessaires dans le contexte des investissements directs canadiens à l’étranger et étrangers au Canada, alors que les règles de capitalisation restreinte aux paragraphes 18(4) et 18(6) s’appliquent dans ce dernier cas afin de limiter la déduction des frais d’intérêt sur la dette détenue par des actionnaires importants. Deuxièmement, le rattachement est utilisé pour lier les frais d’intérêt aux revenus de source étrangère dans les investissements directs canadiens à l’étranger. Les régimes extensifs de capitalisation restreinte en Australie et en Nouvelle-Zélande s’appliquent également aux investissements directs canadiens à l’étranger et aux investissements directs étrangers au Canada, de même qu’à la dette entre sociétés du même groupe et à la dette externe d’un groupe multinational. Les frais d’intérêt qui dépassent un ratio de levier financier déterminé ne peuvent être déduits sauf si le ratio d’une société résidente concorde avec le facteur de multiplication du ratio consolidé du groupe multinational auquel elle appartient. Les restrictions sur la déductibilité qui ont été adoptées au Danemark, en

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Allemagne et en Italie suivent le même schéma global, à ceci près qu’un ratio de couverture des intérêts, qui est caractéristique de la législation sur le dépouillement de surplus, permet de préciser le niveau permis des frais d’intérêt.

Le présent article soutient que les modèles législatifs qui ont été adoptés dans ces pays représentent de meilleures restrictions sur la déductibilité des frais d’intérêt dans un deuxième monde idéal où les décideurs en fiscalité visent la maximisation du bien-être social. Même si le résultat législatif représente une application largement symétrique d’une capitalisation restreinte extensive ou d’une restriction extensive du dépouillement de surplus dans le cadre d’investissements directs canadiens à l’étranger et étrangers au Canada, les arguments de politique pour les restrictions sur la déductibilité sont relativement différents dans ces deux contextes. Les options législatives concurrentes à une déduction non restreinte des frais d’intérêt sont également de natures différentes.

En tant que mode modifié de répartition des actifs, un régime extensif de capitalisation restreinte permet aux décideurs en fiscalité de maintenir l’équilibre nécessaire entre la nécessité de maintenir les revenus et l’incitation à des investissements directs canadiens à l’étranger et à des investissements directs étrangers au Canada qui sont souhaitables. En tant que mode de répartition du revenu brut, une approche extensive du dépouillement de surplus permet d’atteindre le même équilibre, mais il y a certaines différences dans les particularités de conception qui peuvent motiver une légère préférence à l’égard d’un régime extensif de capitalisation restreinte. Les auteurs concluent avec la présentation de certains faits empiriques sur les ratios de levier financier de sociétés canadiennes qui suggèrent provisoirement un cadre de référence dans la détermination d’un ratio d’exonération. Ils estiment que le ministère des Finances doit profiter de la publication du rapport final du Groupe consultatif sur le régime canadien de fiscalité internationale pour revoir l’article 18.2 ainsi que les règles relatives à la capitalisation restreinte aux paragraphes 18(4) et 18(6).

A B S T R A C T

Five countries—Australia, Denmark, Germany, Italy, and New Zealand—have recently adopted comprehensive restrictions on the deductibility of interest expense applicable in the context of foreign direct investment. The introduction of section 18.2 of Canada’s Income Tax Act, which denies the deduction of interest expense that can be traced to the earning of certain forms of exempt income in the context of outbound direct investment, is consistent with these legislative developments only in the broad sense that it attempts to impose some form of deductibility restriction. The approach chosen by the Department of Finance differs in two important respects from that adopted in those other countries. First, it appears to be based on an assumption that different types of deductibility restrictions are required in the context of outbound and inbound direct investment, with the thin capitalization rules in subsections 18(4) to (6) applying in the latter context to limit the deduction of interest expense on debt held by significant shareholders. Second, tracing is used to link interest expense and foreign-source income in the context of outbound direct investment. The comprehensive thin capitalization regimes in Australia and New Zealand apply equally in the context of outbound and inbound direct investment, as well as equally to intragroup debt and the external debt of a multinational group. Interest expense in excess of a specified leverage ratio is denied deductibility unless a resident corporation’s ratio is consistent with a multiple of the consolidated ratio of the multinational group to which it belongs. The deductibility restrictions adopted in Denmark, Germany, and Italy follow this same broad pattern, but an interest-coverage
ratio, characteristic of earnings-stripping legislation, is used to specify the permissible level of interest expense.

This article argues that the legislative models adopted in these particular countries are a preferable form of interest deductibility restriction in a second-best world in which tax policy makers pursue the maximization of national welfare. Although the legislative outcome is a largely symmetrical application of a comprehensive thin capitalization or earnings-stripping restriction in the context of outbound and inbound direct investment, the policy case for deductibility restrictions is somewhat different in these two contexts. The competing legislative alternatives to an unrestricted interest expense deduction are also different.

As a modified form of asset apportionment, a comprehensive thin capitalization regime allows tax policy makers to realize a necessary balance between the need for revenue maintenance and the encouragement of desirable outbound and inbound direct investment. As a form of gross-revenue apportionment, a comprehensive earnings-stripping approach can realize the same balance, but there are some differences in design features that may suggest a slight preference for a comprehensive thin capitalization regime. The authors conclude with the presentation of some empirical evidence of leverage ratios of Canadian corporations that tentatively suggest a baseline in specifying a safe-harbour ratio. They believe that the Department of Finance should take the opportunity provided by the report of the Advisory Panel on Canada’s System of International Taxation to reconsider section 18.2, as well as the thin capitalization rules in subsections 18(4) to (6).

**KEYWORDS:** ECONOMIC IMPACT ■ FOREIGN INVESTMENT ■ INTEREST DEDUCTIBILITY ■ INTERNATIONAL TAXATION ■ THIN CAPITALIZATION

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**CONTENTS**

Editor’s Note 806
Introduction 807
Possible Revenue and Efficiency Effects of an Unrestricted Interest Expense Deduction 814
Outbound Direct Investment: Sourcing Interest Expense for Deductibility Purposes 826
National Welfare, Ownership Neutrality, and the Case for Interest Deductibility Restrictions 827
Tracing, Formulary Apportionment, and the Normative Arbitrariness of Sourcing Rules 834
Inbound Direct Investment: Protecting Source-Country Taxation of an Element of Location-Specific Profits 841
National Welfare and a Generalized Rule of Non-Deductibility for Intragroup Debt 842
Using a Thin Capitalization Regime To Limit the Sourcing of External Group Debt and Refine the Identification of the Tax-Driven Use of Intragroup Debt 849
Specifying a Safe-Harbour Leverage Ratio 855
Regression Model 860
Regression Results 862
Industry Means 864
Conclusion 869
EDITOR’S NOTE. On December 10, 2008, the Advisory Panel on Canada’s System of International Taxation released its final report, Enhancing Canada’s International Tax Advantage. Unfortunately, the publication process for the following article was too far advanced to incorporate any reference in the text to the advisory panel’s recommendations on the subject of interest deductibility restrictions. In the context of outbound direct investment, the advisory panel recommended that

- the deductibility restriction in section 18.2 of the Income Tax Act should be repealed; and
- no additional deductibility restrictions should be adopted for Canadian corporations that use borrowed funds to invest in foreign affiliates.

In the context of inbound direct investment, the advisory panel recommended that application of the deductibility restriction imposed by the existing thin capitalization rules in subsections 18(4) to (6) remain limited to interest expense on debt owed to a “specified non-resident,” which is defined as

- a non-resident who, either alone or together with other non-arm’s-length persons, owns shares of the capital stock of a Canadian corporation with 25 percent or more of the voting rights or value of all shares (a “specified non-resident shareholder”); or
- a non-resident who does not deal at arm’s length with any shareholder who, either alone or together with other non-arm’s-length persons, owns shares of the capital stock of a Canadian corporation with 25 percent or more of the voting rights or value of all shares (a “specified shareholder”).

Perhaps most importantly, the advisory panel did not see any need, at this time, to modify the rules to account for debt owing to arm’s-length persons in computing the permissible debt-to-equity ratio. In this respect, the advisory panel recommended only that the ratio be reduced from 2:1 to 1.5:1, along with an extension of the rules to partnerships, trusts, and Canadian branches of non-resident corporations. The advisory panel also recommended that a specific anti-avoidance rule be adopted to restrict the deduction of interest expense associated with a narrow range of tax-motivated “debt-dumping transactions.”

As readers of the following article will see, these recommendations of the advisory panel are generally at odds with the policy case articulated by the authors for the adoption of a comprehensive thin capitalization regime, which would apply equally in the context of outbound and inbound direct investment to restrict the deduction of interest expense on all debt of a Canadian corporation in excess of a permissible leverage ratio. The advisory panel’s recommendation to reduce the debt-to-equity ratio in the application of subsection 18(4) is broadly consistent with the empirical evidence of leverage ratios presented in the article; however, a failure to account for arm’s-length debt substantially weakens the restrictiveness of the recommended reduction. It remains to be seen what course of legislative action, if any, the Department of Finance may choose to pursue.
INTRODUCTION

Several member countries of the Organisation for Economic Co-operation and Development (OECD) have recently undertaken reviews of their international tax rules. A principal focus of these reviews is the matrix of rules affecting the perceived competitiveness of multinational groups that are headquartered locally.¹ With the announcement in the March 19, 2007 budget of an advisory panel on Canada’s system of international taxation (referred to herein as “the advisory panel”),² Canada joined this latest trend in national tax policy making. A major issue with income from outbound direct investment has always been the recognition by residence countries (that is, the country in which an investor is considered to be resident) of the prior taxing right of source countries (that is, the country in which the income is considered to be earned). The choice is conventionally framed as one between a territorial system, under which foreign-source income is exempt, and a worldwide system, under which all such income is taxed by the country of residence, either as earned or on repatriation, with a credit for source-country tax. A related issue, which is now receiving increasing attention, concerns the deductibility for residence-country purposes of interest expense that can be linked with the earning of foreign-source income.

Although it is somewhat of a simplification, concern over the competitiveness of domestically based multinationals has apparently caused a shift away from the deferral with credit system to the exemption system as the dominant country practice for a range of income.³ This shift has also been driven, in part at least, by the recognition


³ For example, where foreign-source income is repatriated as a dividend, just over two-thirds of OECD countries exempt this category of income from tax. With one exception, the other countries subject such income to tax, but with a credit for foreign taxes paid. For income earned in countries other than six specified high-tax countries, New Zealand has been the exception, taxing foreign-source active business income as it is earned by a controlled foreign corporation (CFC). New Zealand, however, has recently moved away from its branch-equivalent approach
that there may not be that much in the way of substantive difference between the two systems. Under either, the unrestricted deduction of interest expense can reduce the tax rate on foreign-source income earned through a controlled foreign corporation (CFC) below zero. It is somewhat surprising, therefore, that country practices have been remarkably consistent in permitting the largely unrestricted deduction of interest expense in the context of outbound direct investment, with restrictions tending to be weak or non-existent.

Until recently, the notable exception has been the United States, which uses a set of sophisticated formulary apportionment rules to a deferral plus exemption system. See Developing an Active Income Exemption for Controlled Foreign Companies and A Direction for Change, supra note 1. The proposals were carried forward in proposed legislation that also introduces a thin capitalization regime in the context of outbound direct investment. New Zealand, Minister of Finance and Minister of Revenue, “Tax Reform To Help New Zealand Companies Compete Overseas,” Press Release, July 2, 2008. The UK Treasury has also recently proposed a move to an exemption system for active business income. See Taxation of the Foreign Profits of Companies, supra note 1. The proposal reverses the earlier position of Inland Revenue, which defended the foreign tax credit system on the basis of neutrality for the decision to invest at home or abroad. See United Kingdom, Inland Revenue, Double Taxation Relief for Companies: A Discussion Paper (London: Inland Revenue, 1999). In the United States, a similar recommendation for an exemption system was included as part of the “simplified income tax plan” reform alternative described in Report of the President’s Advisory Panel on Federal Tax Reform, supra note 1, at 102-5, 132-35, and 239-44.

Two common aspects of credit systems ensure that source-country tax on the income is predominant. First, foreign-source income earned through a foreign corporation is generally not taxed by a residence country until repatriation to a resident investor. Second, although the amount of the credit is limited to residence-country tax that is otherwise payable on the income, an element of averaging of high-tax and low-tax foreign-source income is commonly permitted. Combined with deferral of residence-country tax, the ability to use excess foreign tax credits to offset any residual tax on low-taxed foreign-source income means that the functional difference between exemption and credit systems is much less than the formal difference would suggest. See, for example, Taxation of the Foreign Profits of Companies, supra note 1, at 10 (indicating that little revenue is raised by the taxation with foreign tax credit system); and Report of the President’s Advisory Panel on Federal Tax Reform, supra note 1, at 104 (noting that the deferral plus credit system raises little revenue at a high cost attributable to its complexity and differential impact on US-based multinationals). See also Harry Grubert and John Mutti, Taxing International Business Income: Dividend Exemption Versus the Current System (Washington, DC: AEI Press, 2001) (estimating a tax rate of 5 percent on all repatriated business income of US corporations for 1996).

to source the interest expense of resident corporations. But rather than sourcing interest expense for deductibility purposes, these apportionment rules create a tighter foreign tax credit limitation equal to the notional US tax on repatriated income net of expenses (including interest) allocated to the income. For US corporations in an excess credit position, a tighter limitation exposes a slice of foreign-source income to US tax on repatriation, with the result that the benefit of the current deduction of interest expense against US-source income is recaptured.

Since 1976, Canada has used an exemption system for the active business income of a foreign affiliate of a Canadian-resident corporation, provided that the affiliate is resident in a treaty country. In a consultation paper issued in the spring of 2008, the advisory panel signalled its acceptance of this system, suggesting that it will be limiting its review to reconsideration of some second-order design issues along the lines of similar initiatives already undertaken in the March 2007 budget. Although the subject of some debate, interest deductibility restrictions in the context of outbound direct investment have long been resisted by the Department of Finance.

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6 Interest expense is apportioned between domestic-source and foreign-source income generally on the basis of the ratio of gross foreign assets to domestic assets of a US-resident corporation and all affiliated resident corporations. This “water’s-edge” approach has been criticized for its failure to account for debt of non-resident corporations belonging to the same group. For taxation years beginning after December 31, 2008, a US-resident corporation of a worldwide affiliated group may make a one-time election whereby interest expense is allocated to foreign-source income only if the leverage of US members exceeds the leverage of foreign members. See the American Jobs Creation Act of 2004, Pub. L. no. 108-357, section 401(c), adding section 864(f)(1)(B) to the Internal Revenue Code of 1986, as amended (herein referred to as “the Code”). The effective date for the availability of this election has now been deferred until 2011.

7 Effective after March 19, 2007, the category of exempt income is extended to business income earned by foreign affiliates resident in non-treaty countries that have entered into a tax information exchange agreement (TIEA) with Canada, or are in the process of doing so. See resolution (31) of the Notice of Ways and Means Motion To Amend the Income Tax Act, accompanying the March 2007 budget, supra note 2. The extension recognizes that the presence of a tax treaty has become a poor proxy for a level of tax in another country that would justify exempt treatment. See, in this respect, Brian J. Arnold, “Unlinking Tax Treaties and the Foreign Affiliate Rules: A Modest Proposal” (2002) vol. 50, no. 2 Canadian Tax Journal 607-29. The budget states that the introduction of interest deductibility restrictions in the context of outbound direct investment presents the opportunity to delink exempt treatment from the presence of a treaty. It is unclear, however, why the presence of a TIEA is a better proxy. See Slaats, supra note 5, at 679. Business income earned by a foreign affiliate in a non-treaty country that has not entered into a TIEA is proposed to be treated as foreign accrual property income (FAPI) subject to accrual recognition by Canadian residents. See resolutions (32) and (33) of the Notice of Ways and Means Motion To Amend the Income Tax Act, supra.

8 Advisory Panel on Canada’s System of International Taxation, Enhancing Canada’s International Tax Advantage (Ottawa: Department of Finance, April 2008), 9-22.

9 For a review of the relevant history, see Slaats, supra note 5, at 681-86.
Without any indication that the issue was even under consideration, the tax community was surprised by the inclusion in the March 2007 budget of a proposal to deny the deduction of interest expense that can be traced to the earning of exempt foreign-source income.\(^{10}\) After some considerable lobbying pressure, the budget proposal was narrowed in May 2007 to limit the range of affected interest expense to that which can be linked with the earning of exempt income in “double-dip” and other “tax-efficient” financing structures.\(^{11}\)

To the extent that the case for restrictions on the deduction of interest expense linked with income from outbound direct investment appears to be gaining some traction,\(^ {12}\) this latest proposal, which has now been enacted as section 18.2 of the Income Tax Act,\(^ {13}\) is broadly consistent with the relatively recent adoption of deductibility restrictions in some other countries, including Australia, Denmark, Germany, Italy, and New Zealand. Importantly, however, the approach of the Department of Finance differs from legislative developments in these other countries in two principal respects. First, the approach to interest deductibility restrictions is based on an assumption that different responses are required in the context of outbound and inbound direct investment. Second, tracing is used to link foreign-source income with interest expense in the context of outbound direct investment. A comprehensive thin capitalization regime, such as that adopted in Australia and New Zealand, applies

\(^{10}\) Resolutions (24) to (29) of the Notice of Ways and Means Motion To Amend the Income Tax Act accompanying the March 2007 budget, supra note 2. The proposed restrictions were to apply generally after 2007 in respect of debt incurred after March 19, 2007.


\(^{12}\) For example, most advocates of exemption in the United States apparently assume that it would include some form of interest deductibility restriction. See, in this respect, the Report of the President’s Advisory Panel on Federal Tax Reform, supra note 1, at 241 (proposing the adoption of an exemption system for business income with a non-deductibility rule for interest expense of overleveraged US corporations). See also Michael J. Graetz and Paul W. Oosterhuis, “Structuring an Exemption System for Foreign Income of U.S. Corporations” (2001) vol. 54, no. 4 National Tax Journal 771-86, at 780-82; Harry Grubert, “Enacting Dividend Exemption and Tax Revenue” (2001) vol. 54, no. 4 National Tax Journal 811-27, at 819-22; and Edward D. Kleinbard, “Throw Territorial Taxation from the Train” (2007) vol. 114, no. 5 Tax Notes 647-64 (rejecting a territorial system, in part, because of the complexities associated with the need to allocate interest expense for deductibility purposes). The UK proposals to move to an exemption system are notable in their rejection of interest expense allocation in favour of a largely unrestricted interest expense deduction that would be subject to some targeted anti-avoidance rules. Taxation of the Foreign Profits of Companies, supra note 1, at 25-26. The UK discussion document seems to suggest, however, that a thin capitalization restriction applicable to UK multinational groups with outbound direct investment will be introduced, although it is presented as a specific anti-avoidance rule.

\(^{13}\) RSC 1985, c. 1 (5th Supp.), as amended (herein referred to as “the Act”). Unless otherwise stated, statutory references in this article are to the Act. Section 18.2 was enacted by SC 2007, c. 35, section 12(1) and applies in respect of interest and other borrowing costs paid or payable in respect of a period or periods that begin after 2011.
equally in the context of outbound and inbound direct investment, as well as equally to intragroup debt and the external debt of a multinational group. Interest expense in excess of a specified leverage ratio is denied deductibility, with an exception provided for a resident corporation with a leverage ratio consistent with a multiple of the consolidated ratio of the multinational group to which it belongs. The deductibility restrictions adopted in Denmark, Germany, and Italy follow the same broad pattern, but an interest-coverage ratio, characteristic of earnings-stripping legislation, is used to specify the permissible level of interest expense. Most importantly, these earnings-stripping regimes are comprehensive in their extension to external group debt and outbound direct investment.14

We believe that section 18.2, as well as its broader predecessor proposal in the March 2007 budget, is ill-conceived. In the context of outbound direct investment, the tracing approach, which is the foundational element of both, is untenable (and simply unnecessary) as a basis to link interest expense with foreign-source income for deductibility purposes. Tax policy making pride aside, the Department of Finance should swallow hard and adopt a thin capitalization restriction in this context. The necessary “policy making U-turn” could conceivably be undertaken as part of a package responding to the deliberations of the advisory panel. We find ourselves in agreement, therefore, with Lanthier and Mintz, who—in a recent critique of the March 2007 budget proposal and the subsequent revised proposal—have endorsed the Australian thin capitalization regime as the preferable form of interest deductibility restriction.15 “The apparent policy basis for their endorsement is the ability of such a regime to strike a decidedly imprecise balance between maintenance of the Canadian revenue base and the competitiveness of Canadian-based multinational businesses.16 We conclude that this position manages to hold up under the light of

14 These regimes also extend to the entirely domestic context in an apparent effort to comply with European Court of Justice decisions characterizing thin capitalization regimes that are limited in their application to inbound direct investment as violating the right to freedom of establishment under the Treaty on European Union (“the EC treaty”). The dismantling of thin capitalization regimes in EU countries began with the decision in Lankhorst-Horhorst GmbH v. Finanzamt Steinfurt, Case C-324/00; [2002] ECR I-11779 (characterizing the former German legislation as violating the right to freedom of establishment). Independent of the immediate motivation provided by this European Court of Justice jurisprudence, the policy rationale for the application of interest deductibility restrictions in a domestic context is quite different from the policy rationale in a cross-border context and is not discussed here. See, in this respect, Christoph Kaserer, Restricting Interest Deductions in Corporate Tax Systems: Its Impact on Investment Decisions and Capital Markets, European Private Equity and Venture Capital Association Special Paper (Brussels: EVCA, March 2008), 6-7 (identifying abusive corporate leverage as the target of earnings-stripping legislation that applies equally to arm’s-length debt in a domestic context).


16 It is notable that the Technical Committee on Business Taxation (which was chaired by Jack Mintz) supported the realization of this balance by the adoption of an interest deductibility restriction similar to that proposed by the Department of Finance in the March 2007 budget.
a close policy analysis. In particular, since competing normative frameworks and incomplete empirical evidence both conspire to make the case for deductibility restrictions anything but clean, a comprehensive thin capitalization regime is probably the best option for the short to medium term, given the continued pursuit by tax policy makers of the maximization of national welfare.

Unlike Lanthier and Mintz, we do not limit our policy inquiry to the interest expense deduction and outbound direct investment. In the context of inbound direct investment, it has been recognized for some time now that the existing thin capitalization rules in subsections 18(4) to (6) of the Act are inadequate.\textsuperscript{17} Our analysis of the interest expense deduction and inbound direct investment begins with a review of the case for a rule of non-deductibility applicable to all intragroup debt.\textsuperscript{18} In the presence of this kind of generalized rule, the application of a thin capitalization regime can be limited to the sourcing of external group debt. A comprehensive thin capitalization regime remains preferable, however, in the context of inbound direct investment, primarily because it permits a more refined identification of the tax-driven use of intragroup debt, which the empirical evidence on the substitutability of the location of external debt by multinational groups may suggest is necessary. By limiting the sourcing of external group debt, whether the borrowing is done directly or indirectly through the use of intragroup debt, a comprehensive thin capitalization regime can suitably protect source-country taxation of an element of location-specific profits, while also leaving some room for tax policy makers to adjust effective tax rates to attract inbound direct investment.

Our analysis of the case for a comprehensive thin capitalization regime in the context of both outbound and inbound direct investment builds on recent work one of us has done in this area.\textsuperscript{19} This article goes beyond that work by showing that


\textsuperscript{18} Slaats, supra note 5, at 686, suggests that a thorough study of interest deductibility restrictions in the context of outbound direct investment “would consider how such restrictions would interact with other tax measures (including inbound investment rules such as thin capitalization and withholding taxes).”

pursuit by national policy makers of the maximization of national welfare leads to the largely symmetrical application of a comprehensive thin capitalization or earnings-stripping rule. The policy case for deductibility restrictions is somewhat different, however, in these two contexts. The competing legislative alternatives to an unrestricted interest expense deduction are also different. In these two important respects, we find ourselves in disagreement with Michael Graetz, who argues in a recent essay that analyses of the interest expense deduction have been incorrectly framed as discrete inquiries in the context of either outbound or inbound direct investment.\textsuperscript{20} Graetz suggests that an integrated analysis supports the allocation of interest expense of a multinational group using an asset-based formula applied equally on a multilateral basis in the context of outbound and inbound direct investment. Although symmetry of legislative response is also the outcome of our policy analysis, we believe that a careful reading of the relevant empirical evidence supports the adoption of the modified asset apportionment characteristic of a comprehensive thin capitalization regime like that used in Australia and New Zealand. In particular, tax policy makers may defensibly deviate from a proportional allocation of interest expense based on asset value in an effort to capture positive externalities associated with outbound direct investment or to attract desirable inbound direct investment.

The discussion that follows is divided into four main sections and a brief conclusion. The first section frames the policy analysis by sketching the possible revenue and efficiency effects of an unrestricted interest expense deduction. The second section applies a consequential perspective\textsuperscript{21} to articulate the case for a thin capitalization regime in the context of outbound direct investment. The third section applies the same kind of analysis in the context of inbound direct investment. The fourth section presents some empirical evidence relevant to the specification of a safe-harbour leverage ratio. Realization of a reasonable balance between revenue concerns and a perceived need to support the competitiveness of Canadian-based multinationals, as well as attract desirable inbound direct investment, depends critically on the specification of a safe-harbour ratio.\textsuperscript{22}

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\textsuperscript{21} The same perspective is emphasized by Daniel N. Shaviro, “Does More Sophisticated Mean Better? A Critique of Alternative Approaches to Sourcing the Interest Expense of U.S. Multinationals” (2001) vol. 54, no. 3 Tax Law Review 353-420, but for the purpose of analyzing the sourcing of interest expense for foreign tax credit purposes only. Shaviro acknowledges that the analysis might be quite different for deductibility purposes, which is the singular policy issue under exemption systems.
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\textsuperscript{22} Unless otherwise indicated, we use the term “leverage ratio” to include either a debt-to-assets ratio or a debt-to-equity ratio, as well as to indicate inclusion of both intragroup debt and external group debt.
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POSSIBLE REVENUE AND EFFICIENCY EFFECTS OF AN UNRESTRICTED INTEREST EXPENSE DEDUCTION

As with any tax policy issue, the deductibility of interest expense, both generally and in the specific context of foreign direct investment, should be framed in terms of the consequential attributes of the various rules that policy makers could choose.\(^\text{23}\) That is, tax policy makers should acquire a sense of the revenue and efficiency effects of various rules for the deduction of interest expense in the context of both outbound and inbound direct investment. Because country practice has tended to permit the largely unrestricted deduction of interest expense,\(^\text{24}\) an obvious starting point for this kind of consequential analysis is the revenue and efficiency effects of an unrestricted deduction. Three behavioural margins are relevant to the analysis and are addressed by deductibility restrictions.\(^\text{25}\) One is the choice of intragroup debt or intragroup equity financing. Another is the choice of location of the external debt of a multinational group. A third is the choice of investment location. Behaviour along the first two margins can lower the effective tax rate on foreign direct investment, which can affect the choice of investment location.\(^\text{26}\)

At least as a general proposition, the revenue exposure of both residence and source countries from the substitution of intragroup debt for intragroup equity, as well as the sourcing of interest expense on external group debt, is straightforward. For source-country purposes, the deduction of interest payments permits the elimination of a portion of the source-country tax and its replacement with residence-country tax. Such substitution occurs where the debt financing of a CFC carrying on business in the source country is the lower-taxed transactional form. For residence-country purposes, the deduction of interest payments on debt used to finance outbound direct investment permits the reduction of residence-country tax on domestically sourced

\(^{23}\) For an example of this kind of analysis of interest deductibility restrictions in a domestic context, see Tim Edgar, “Policy Forum: Interest Deductibility Restrictions—Expecting Too Much from REOP?” (2004) vol. 52, no. 4 Canadian Tax Journal 1130-72.

\(^{24}\) See, for example, Organisation for Economic Co-operation and Development, Tax Effects on Foreign Direct Investment: Recent Evidence and Policy Analysis, Policy Study Series no. 17 (Paris: OECD, 2007), 107 (noting the apparent ease of avoiding a deductibility limitation that is based on tracing as the means to link borrowed funds with the earning of foreign-source income). In the context of inbound direct investment, a largely unrestricted interest expense deduction has been provided by the limitation of thin capitalization regimes to intragroup debt.

\(^{25}\) See, for example, Tax Effects on Foreign Direct Investment, ibid., at 119-48 (reviewing the effects of tax planning on the computation of “forward-looking” effective tax rates in estimating the impact of corporate tax reforms on foreign direct investment flows).

\(^{26}\) Interest deductibility restrictions implicate a fourth behavioural margin: that is, the substitution of tax-deductible payments other than interest, such as royalty payments, lease payments, and payments for goods and services generally, for otherwise restricted interest expense. This margin of behaviour has proved particularly problematic in the context of inbound direct investment and is alluded to briefly below: see infra notes 124 to 125, and the accompanying text.
income. Where the source-country rate is lower than the residence-country rate, the intragroup equity capitalization of a CFC in the source country permits the substitution of source-country tax for residence-country tax (in whole or in part), with any repatriation of income taking the form of non-deductible dividend payments.\textsuperscript{27} In a standard third-country financing structure, however, source-country taxation can continue to be eliminated by using tax-deductible intragroup debt to route taxable profits to a CFC resident in a country with a low-tax or no-tax regime. As a result of the leveraging of the intragroup equity investment in the third-country CFC, interest expense on external group debt remains deductible against income sourced in the residence country of the borrowing group member.

Assume, for example,\textsuperscript{28} that a multinational group has its headquarters in country \( R \) (the residence country). The headquarters activities are conducted through a parent corporation resident in country \( R \), which imposes corporate tax of 35 percent on income sourced within the country. Foreign-source business income earned by a CFC resident in another country is exempt from country \( R \) tax on repatriation. The multinational group has an investment opportunity in country \( S \) (the source country), which it intends to implement through a CFC resident in that country. Income earned by the CFC and sourced in country \( S \) is subject to source-country tax of 30 percent. In case 1 (figure 1), the parent corporation finances an investment in the CFC with either retained earnings or funds received from an issue of its shares. The funds are invested in the CFC in return for further shares (“intragroup equity financing”). In case 2 (figure 2), the parent corporation finances the same investment with equity but receives debt of the CFC in return for the advance of the funds (“intragroup debt financing”). In case 3 (figure 3), the parent corporation borrows funds and invests them in the CFC in return for further shares (“leveraged intragroup equity financing”). In case 4 (figure 4), the parent corporation borrows funds that are transferred to a wholly owned holding corporation in return for further shares. The holding corporation is resident in third country \( Q \), which does not impose tax on dividend or interest income. The holding corporation transfers the funds to the CFC resident in country \( S \) in return for debt (“double-dip financing”). The tax effects for 100 of income earned in country \( S \) and repatriated to the parent corporation are indicated in each of the figures.

The tax-effectiveness of a double-dip financing using a CFC resident in a third country depends on the absence or inapplicability of anti-deferral legislation, which

\textsuperscript{27} Under a dividend-exemption system, the residence-country tax is, of course, zero. Under a deferral with credit system, the residence-country tax is somewhere between zero and the rate applicable to domestic-source income.

\textsuperscript{28} Similar illustrative examples are described in Tax Effects on Foreign Direct Investment, supra note 24, at 125–33. See also Bev Dahlby, Taxation of Inbound Direct Investment: Economic Principles and Tax Policy Considerations, Advisory Panel on Canada’s System of International Taxation, Background Report (forthcoming) (computing illustrative average effective tax rates and marginal effective tax rates for the same structures in the presence of a thin capitalization regime).
Income that is deflected in the form of deductible payments to a CFC resident in a third country would generally be considered passive income subject to accrual recognition by the parent corporation in its country of residence. However, exceptions to such treatment, such as paragraph 95(2)(a) of the Act, ensure continued deferral treatment and characterization as exempt income consistent with the underlying income from which the deflected payments are made. See also, in this respect, Code section 954(c)(6) providing a similar third-country exception for the years 2006-2010. Exemption from accrual treatment is otherwise available under subpart F of the Code only if tax-deductible payments are made between CFCs resident in the same country.
entity resident in country S. The entity is a hybrid in the sense that it is treated by country S as a corporation separate from the holding corporation resident in country Q. Country S recognizes the payments from the hybrid entity as deductible interest expense on intragroup debt. Country R, however, treats the same entity as a branch of the holding corporation, ignoring the payment and treating all business income earned in country S as income of the holding corporation. Both structures maintain the same tax effects in country R of a leveraged equity financing, but provide the additional tax savings associated with an interest expense deduction in country S otherwise realized with a double-dip financing. The tax effects in each case for 100 of income earned in country S and repatriated to the parent corporation are indicated in figures 5 and 6.

To the extent that the choice of intragroup equity or intragroup debt financing, as well as the location of external group debt, is responsive to tax-rate differences, an unrestricted interest expense deduction can make payment of source-country and residence-country taxes largely elective for multinational groups. Where the statutory country R tax rate is greater than the statutory country S rate, intragroup equity may be substituted for intragroup debt, using the capital structure in figure 1 rather than the capital structure in figure 2. Where investment in country S complements investment in country R, the behavioural margin affected by the different country tax rates is the choice of intragroup equity or intragroup debt financing of the CFC. To the extent that investment in country S is a substitute for investment in country R, the lower effective tax rate associated with the leveraged intragroup equity financing in case 3, as well as the double-dip financing in case 4, may induce a greater range of substitutions in response to the lower rate. To the extent that investments in the two countries are complements, the relevant behavioural margins are the choice of borrowing by the CFC either directly from a third-party lender or indirectly through the parent corporation. Where the latter is substitutable for the former, an additional 5 percentage points of tax savings can be realized; the other

FIGURE 3  Case 3: Leveraged Intragroup Equity Financing

![Diagram of Case 3: Leveraged Intragroup Equity Financing]
The behavioural margin that then becomes relevant is the choice of intragroup equity (case 3) or intragroup debt financing of the CFC (case 4).

When statutory tax rates are changed such that the source-country rate exceeds the residence-country rate, the associated incentives along the relevant behavioural margins are also changed. If investment in country R and investment in country S are substitutable, the statutory country R tax rate may induce investment there to avoid the higher country S rate. If, instead, investment in country S complements investment in country R, the relevant behavioural margin affected by the different statutory tax rates will be the choice of intragroup debt or intragroup equity financing of the CFC. To the extent that intragroup debt is substitutable for intragroup equity, the higher country S tax rate will induce such substitution, and the capital structure in figure 2 will be used rather than the capital structure in figure 1. However, the lower effective tax rate associated with a double-dip financing in case 4, as well as a leveraged hybrid instrument in case 5 or a leveraged hybrid entity in case 6, may induce the substitution of investment in country S for investment in country R, even though the statutory tax rate in the latter is less than the former. To the extent that investments in the two countries are complements, the relevant behavioural margins will again be the choice of borrowing by the CFC directly from a third-party lender or indirectly through the parent corporation. Where the latter is substitutable for the former, the leveraged equity financing in case 3 will realize additional tax savings (country S tax minus country R tax saving versus nil country S tax plus country R tax). Any of the three structures—double-dip financing, the leveraged hybrid instrument structure, or the leveraged hybrid entity structure—will preserve the country R tax saving associated with the offset of the interest expense against income.
sourced in country R, while eliminating the country S tax. With the double-dip financing or the hybrid structure, the relevant behavioural margin will be the choice of financing the CFC with intragroup equity (case 3) or intragroup debt (case 4). A hybrid instrument (case 5) or a hybrid entity (case 6) serves the same purpose as intragroup debt financing of the CFC.

Although the incentives presented by differences in statutory tax rates are relatively easy to sketch, along with the direction of potential revenue loss, the precise dimensions of the revenue and efficiency effects of substitutions along the relevant
behavioural margins remain empirically unknown. In fact, the interactions (and, by derivation, the dimensions) of the behavioural margins implicated by an unrestricted interest expense deduction are complex and have not been the subject of extensive theoretical or empirical work. It is now recognized that the modelling of average and marginal effective tax rates on foreign direct investment must begin to account for more sophisticated financing structures using the interest deduction and/or hybrid instruments and hybrid entities. Recent empirical work by Altshuler and Grubert, using US data, indicates growing use of such structures, but it is uncertain to what

30 See Tax Effects on Foreign Direct Investment, supra note 24. The March 2007 budget, supra note 2, estimated that the proposed tracing-based interest deductibility restriction would generate $10 million in federal revenue in 2007-8, increasing to $40 million in 2009-10. As suggested by Slaats, supra note 5, at 681, the negative reaction provoked by the budget proposals tends to support the view that these estimates were low.

31 An important exception is Shaviro, supra note 21 (suggesting some of the interactions between the choice of investment location and the sourcing of interest expense for US foreign tax credit purposes).

extent the location of foreign direct investment responds to the associated reductions in effective tax rates.\(^\text{33}\)

Taking each behavioural margin separately, there is some evidence suggesting a high degree of tax-driven substitution of intragroup debt and intragroup equity, as well as the choice of location of the external debt of a multinational group.\(^\text{34}\) There is also substantial empirical literature confirming that there is a high degree of substitutability of interest, dividends, and royalty payments as repatriation strategies in the context of foreign direct investment.\(^\text{35}\) This evidence confirms the intuition that

\(\text{\textsuperscript{33} Tax Effects on Foreign Direct Investment, supra note 24, at 144-46. See also Earnings Stripping, Transfer Pricing and U.S. Income Tax Treaties, supra note 1, at 24 (noting that “existing empirical work does not address the question of whether income shifting raises or lowers the level of investment in high-tax countries”). For an early, and brief, exchange on this issue, see Stuart E. Leblang, “International Double Nontaxation” (1998) vol. 80, no. 2 Tax Notes 255-56 (suggesting that the double non-taxation realized through the use of hybrid entities and/or instruments induces a substitution of outbound direct investment for domestic investment); and Julie H. Collins and Douglas A. Shackelford, “Taxes and Cross-Border Investments: The Empirical Evidence” (1999) vol. 82, no. 1 Tax Notes 131-34 (arguing that the empirical evidence does not support Leblang’s suggestion). See also Jack Mintz, “Conduit Entities: Implications of Indirect Tax-Efficient Financing Structures for Real Investment” (2004) vol. 11, no. 4 International Tax and Public Finance 419-34 (using a simple two-country model to compare the cost of capital of a direct financing structure and an indirect financing structure).}


\(\text{\textsuperscript{35} See, for example, Rosanne Altshuler and Harry Grubert, “Repatriation Taxes, Repatriation Strategies and Multinational Financial Policy” (2002) vol. 87, no. 1 Journal of Public Economics 73-107 (finding that the leverage of CFCs is a highly correlated negative function of source-country tax rates). See also Rosanne Altshuler and Harry Grubert, “Where Will They Go If}
intragroup debt and intragroup equity financing are largely substitutable, since the controlling status of the investor (and the controlled status of the issuer) means that the private-law rights and obligations, as well as the different financial accounting treatments, associated with the two financing forms are meaningless constraints. On the other hand, there is much less evidence bearing directly on the ability of a multinational group to locate its external debt. The evidence that does exist again confirms the intuition that, to a large extent, realization of the most tax-effective sourcing of interest payments to third-party lenders is unconstrained by non-tax factors, although non-tax differences between local and non-local capital markets continue to persist.\textsuperscript{36} In short, the sourcing of the external debt of a multinational

\textsuperscript{36} There is a considerable body of literature emphasizing the effect on the cost of capital of differences in the non-tax attributes of local capital markets. These differences can constrain the ability of a multinational group to borrow directly in the market in which a group member operates. See, for example, United States, Department of the Treasury, \textit{Approaches To Improve the Competitiveness of the U.S. Business Income Tax System for the 21st Century} (Washington, DC: Department of the Treasury, Office of Tax Policy, December 2007), 56 (noting that capital import neutrality and capital ownership neutrality, as welfare benchmarks, assume that capital is supplied at a fixed rate by an integrated world market, although there is very little empirical evidence supporting this assumption). The most comprehensive empirical study of the substitution of related-party debt for arm’s-length debt by multinational groups in the face of differences in the non-tax attributes of local capital markets is Mihir A. Desai, Fritz Foley, and James R. Hines Jr., \textit{“A Multinational Perspective on Capital Structure Choice and Internal Capital Markets”} (2004) vol. 59, no. 6 \textit{The Journal of Finance} 2451-87 (finding for a panel of US
group appears to be unconstrained, to a considerable extent, by non-tax factors, although probably not to the same extent as the choice of intragroup debt or intragroup equity finance.\(^{37}\)

The available empirical evidence arguably suggests, therefore, that the substitution of intragroup debt and intragroup equity financing, as well as the choice of location of the external debt of a multinational group, occurs predominantly in instances of perfect (or near-perfect) substitutability, with no or low efficiency losses attributable directly to the substitution itself. This characterization holds most clearly if the factors affecting the sourcing of external group debt are non-linear, with the sourcing choice subject to a “cliff effect.” That is, the sourcing choice is largely unconstrained by non-tax factors, but once there are differences in non-tax attributes in the choice of location, those constraints are binding, and the substitution does not occur. In these circumstances, both of the financing choices implicated by an unrestricted interest expense deduction in the context of foreign direct investment give rise primarily to revenue effects. Efficiency effects arise indirectly as the location of investment responds to differences in effective tax rates produced by an unrestricted interest expense deduction.

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multinationals that 10 percent higher tax rates are associated with 2.8 percent greater affiliate debt as a fraction of assets; the tax elasticity of intragroup debt (0.35) is greater than that of external debt (0.19); and 1 percent higher interest rates in local capital markets are associated with a decline in direct borrowing by affiliates from arm’s-length lenders of 1.3 percent of assets, while borrowing from parent corporations increased by 0.8 percent of assets). See also Theiss Buettner, Michael Overesch, Ulrich Schreiber, and Georg Wamser, *The Impact of Thin Capitalization Rules on Multinationals’ Financing and Investment Decisions*, Deutsche Bundesbank Discussion Paper no. 03/2008 (Frankfurt: Deutsche Bundesbank, 2008) (obtaining similar results for a panel of German multinationals); Huizinga et al., supra note 34 (finding a tax elasticity of related-party debt of 0.27 for a sample of European corporations); Ramb and Weichenrieder, supra note 34 (finding for a panel of foreign-controlled German subsidiaries that taxation does not fully explain the level of intragroup debt); and Jack Mintz and Alfons J. Weichenrieder, *Taxation and the Financial Structure of German Outbound FDI*, CESifo Working Paper Series no. 1612 (Munich: Center for Economic Studies and Ifo Institute for Economic Research, December 2005) (finding that the level of debt, both intragroup and external, of foreign subsidiaries of German parent corporations was unaffected by the use of third-country conduit-financing structures, but finding a strong relationship between the substitution of external debt for intragroup debt in the subsidiaries where such structures were unavailable).

\(^{37}\) But see Theiss Buettner, Michael Overesch, Ulrich Schreiber, and Georg Wamser, *Taxation and Capital Structure Choice: Evidence from a Panel of German Multinationals*, ZEW Discussion Paper no. 06-067 (Mannheim: Zentrum für Europäische Wirtschaftsforschung, 2006) (finding comparable tax elasticities of external and intragroup debt for a sample of German multinationals). The use of related-party guarantees or other security provides a broad range of substitutability of related-party and arm’s-length debt. See Buettner et al., ibid. (finding a mean ratio of intragroup to external debt of 0.68 for a panel of German multinationals); and Desai et al., supra note 36 (finding for a panel of US multinationals that the majority of debt is arm’s-length debt).
In general, efficiency effects attributable to distortion of the choice of investment location depend on

- the responsiveness of this choice to differences in effective tax rates that are attributable, in part, to the sourcing of deductible interest expense; and
- the nature of particular locations as perfect or imperfect substitutes.

There is now a substantial body of empirical evidence regarding the responsiveness to taxation of the choice of location of a range of foreign direct investment. There is also a growing body of empirical evidence supporting a characterization of outbound direct investment as a complement to domestic investment, although it remains difficult to disentangle the effects of general economic conditions on the levels of outbound direct investment and domestic investment and, thereby, isolate the relationship between the two. These two separate bodies of empirical evidence nonetheless support the general proposition that there is a range of outbound direct

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38 This literature is comprehensively reviewed in Tax Effects on Foreign Direct Investment, supra note 24, at 46-66. The review reports the findings of a META analysis undertaken by de Mooij and Edverveen of 31 empirical studies of the effect of tax rates on the level of foreign direct investment. See Ruud A. de Mooij, Explaining the Variation in Empirical Estimates of Tax Elasticities of Foreign Direct Investment, Tinbergen Institute Discussion Paper 05-108/3 (Amsterdam: Tinbergen Institute, 2005) (finding a mean semi-elasticity value of −3.72, indicating that a 1 percent decrease in the source-country tax rate results in a 3.72 percent increase in the level of inbound direct investment). See also Ruud A. de Mooij and Sjef Edverveen, “Taxation and Foreign Direct Investment: A Synthesis of Empirical Research” (2003) vol. 10, no. 6 International Tax and Public Finance 673-93 (finding, from an analysis of 25 studies, a median elasticity of foreign direct investment to the source-country tax rate of −3.3). See also Dana Hajkova, Giuseppe Nicoletti, Laura Vartia, and Kwang-Yeol Yoo, Taxation, Business Environment and FDI Location in OECD Countries, OECD Economic Studies Paper (Paris: OECD, 2006).

39 For a brief review of this literature, see James R. Hines Jr., “Reconsidering the Taxation of Foreign Income” (University of Michigan, Department of Economics, November 2007), 19-20. See also Mihir A. Desai, C. Fritz Foley, and James R. Hines Jr., Foreign Direct Investment and Domestic Economic Activity, NBER Working Paper no. 11717 (Cambridge, MA: National Bureau of Economic Research, October 2005) (using foreign gross domestic product growth rates, interacted with lagged firm-specific geographic distributions of foreign investments, to suggest that 10 percent greater foreign capital investment is associated with 2.2 percent greater domestic investment, while 10 percent greater foreign employee compensation is associated with 4 percent greater domestic employee compensation).

40 Hines, supra note 39, at 20. See also Earnings Stripping, Transfer Pricing and U.S. Income Tax Treaties, supra note 1, at 25 (noting that domestic employment levels depend more on domestic factors, such as labour and product-market flexibility and work-force composition, than the level of inbound direct investment, since any increase/decrease in the latter tends to be offset with a decrease/increase in domestic investment); and Tax Effects on Foreign Direct Investment, supra note 24, at 68 (noting that “[i]f FDI crowds out domestic investment through a process of product competition or competition for scarce resources, there may be little positive effect on the domestic aggregate capital stock and employment, at least in the short-run”).
investment that responds to differences in taxation in the choice of location among source countries other than the home jurisdiction of the capital exporter.

The somewhat obvious point emphasized here is that an unrestricted interest expense deduction lowers the effective tax rate on both inbound and outbound direct investment, with possible effects on the location of investment. Indeed, in a non-cooperative setting in which countries behave strategically, tax competition for mobile investment is not limited to statutory rate reductions, but commonly takes the form of effective rate reductions through looseness in deductibility rules such as those for interest expense. The result may be both revenue loss and efficiency effects where the chosen location is suboptimal in terms of its non-tax attributes (that is, it is an imperfect substitute for an otherwise preferred higher-tax location). However, the theoretical, as well as the empirical, literature is only beginning to attempt to account for tax competition in this particular form, and there is, as yet, insufficient empirical evidence bearing directly on the dimensions of any revenue and efficiency effects attributable to changes in effective tax rates realized through an unrestricted interest expense deduction. Tax policy makers are left with only two broad positions in which they can have some empirical confidence:

- The choice of intragroup debt or intragroup equity financing, as well as the choice of location of the external debt of a multinational group, is highly responsive to differences in tax rates.
- The choice of investment location is responsive to differences in effective tax rates for a range of foreign direct investment.

It is suggested in the next two parts that, in a non-cooperative setting with imperfectly mobile capital, the direction of the substitution of the location of direct investment is an unacknowledged, but significant, factor in the choice of interest deductibility restrictions. In fact, the perceived direction of the substitution shapes the design features of any such restrictions intended to limit the revenue and efficiency effects of an unrestricted interest expense deduction. From the perspective of capital-exporting countries, the relevant empirical issue is whether outbound direct investment complements or substitutes for domestic investment. A related question is whether national tax policy makers adopt a world welfare or national welfare benchmark in shaping their policy choices. From the perspective of capital-importing countries, the principal empirical issue is the characterization of inbound

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41 See, for example, Altshuler and Grubert, “Governments and Multinational Corporations,” supra note 32; and Qing Hong and Michael Smart, In Praise of Tax Havens and Foreign Direct Investment, CESifo Working Paper Series no. 1942 (Munich: Center for Economic Studies and Ifo Institute for Economic Research, March 2007) (allowance for some income shifting using related-party debt can permit an increase in statutory tax rates and a redistribution of the tax burden to domestic firms, with some restrictions being socially optimal in the presence of deadweight costs associated with tax planning).

42 A sense of the dimensions of these effects is suggested by a growing body of empirical literature using German data. See some of the sources cited in notes 34, 36, and 37, supra.
direct investment as relatively immobile, with maximization of national welfare serving as the benchmark shaping policy choices. An important secondary empirical issue is the extent to which the location of the external debt of a multinational group is responsive to taxation and, in particular, can be substituted for intragroup debt.

**OUTBOUND DIRECT INVESTMENT: SOURCING INTEREST EXPENSE FOR DEDUCTIBILITY PURPOSES**

A legislative regime that sourced interest expense for the purpose of imposing deductibility restrictions in the context of outbound direct investment would deny the deduction where the expense could be linked to the earning of exempt foreign-source income. Under a system of taxation with deferral and a foreign tax credit, such expense would be deductible against foreign-source income only when taxable on repatriation as a dividend. This expression of the consequences of a linkage between interest expense and foreign-source income is straightforward and intuitively appealing. Disagreement surrounds the policy case for deductibility restrictions. Moreover, even where the case for restrictions is accepted, difficult design details are encountered in the choice of sourcing rule used to link interest expense and the earning of foreign-source income in the context of outbound direct investment.

By linking interest expense with a geographic location, interest expense sourcing rules are no different than sourcing rules for revenue and expenses generally. In the context of outbound direct investment, there are three principal rule choices for interest expense:

1. tracing,
2. formulary apportionment, or
3. a thin capitalization regime.43

This part highlights three points regarding these sourcing alternatives. First, as emphasized by Shaviro,44 there is no prescriptively “correct” sourcing rule for interest expense in the context of either outbound or inbound direct investment. For the same reasons as sourcing rules generally, all forms of sourcing rules for interest expense have a normative arbitrariness about them. Second, the desirability of particular sourcing rules should be assessed in terms of their “administrability,” as well as possible revenue and efficiency effects. Third, a thin capitalization regime, applied to the external debt of a multinational group as a sourcing limitation, may be the “least-worst” of an admittedly imperfect set of alternatives to an unrestricted interest

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43 For the purposes of the policy case for deductibility restrictions, as well as the choice of sourcing rule, earnings-stripping legislation is treated interchangeably with thin capitalization legislation. The second-order design features that might suggest one or the other are reviewed briefly below under the heading “Specifying a Safe-Harbour Leverage Ratio.”

44 Shaviro, supra note 21.
expense deduction. More particularly, this kind of deductibility restriction may best reflect the mixed state of the relevant empirical evidence, which is bound up in disagreement over an appropriate welfare benchmark. Depending on the specific design details, such a regime is also likely to be more robust against taxpayer manipulation than tracing; yet it would avoid some of the complexity of formulary apportionment and may, as a result, be more administrable than this particular sourcing alternative. A thin capitalization regime is also broadly consistent with existing transfer-pricing practices; thus, its unilateral adoption is feasible in a non-cooperative environment in which national policy makers pursue the maximization of national welfare.

**National Welfare, Ownership Neutrality, and the Case for Interest Deductibility Restrictions**

Much of the international tax debate has revolved around “capital-export neutrality” (CEN) and “capital-import neutrality” (CIN) as guiding principles.\(^{45}\) CEN focuses on the maximization of world welfare (that is, the sum of all taxes paid and all after-tax returns). In a cooperative setting, all countries agree to tax the foreign-source income of their residents on an accrual basis, with a refundable credit for any source-country taxes if those taxes exceed the residence-country tax on the income. Residents thus face the same after-tax return on domestic and foreign investments, which should ensure that pre-tax returns available in different locations are undisturbed. In a non-cooperative setting, the same residence-based approach arises as the standard policy prescription, but a much different recognition of foreign taxes is dictated by the attempt to maximize national welfare (that is, the sum of domestic taxes and the after-tax returns of nationals). Pursuit of this goal requires the attempt by a single capital-exporting country to equate the pre-tax returns from domestic investment with the returns on foreign investment, after any source-country tax, by taxing the pre-tax foreign-source income of residents on an accrual basis and providing a deduction from such income for any source-country taxes.\(^{46}\)

In contrast with CEN, CIN is concerned with the maintenance of “intertemporal exchange efficiency,”\(^{47}\) whereby the savings decision (that is, the choice between current and deferred consumption) is not distorted in a cross-border context. In a cooperative setting, the standard policy prescription for the realization of intertemporal exchange

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efficiency is an exclusively source-based jurisdiction to tax, with investors in a particular location taxed at the same rate, which equates after-tax returns to savings invested in that location. In a non-cooperative setting, this same source-based approach arises as the standard policy prescription dictated by the attempt to maximize national welfare, which is seen to require exemption by a single capital-exporting country in order to capture perceived spillover benefits associated with the location of headquarters operations. In this respect, some analysts draw on the concept of CIN, not as a criterion focused on intertemporal exchange efficiency, but as tantamount to a requirement of equality of after-tax returns to ensure the competitiveness of multinational firms headquartered across different countries.

In a recent series of important papers, Desai and Hines have repackaged this “competitiveness” argument in the form of “ownership neutrality” as a welfare benchmark. Following some earlier work in the international tax policy literature, they emphasize the function of foreign direct investment as the most effective way to exploit proprietary assets across markets and ask the question: Who will own the assets invested in a given location with a given stock of savings? In a cooperative environment in which maximization of world welfare is the goal, “capital ownership neutrality” (CON) could be realized if all countries were to adopt an exclusively source-based system of taxation of income from outbound direct investment. CON

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48 Altshuler, ibid., at 1580-81. Altshuler observes that, in a simple two-country model with the savings decision responsive to after-tax rates of return, investors resident in the country with the higher tax rate will save less than investors resident in the country with the lower tax rate. World welfare could be increased if returns from savings were transferred from residents of the low-tax country to residents of the high-tax country.

49 For example, Frisch and Hufbauer argue that increased capital mobility means that portfolio investment flows determine the allocation of savings worldwide, with direct investment no longer serving this allocative function. In an effort to capture spillover benefits associated with outbound direct investment, tax policy makers should adopt an exclusively source-based system to ensure the “competitiveness” of multinational firms that are headquartered in a country and are therefore seen as “national.” See Daniel J. Frisch, “The Economics of International Tax Policy: Some Old and New Approaches” (1990) vol. 47, no. 5 Tax Notes 581-91; and Gary Clyde Hufbauer, U.S. Taxation of International Income: A Blueprint for Reform (Washington, DC: Institute for International Economics, 1992). See also Donald J.S. Brean, “Taxation and Canadian Direct Investment Abroad,” in Steven Globerman, ed., Canadian-Based Multinationals (Calgary: University of Calgary Press, 1994), 215-39.


51 See, for example, J. Clifton Fleming Jr. and Robert J. Peroni, “Exploring the Contours of a Proposed U.S. Exemption (Territorial System) Tax System” (2005) vol. 109, no. 12 Tax Notes 1557-77 (arguing that the concept of ownership neutrality amounts to nothing more than a repackaging of the arguments for an exemption system associated with CIN).

52 See Frisch, supra note 49; and Hufbauer, ibid.
could also be realized if, consistent with CEN, all residence countries required the accrual taxation of income of resident investors from outbound direct investment while providing credit for source-country taxes. Provided that differences in residence-country tax rates were in fixed proportion as among investors, every investor would have an incentive to maximize pre-tax returns, and assets would be owned by multinational firms who could use them most productively. In a non-cooperative environment in which national policy makers attempt to maximize national welfare, “national ownership neutrality” (NON) is the relevant welfare benchmark and is also said to support an exclusively source-based system of taxation of income from foreign direct investment.

As welfare benchmarks, CEN and CIN have proved to be contentious, primarily because of problematic assumptions about the responsiveness of behaviour to differences in international tax systems. It is well recognized, for example, that an accrual system with a foreign tax deduction will serve to reduce the welfare of nationals of a capital-exporting country if outbound direct investment complements domestic investment.\(^{53}\) It is also well recognized that in a world of different country tax rates applied to investment and savings, CEN and CIN cannot be realized simultaneously, unless demand for capital (investment location) or the supply of capital (savings) is completely inelastic.\(^{54}\) When these extreme assumptions are relaxed, the alternatives for tax policy makers are seen to be an international tax regime that is

- source-based and thereby distorts the allocation of investment across countries; or
- residence-based and thereby distorts the choice between current and deferred consumption.\(^{55}\)

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53 The reduction occurs because complementary investment is forgone as a result of the comparatively higher residence-country effective tax rate. Moreover, it is recognized that reciprocal responses by other countries further reduce the level of foreign direct investment and its associated welfare gains. For a comprehensive statement of this position, see Michael J. Graetz, “Taxing International Income: Inadequate Principles, Outdated Concepts, and Unsatisfactory Policies” (2001) vol. 54, no. 3 Tax Law Review 261-336, at 277-94.

54 See, for example, Graetz, ibid., at 272.

55 The decision variables in the choice between these alternatives are formally modelled by Thomas Horst, “A Note on the Optimal Taxation of International Investment Income” (1980) vol. 94, no. 4 The Quarterly Journal of Economics 793-98. Horst builds on the earlier work of Musgrave but defines an optimal international tax regime as one that maintains the social opportunity cost of capital rather than maximizes national income as the policy goal. He argues that such a regime should ensure the equality of the weighted average of pre-tax and after-tax returns to capital, with the weighting being determined by the elasticity of the supply of capital. An exclusively residence-based system is optimal only if the demand for capital is elastic and the supply of capital is inelastic. In that case, such a system maintains equality of pre-tax returns across investments in different countries without distorting the level of worldwide savings. An exclusively source-based system is optimal if the demand for capital is inelastic and the supply of capital is elastic. In that case, such a system increases the level of worldwide savings without disturbing the location of investment.
As the newest welfare benchmark articulated in the literature, CON suffers from many of the same empirical ambiguities as CEN and CIN.\textsuperscript{56} In fact, ownership neutrality holds as an exclusive welfare benchmark (whether focused on world welfare or national welfare) only if savings pooled with a multinational firm,\textsuperscript{57} as well as the location of investment, are held constant.\textsuperscript{58} Similarly, as a national welfare benchmark, NON is based on the empirical premise that outbound direct investment complements domestic investment and does not substitute for it.

Given the mixed state of the relevant empirical evidence, the compromise position for outbound direct investment has traditionally been the deferral of the residence-country tax until repatriation of foreign-source income. As Altshuler has noted,\textsuperscript{59} provision of deferral with credit results in a tax rate on foreign-source income that is somewhere between zero and the rate applied to domestic income in the residence country. She suggests that this compromise rate can be justified on the basis that the optimal tax rate on foreign-source income is somewhere within this band, depending on the relative elasticities of the demand for and the supply of capital.\textsuperscript{60} By comparison, an exclusively source-based system for business income has tended to be seen as the self-interested position of multinationals. As noted already,\textsuperscript{61} however, the empirical literature suggests that foreign direct investment is becoming increasingly mobile as non-tax barriers to the movement of capital break down. Moreover, as also noted,\textsuperscript{62} there is a growing body of evidence that, in a world of two-way capital flows, outbound direct investment may largely complement, rather than substitute for, domestic investment.\textsuperscript{63} The combination of these two strands of the empirical literature makes exemption an attractive proposition for national tax policy makers intent on maximizing national welfare. As a welfare benchmark, the principal significance of NON may be an intended enhancement of the policy credibility of an exemption system.


\textsuperscript{57} See, for example, Approaches To Improve the Competitiveness of the U.S. Business Income Tax System, supra note 36, at 55-56.

\textsuperscript{58} Desai and Hines, supra note 50, acknowledge that an exclusively source-based system intended to realize CON will distort the choice of investment location if source-country tax rates differ, and there is a range of foreign direct investment that is mobile and thus responsive to these rate differences. In this case, some countries might move to a system of residence-based taxation with a credit for foreign taxes in an effort to reduce the distortion, but any reduction would be purchased at the cost of some distortion of the pattern of asset ownership if some countries continued to tax on an exclusively source basis. See also Kane, supra note 56 (emphasizing the complicated interaction of investment location and ownership distortions).

\textsuperscript{59} Altshuler, supra note 47, at 1582.

\textsuperscript{60} Ibid.

\textsuperscript{61} Supra note 38 and the accompanying text.

\textsuperscript{62} Supra notes 38 to 39 and the accompanying text.

\textsuperscript{63} See the sources cited, supra note 39.
What are the implications, if any, of these alternative welfare benchmarks (and the associated treatment of income from outbound direct investment) for the sourcing of interest expense? To the extent that such investment substitutes for, rather than complements, domestic investment, some form of sourcing rule for the purpose of restricting the deduction of interest expense against domestic-source income is probably required.\textsuperscript{64} More particularly, where tax policy makers have chosen deferral with credit, interest deductibility restrictions can be used as a means to ensure that the tax rate on foreign-source income does, in fact, fall somewhere between zero and the rate on domestic income in the residence country. Depending on the deferral period and the extent of averaging of taxes for credit purposes, an unrestricted deduction can result in a negative tax rate on income from outbound direct investment. A negative residence-country rate is, of course, the dominant result under the combination of an exemption system and an unrestricted interest expense deduction. This negative rate effectively lowers the source-country rate and is the equivalent of a revenue transfer from a residence country to a source country,\textsuperscript{65} which can induce a broader range of substitutions of foreign for domestic investment, with welfare losses. It is not at all clear, however, what form of deductibility restriction should be chosen to realize some perceived optimal rate. At most, all that can be concluded with any confidence is that some form of restriction may be chosen subject to an unavoidable tradeoff between the attributes of simplicity and robustness against taxpayer manipulation.

The case for some form of deductibility restriction is even less clear where outbound direct investment complements domestic investment. An unrestricted interest expense deduction lowers the effective tax rate on outbound direct investment structured as a leveraged financing of a CFC. As with the case for adoption of exemption, this lowering of the effective tax rate is rationalized by national tax policy makers as an instrument to maintain the competitiveness of resident parent corporations and thereby capture perceived benefits associated with headquarters operations in the country.\textsuperscript{66} It is unclear, however, whether an unrestricted interest expense deduction enhances national welfare in the context of outbound direct investment. Pursuit of national welfare may suggest an unrestricted deduction only if policy makers can be confident that forgone revenue is less than the increase in national income, including increases from spillover benefits associated with additional outbound direct investment.\textsuperscript{67}

\textsuperscript{64} See, for example, Report of the President's Advisory Panel on Federal Tax Reform, supra note 1, at 134 (defending interest deductibility restrictions as necessary to avoid the subsidization of outbound direct investment).

\textsuperscript{65} Graetz, supra note 20.

\textsuperscript{66} See, for example, Brean, supra note 49; and Hufbauer, ibid.

\textsuperscript{67} See, in this respect, Hines, supra note 39, at 22 (suggesting that an unrestricted interest expense deduction does not simply generate uncompensated deductions, but may trigger additional domestic investment and a larger domestic tax base).
Hines, extending the earlier work of Hufbauer, argues in a recent paper that pursuit of either CON or NON dictates rejection of rules that would allocate any portion of overhead expenses of a multinational group, including interest expense, to the earning of foreign-source income.\textsuperscript{68} Hines's argument is premised on an acceptance of the integrity of the private-law transactions that otherwise source overhead expenses. In effect, he asserts that no portion of overhead expenses, which can otherwise be characterized as incurred domestically, should be allocated against foreign-source income. With interest expense, Hines apparently assumes that the place of residence of a borrower determines the place of incurrence and should be determinative of the sourcing of the expense. On this assumption, allocating a portion of otherwise deductible interest expense against foreign-source income and denying its deduction in the country of residence of a borrowing corporation results in an inefficient increase in the effective tax rate on outbound direct investment. The efficiency effects are those associated with the resulting distortion of the pattern of ownership of assets in the source country. An unrestricted interest expense deduction, sourced on the basis of the place of residence of a borrowing corporation, is seen to equate marginal after-tax returns from investment at home and abroad. Because an interest deduction would be permitted in the latter instance, consistent treatment of the former is required to maintain equivalence of after-tax returns.

Notably, Hines acknowledges that transfer-pricing rules are generally required to constrain tax-driven allocations of both revenue and expenses. He also acknowledges that the source of marginal funds for tax purposes has policy relevance in a purely domestic context, such that a rule of non-deductibility would be applied at the margin to equate returns on debt-financed and equity-financed investment. It is simply difficult to identify the source of marginal funds with any confidence for the purposes of a non-deductibility rule. But as Hines emphasizes, his extreme policy prescription of a sourcing of interest expense on the basis of an unqualified acceptance of the integrity of private-law transactions holds only if the following two extreme conditions, noted above, are satisfied:

- outbound direct investment complements domestic investment; and
- revenue loss from the sourcing of interest expense domestically is fully compensated for by an increase in the tax base from an increase in domestic investment.

Where these two conditions do not hold, maximization of national welfare from outbound direct investment requires limitations on the sourcing of interest expense, which otherwise results from an unqualified acceptance of the integrity of private-law transactions. The relevant empirical evidence is such that policy makers can

\textsuperscript{68} Hines, ibid., at 20-24; and Hufbauer, supra note 49, at 136-38 (suggesting that all headquarters expense attributable to headquarters activity in the United States should be deductible for US income tax purposes).
probably have some confidence that there is an element of uncompensated deductions that should be the target of a rule of non-deductibility. The difficult design issue is identifying tax-driven sourcing results following from either the substitution of intragroup debt for intragroup equity or the location of the external debt of a multinational group. Rough judgment must also be exercised as to the extent that even this range of tax-driven sourcing results might be acceptable because of offsetting spillover benefits from additional outbound direct investment. The empirical evidence is not even remotely complete enough, however, to support the kind of precise calibration that is required to confidently resolve this issue. Given this informational constraint, it seems all too obvious that an analogue to the arm’s-length overlay in a transfer-pricing context is required to constrain the tax-driven sourcing of interest expense. Indeed, there is nothing about the sourcing of interest expense, as well as other overhead expenses generally, to suggest exemption from the arm’s-length overlay applied to the sourcing of revenue and expenses generally of a multinational group.69

The next section argues that a thin capitalization regime emerges, in this state of empirical ignorance, as the preferable expression of a necessary overlay on the sourcing of interest expense in the context of outbound direct investment. The lack of empirical evidence is especially significant when national policy makers see themselves as seeking to maximize national welfare. More particularly, the principal appeal of a thin capitalization regime, in the context of outbound direct investment, probably lies in its ability to combine the robustness of formulary apportionment as a bulwark against revenue erosion with the simplicity gains otherwise associated with a respect for the integrity of private-law transactions as determinative of the sourcing of interest expense for deductibility purposes.70 Where policy makers perceive that the revenue loss associated with an interest expense deduction against domestic-source income is offset by a compensating increase in domestic investment, a thin capitalization regime can be adjusted to permit an additional allocation of such expense. In a non-cooperative setting in which countries behave strategically, adoption of this particular deductibility restriction can also signal country acceptance of a

69 But see Hufbauer, supra note 49, at 136-46; and Graetz, supra note 20 (limiting allocation to interest expense).

70 The contrast with an exclusive use of asset apportionment is evident perhaps in the fact that a thin capitalization regime modelled on the Australian or New Zealand legislation requires application on a consolidated group basis only in the specification of the conditions of application. In particular, the shareholdings of all affiliated resident members of a worldwide corporate group must be taken into account in determining the presence of outbound direct investment. However, for the purpose of determining the amount of excessive debt that is otherwise sourced domestically, the relevant leverage ratios can be applied to all domestic members of the same group on a separate-entity basis. Sourcing of interest expense using asset apportionment requires its application on a consolidated group basis. Tracing must be applied on the same basis or, alternatively, it must be extended to borrowings that can be traced through another domestic group member to the earning of foreign-source income.
degree of cooperation, with the associated benefits,\(^71\) while still leaving considerable room to pursue maximization of national welfare through an unrestricted interest expense deduction.

**Tracing, Formulary Apportionment, and the Normative Arbitrariness of Sourcing Rules**

By allocating revenue and expense between residence and source countries, sourcing rules perform much of the “dirty work” of operationalizing an accepted division of the jurisdiction to tax.\(^72\) In performing this function, there should ideally be some correspondence between the rationale for assertion of jurisdiction to tax and the details of sourcing rules.\(^73\) But as many commentators have emphasized,\(^74\) the notion of a geographic source of revenue and expense lacks any well-defined economic content. This feature is common to any attempt to allocate net income as a tax base

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\(^72\) This accepted division allocates the principal jurisdictional right to tax portfolio income to the country in which an investor is resident. Countries in which the income is considered to arise are granted a limited ability to impose gross withholding taxes on the income streams, and the country of residence is required to credit such source-country taxes. In contrast to the treatment of portfolio income, the principal right to tax income from direct investment is allocated to source countries, while the country of residence of the investor is required to provide recognition of source-country taxation, either by exempting the income from residence-country tax or by crediting source-country tax. This division of the jurisdiction to tax international income has been referred to as the “international tax compromise.” The early development of this compromise is described in Michael J. Graetz and Michael M. O’Hear, “The ‘Original Intent’ of U.S. International Taxation” (1997) vol. 46, no. 5 *Duke Law Journal* 1021-1109.

\(^73\) Two specific concepts of “economic allegiance” were developed in the 1923 report of a committee of four economists submitted to the League of Nations as the basis for jurisdiction to tax: (1) where income is derived (the source jurisdiction); and (2) where income is consumed or saved (the residence jurisdiction). See League of Nations, Economic and Financial Commission, Report on Double Taxation Submitted to the Financial Committee by Professors Bruins, Einaudi, Seligman, and Sir Josiah Stamp, League of Nations document no. E.F.S.73.E.19 (Geneva: League of Nations, 1923) (source: United States, Joint Committee on Internal Revenue Taxation, *Legislative History of United States Tax Conventions*, vol. 4 (Washington, DC: US Government Printing Office, 1962), 4003-55). Although it is the focus of some contentiousness in the literature, the policy basis for these two concepts of economic allegiance and the associated jurisdiction to tax is conventionally described in terms of the imposition of tax as a return for public goods and services that are provided to taxpayers with a presence in the jurisdiction. In fact, this rationale for jurisdictional division is the same as the rationale for the imposition of taxes, rather than user charges, generally.

among jurisdictions since, as Ault and Bradford point out, it is unclear that the geographic source of income is a coherent concept. The lack of coherence can be attributed to the fact that there is no obvious connection or close correlation between the policy basis for the allocation of net income to a particular jurisdiction and the details of the rules, including sourcing rules, that implement the necessary allocation.

In the presence of this inevitable element of normative arbitrariness, McIntyre argues that the content of alternative sourcing rules should be assessed using the following general criteria:

1. A sourcing rule should ensure that revenue and expenses are sourced where there is a significant economic nexus.
2. A sourcing rule should be fair in the sense that it is accepted by a wide range of jurisdictions as implementing an acceptable division of tax revenue.
3. A sourcing rule should be relatively simple in the sense that it can be applied in a relatively straightforward manner to a broad range of fact patterns.
4. A sourcing rule should be robust as against taxpayer manipulation; otherwise, realization of the accepted division of the tax base is undermined.

The first criterion can be seen to serve as a basic threshold that screens out those sourcing rules unsupported by a sufficient economic nexus. Once it is accepted that policy makers may choose one of several alternative rules satisfying this criterion, there is simply no obvious way to choose one rule over another as providing for a more significant economic nexus. The second and fourth criteria are broadly consistent

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75 Ault and Bradford, supra note 74, at 12.
76 In other words, the factors posited by sourcing rules can be seen as rough proxies for the provision of public goods and services and, as such, it is only by accident that they result in a close correlation between the allocation of the tax base and the amount of benefits realized by a taxpayer with a presence in the jurisdiction as the basis for the assertion of taxing jurisdiction. See, for example, Reuven S. Avi-Yonah, “Globalization, Tax Competition, and the Fiscal Crisis of the Welfare State” (2000) vol. 113, no. 7 Harvard Law Review 1573-1677; and Shay et al., supra note 74, who argue that a rationale for source-country taxation of business profits that is based on market access does not require that the cost of government benefits be quantified and charged to a particular non-resident. Instead, the level of taxation is effectively constrained by the relation between demand for access to the relevant market and the source-country tax level that is the “price” charged for such access relative to the prices charged by other source countries. Use of net income as a basis for the assessment of the relevant charge for market access thus results in an imprecise correlation between the amount of the charge and the benefits of market access. In short, once a sufficient connection to a jurisdiction is established in the sense that there is a presence that is perceived to justify taxation, any correlation between the precise allocation of the income tax base to the jurisdiction and the benefits derived by the relevant taxpayer in the form of market access is largely random.
77 Michael J. McIntyre, The International Income Tax Rules of the United States, 2d ed. (Newark, NJ: Lexis/Nexis) (looseleaf), 3-123 to 3-128. McIntyre describes a fifth criterion: if income has an economic nexus to two countries, it should be taxed in the country that has an inclination to do so.
with the kind of consequential or welfare perspective emphasized here as the policy basis for the adoption of some form of interest deductibility restriction. They both suggest an assessment of the revenue and efficiency effects of alternative sourcing rules, albeit in an indirect and very general sense. The third criterion, which can be described as one of “administrability,” is an important attribute of any sourcing rule independent of its consequential attributes.

When it comes to its sourcing, interest expense is no different than other expenses in exhibiting an inevitable element of arbitrariness in the allocation of net income as a tax base among countries. The literature identifies two principal approaches for the purpose of deductibility restrictions: tracing and formulary apportionment. Both of these approaches source interest expense on the basis of identified factors that are perceived to be sufficiently connected with a jurisdiction to link the expense with revenue.78 Tracing sources interest expense by physically tracing the use of borrowed funds by a taxpayer (that is, following a paper trail). The conceptual basis for this sourcing rule is nothing more than an extension to the cross-border context of a perceived, largely intuitive, appeal of a tracing rule in a purely domestic context, where the purpose of the use of borrowed funds must be determined in characterizing interest expense as deductible (in the case of an income-earning purpose) or non-deductible (in the case of a personal purpose).79 The intuition underlying tracing is that interest expense bears a close resemblance to any other payment made for the use of an asset.80 By analogy with these other rental payments, the deductibility of which is determined by examining the use of the relevant property, the deductibility of interest expense is determined by examining the use of borrowed funds.

Proponents of formulary apportionment reject the “interest as rent” analogy upon which tracing is premised, and argue that interest expense should be allocated among various uses (for example, the earning of domestic- and foreign-source income) on the basis of relative asset value or gross revenue.81 They emphasize the fungibility of money, which is seen to provide the theoretically “correct” conceptual basis for formulary apportionment of interest expense.82 However, the observation that money is fungible does not lead to the conclusion that formulary apportionment

78 The Mintz report, supra note 16, at 6.12, observes that “the tax system of the foreign country in which the business activities are carried on (and not the home country from which the investment is made) should bear the preponderance of the cost of financing the foreign business activities.”

79 See, for example, Shaviro, supra note 21 (emphasizing the acceptance of tracing as the sourcing “rule of the road” for interest expense).

80 See, for example, Michael J. McIntyre, “An Inquiry into the Special Status of Interest Payments” [1981] no. 5 Duke Law Journal 765-810.

81 See, for example, Alan Gunn, “Is an Interest Deduction for Personal Debt a Tax Expenditure?” (1979) vol. 1, no. 4 Canadian Taxation 46-50; and William A. Klein, “Borrowing To Finance Tax-Favored Investments” [1962] no. 4 Wisconsin Law Review 608-36, at 611-12. For a recent example in the cross-border context, see Graetz, supra note 20.

82 Shaviro, supra note 21.
is somehow theoretically correct. Formulary apportionment simply posits factors, such as asset value or gross income, that can be used to link interest expense with domestic- or foreign-source income. There is nothing about these factors to suggest that they correctly source interest expense with domestic- or foreign-source income while tracing the physical use of borrowed funds serves the same function incorrectly.

Indeed, when assessed against McIntyre’s suggested criteria, tracing has some well-recognized merits as a sourcing rule. Perhaps most importantly, it is considered relatively simple to apply. In a cross-border context, the simplicity of tracing is attributable, in large part, to its acceptance of the private-law integrity of transactions as the basis for linking borrowed funds to either domestic-source or foreign-source revenue. Tracing is commonly criticized, however, for its lack of robustness against taxpayer manipulation, which is seen to undermine the accepted division of the income tax base as between residence and source countries. The formalism of tracing, which makes it simple to apply, is seen to permit multinational groups to source deductible interest expense in a manner that maximizes the value of the deduction. As a general proposition, this result is realized by ensuring that funds are borrowed by group members so that they can be physically traced to the earning of revenue subject to tax in higher-tax countries.

This particular criticism of tracing is much the same as the principal criticism of a reliance on a separate-entity/transactional approach to source the revenue and expenses of a multinational group generally. The sourcing function in this particular context is executed primarily by the concept of corporate residence and an acceptance of the private-law integrity of transactions that are entered into by group members. In effect, revenue and expenses are attributed to taxing jurisdictions on the basis of the transactions that particular group members enter into with independent parties, as well as other group members. The sourcing of revenue and expenses (and the income allocation that results from this acceptance of the private-law integrity of transactions) is overlaid by the application of the arm’s-length standard, the origin of which can be traced to the League of Nations 1935 Model Convention on Income Allocation and the background Carroll report commissioned by the Fiscal Committee. The arm’s-length standard, however, is commonly seen to affect only the price charged for a loan in the form of the interest rate. On this view, application of the same arm’s-length standard to the sourcing of interest expense on the basis of tracing does not affect the ability of a multinational group to maximize the value of the interest deduction by physically linking borrowings with higher-taxed revenue. While purpose-based anti-avoidance rules can be used to constrain perceived taxpayer

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83 Ibid.


manipulation of tracing, the effectiveness of such approaches is unclear.\textsuperscript{86} Moreover, any revenue and efficiency gains that are realized through the robust application of anti-avoidance rules come at the cost of a loss of administrability associated with the attendant uncertainty of application.

Formulary apportionment sources interest expense by effectively piggybacking on the sourcing rules that are used for either assets or gross revenue. To the extent that these sourcing rules are seen to be anchored in a sound economic nexus to a jurisdiction, formulary apportionment tends to be characterized in the same positive manner, especially when contrasted with the formalism of tracing.\textsuperscript{87} This argument in favour of formulary apportionment is, in fact, nothing more than the proposition that this kind of approach is more robust against taxpayer manipulation, primarily because it ignores the form of borrowing transactions in the context of multinational groups as determinative of the sourcing of interest expense for deductibility purposes. The argument is a familiar one that is evident more generally in the literature on formulary apportionment as a method to allocate the income tax base associated with cross-border transactions generally.\textsuperscript{88} Like tracing in the more specific context of the sourcing of interest expense, formulary apportionment in the more general context of the allocation of the income base is seen as preferable to the separate-entity/transactional method of allocation, which is similarly seen to be susceptible to taxpayer manipulation because of its acceptance of the private-law integrity of transactions, even with the overlay of the arm’s-length standard.

As with the case for formulary apportionment of group income generally, the proposition that this approach is robust against taxpayer manipulation as an interest expense sourcing rule is largely unproven. As already noted, only the United States has any experience with the use of formulary apportionment, and that use is only for the purposes of the foreign tax credit limitation. Even accepting that formulary apportionment is relatively more robust than tracing, the approach suffers from two principal difficulties. One difficulty is that, as compared with tracing, formulary apportionment requires a more complicated set of second-order design rules, focused

\textsuperscript{86} See, for example, resolution (26) of the Notice of Ways and Means Motion To Amend the Income Tax Act accompanying the March 2007 budget, supra note 2 (defining “interest relating to an investment in a foreign affiliate” to include indirect financings); the Mintz report, supra note 16, at 6.14 (citing the need for anti-avoidance rules, in addition to a tracing approach applied to indirect financings, to address techniques such as cash damming, but also acknowledging that it would be difficult to overturn such techniques even with anti-avoidance rules); and Taxation of the Foreign Profits of Companies, supra note 1, at 26 (proposing the strengthening of anti-avoidance rules applicable for interest deductibility purposes generally).

\textsuperscript{87} See, in this respect, Graetz, supra note 20.

primarily on the definitions of asset value or gross revenue as sourcing factors. The details of these kinds of rules are well known in the literature and are not repeated here. Suffice it to say that the US experience with asset apportionment for foreign tax credit purposes illustrates starkly the kinds of legislative and administrative complexities that must be addressed. These administrative and compliance costs must be traded off against perceived revenue gains attributable to a sourcing rule that is much tighter than tracing, in the sense that it would characterize a greater amount of interest expense as foreign-source and thus subject to deductibility restrictions.

Putting these costs aside, the more significant difficulty with formulary apportionment may be its lack of acceptance by national tax policy makers. In this environment, use of formulary apportionment by a single country (or a relatively small set of countries) as a sourcing rule for deductibility purposes could result in the double-counting of interest expense or its non-deductibility by both residence and source countries, with undesirable revenue and/or efficiency effects. Without evidence of inconsistent sourcing results arising from the interaction of formulary apportionment and tracing, it is difficult to acquire a sense of the direction and significance of the revenue and/or efficiency effects. Largely as the result of policy-making inertia, tracing has tended to emerge as the sourcing rule for deductibility purposes. The ability to manipulate a deductibility restriction based on the tracing of borrowed funds may even be an unacknowledged positive attribute, since it permits the rearrangement of borrowing transactions to ensure deductibility.

As an alternative to both tracing and formulary apportionment, thin capitalization regimes have conventionally been limited to the sourcing of interest expense through the use of intragroup debt in the context of inbound direct investment. More particularly, the definition of the problem in these typical regimes has been limited to the use of intragroup debt as an equity substitute. In somewhat of a conceptual

89 For example, the Mintz report, supra note 16, at 6.15, notes the complexity associated with the need to measure asset values on a consolidated corporate group basis under asset-based formulary apportionment, which is especially problematic in the Canadian context because of the absence of a consolidation regime generally. The report argues that the lack of a consolidated reporting regime is not fatal to a tracing approach that extends to indirect financings of foreign affiliates. See supra note 70 regarding the application of a comprehensive thin capitalization regime on an unconsolidated basis.

90 See Graetz, supra note 20 (proposing the multilateral adoption of asset-based apportionment of interest expense equally in the context of outbound and inbound direct investment).

91 See Hines, supra note 39, at 21-22 (noting the higher effective tax rate on outbound direct investment that results from the allocation of interest expense to foreign-source income where the allocation is not accepted by the source country for deductibility purposes). See also the Mintz report, supra note 16, at 6.15 (observing that an asset-based formulary apportionment applied on a water's-edge basis “would, in some circumstances, unduly increase the cost of both foreign and domestic investment by Canadian multinationals”); and Taxation of the Foreign Profits of Companies, supra note 1, at 25 (“a move to exemption cannot of itself justify the introduction of interest apportionment or matching rules”).
breakthrough, the New Zealand thin capitalization regime was the first to extend a rule of non-deductibility to the arm’s-length debt of a resident corporation controlled by a non-resident. This result is realized generally by limiting the interest deduction of a New Zealand-resident corporation that is controlled by a non-resident where the ratio of debt-to-New Zealand assets of the corporation exceeds the greater of (1) 75 percent and (2) 110 percent of the worldwide debt percentage of the relevant multinational group. Deduction of interest on excess debt of a New Zealand-resident corporation is denied, with no distinction made between external debt and intragroup debt. The Australian thin capitalization regime generally follows the lead of the New Zealand regime in denying the deduction of interest on debt of an Australian-resident corporation controlled by a non-resident, to the extent that the amount of such debt exceeds the same 75 percent debt-to-assets ratio. Once conventional thin capitalization legislation is altered to apply a rule of non-deductibility to arm’s-length debt, thereby becoming a comprehensive sourcing limitation, it is not much of a conceptual leap to apply the same deductibility restrictions in the context of outbound direct investment. The unique genius of the Australian legislation lies in this simple conceptual leap, which has now been copied by New Zealand. For a resident corporation that earns foreign-source income through a CFC, the Australian legislation effectively limits the amount of debt that can be sourced domestically for interest deductibility purposes to the greater of (1) 75 percent of Australian assets and (2) 120 percent of the leverage of the worldwide corporate group.

By limiting the leverage of a resident corporation to the leverage of the multinational group of which it is a member, the Australian and New Zealand thin capitalization regimes are, in reality, modified asset apportionment formulas for the sourcing of interest expense for deductibility purposes. The added feature of a safe-harbour leverage ratio provides the appearance of a conventional thin capitalization regime, although it is used for many of the same reasons. That is, the safe harbour is used as a proxy for an arm’s-length capital structure within which the integrity of private-law transactions can be respected for sourcing purposes. In other words, this kind of a regime can be used to impose an outer limit on the sourcing of interest expense without many of the administrative and compliance complexities associated with formulary apportionment or the use of anti-avoidance rules under a

92 The earnings-stripping rule in Code section 163(j) provides a safe-harbour for foreign-controlled corporations with a leverage ratio of 1.5:1 or less. For the purposes of the safe harbour, all debt and equity of the corporation is taken into account. The rule of non-deductibility under the legislation is limited, however, to interest expense owed to related persons.

93 A leverage ratio in excess of the 75 percent ratio can be supported if it is considered consistent with an arm’s-length capital structure.

tracing regime. A thin capitalization regime modelled on the Australian or New Zealand examples realizes this result by, first, using the consolidated leverage ratio of a worldwide group as a proxy for an arm’s-length capital structure of resident members with outbound direct investments. As a proxy for an arm’s-length capital structure, the added feature of a fixed safe-harbour leverage ratio provides simplification gains for a wide range of multinational groups by respecting the private-law integrity of transactions for sourcing purposes to the extent of the greater of

- the specified safe-harbour leverage ratio and
- the consolidated leverage ratio of the particular worldwide group.  

Specifying a generous or “loose” safe-harbour ratio also permits pursuit of perceived spillover benefits associated with complementary outbound direct investment. The use of a multiple of the consolidated leverage ratio of a worldwide group can also provide similar leveraging “room” for similar purposes.

It is argued in the next section that, in the context of inbound direct investment, the same thin capitalization model emerges as the preferable deductibility restriction. The associated policy case is quite different, however, since the principal alternative to such a regime in a non-cooperative environment, in which policy makers pursue the maximization of national welfare, is a generalized rule of non-deductibility for intragroup debt.

**INBOUND DIRECT INVESTMENT: PROTECTING SOURCE-COUNTRY TAXATION OF AN ELEMENT OF LOCATION-SPECIFIC PROFITS**

Because all or substantially all of the revenue of a foreign-controlled corporation resident in a source country will typically be sourced in the country, tracing provides results that are much the same as an unrestricted interest expense deduction. Some form of formulary apportionment is required to push some of the interest expense of a foreign-controlled resident corporation offshore, but this can be done only if the assets or gross revenues of a multinational group are used for allocation purposes. This requirement raises the same administrative and compliance problems noted in the context of outbound direct investment. In addition, unilateral adoption in the context of inbound direct investment would require the provision of information to source-country tax authorities that is not otherwise available.

Given the limitations of formulary apportionment, it is unremarkable that thin capitalization regimes have been adopted by some countries in the context of inbound direct investment to address the potential revenue loss that would otherwise follow from an acceptance of the private-law integrity of transactions as determinative

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95 But see the Mintz report, supra note 16, at 6.15-6.16 (describing a “modified domestic allocation formula” as requiring apportionment on the basis of the ratio of domestic to foreign assets where a specified safe-harbour leverage ratio is breached).
of the sourcing of interest expense. This section considers the following alternatives to formulary apportionment (at least in an unmodified form) as possible choices for the restriction of interest deductibility:

- the combination of a rule of non-deductibility for intragroup debt and a thin capitalization regime applied to the arm’s-length debt of a foreign-controlled resident corporation; or
- a comprehensive thin capitalization regime applicable equally to the intragroup debt and the arm’s-length debt of a foreign-controlled resident corporation.

Although a credible policy case can be made in support of a generalized rule of non-deductibility for intragroup debt, it is suggested that a suitably designed comprehensive thin capitalization regime is the preferable alternative. Both of these rule choices allow policy makers to adjust effective tax rates in an effort to attract inbound direct investment. A comprehensive thin capitalization regime simply permits, within specified limits, the use of intragroup debt, as well as the external debt of a multi-national group, to lower effective tax rates through the interest expense deduction. Two principal reasons are emphasized as the basis to prefer a comprehensive thin capitalization regime in the context of inbound direct investment. First, there may not be all that much difference in result as between a generalized rule of non-deductibility for intragroup debt and the application of a thin capitalization regime to all debt of a foreign-controlled resident corporation. In that case, a comprehensive thin capitalization regime may be preferable primarily because of the constraint presented by the non-discrimination principle in tax treaties. Second, it is more likely that these two alternative rule choices produce different results, requiring a more refined identification of the tax-driven use of intragroup debt. This identification exercise can only be executed by a comprehensive thin capitalization regime.

National Welfare and a Generalized Rule of Non-Deductibility for Intragroup Debt

In a preceding section, we highlighted how an unrestricted interest expense deduction can lower the effective tax rate on both outbound and inbound direct investment. With inbound direct investment, it has apparently been more readily perceived that national welfare is not necessarily enhanced in the sense that revenue loss is compensated for by an offsetting increase in the income of nationals. Under standard country practice, thin capitalization legislation is applied in this context to deny the

96 For example, the US Treasury report *Earnings Stripping, Transfer Pricing and U.S. Income Tax Treaties*, supra note 1, at 24-25, notes the lack of empirical evidence on the relationship between reduction of the effective corporate tax rate through earnings stripping and the level of inbound direct investment. According to the report, even if the level of such investment increases in response to the lower effective corporate tax rate, it is unlikely that this will have an impact on aggregate employment unless there is unemployment in the markets for the labour that is required for the type of investment.
deduction of interest expense on excessive debt of a resident corporation held by significant non-resident shareholders. The perceived policy problem is the substitution of debt for equity by these shareholders in an attempt to repatriate source-country income as deductible interest expense rather than non-deductible dividends. The unarticulated empirical premise seems to be that any increase in effective tax rates does not cause tax-sensitive investment to migrate or, if it does, any loss of such investment is compensated for by an increase in tax revenue from location-specific profits associated with relatively immobile investment.

As an alternative to a thin capitalization regime that is limited to intragroup debt, a generalized rule of non-deductibility for such debt can, in principle at least, maximize national welfare. In this respect, the preceding discussion also highlighted the empirical literature supporting anecdotal evidence that direct investment is becoming increasingly mobile and sensitive to tax rates. In essence, a range of foreign direct investment is much closer in its mobility properties to portfolio investment, which, although subject to an indeterminate “home-country bias for longer-term investment,” is generally characterized as highly mobile and sensitive to changes in short-term after-tax rates of return. With respect to this type of investment, the standard policy prescription in a non-cooperative setting for a single, capital-importing country, whose economy is small and open, is the non-taxation of income from capital imports, except to the extent that the residence country provides a credit for source-country taxes. In the absence of a credit, any tax on capital imports would impose a wedge between pre-tax and after-tax returns. Because the tax can be avoided by investing elsewhere, pre-tax returns in the capital-importing country must rise to equate after-tax returns, with the incidence of the tax ultimately falling on immobile factors, such as labour. The inequality in pre-tax returns means that capital is misallocated in the sense that a reallocation could increase income. A direct tax on labour is preferable, since it would avoid the distortion of the location of investment.

Some thin capitalization regimes go further and recharacterize non-deductible interest expense as a dividend, primarily for non-resident withholding tax purposes. See Lars-Erik Wenehed, “Thin Capitalization and EC Law” (2003) vol. 30, no. 11 Tax Notes International 1145-55 (emphasizing the additional tax burden imposed on non-deductible interest expense that is not recharacterized as a dividend by both the source country and the residence country).


An exclusively residence-based system also emerges in the tax competition literature as a standard policy prescription for mobile direct investment, which will migrate in response to differences in tax levels, at least to the extent that jurisdictions are perfect or nearly perfect substitutes in their non-tax attributes. In a non-cooperative setting, tax rates on capital under these conditions will be driven down to very low levels, which, in the extreme, will approach zero where the marginal costs associated with the presence of additional investment in a jurisdiction are zero. Where maximization of national welfare is the goal, tax policy makers have two principal policy responses: either they can agree to cooperate to set source-country tax rates at an invariant level (or within a defined range), or they can eliminate source-country taxes in favour of residence taxation. The latter approach is generally the one that has been adopted with portfolio investment. On the defensible premise that residence is a less mobile factor (at least in the case of individuals), income from portfolio investments is taxed primarily in the country of residence of the investor, with only limited withholding taxes in the country of source.  

The focus with foreign portfolio investment has been on mechanisms, such as information reporting and information exchange between countries, that enforce the residence jurisdiction.  

For a range of foreign direct investment that is associated with the realization of location-specific profits, an exclusively residence-based system does not emerge, however, as the standard policy prescription. With this category of investment, tax policy makers could enhance national welfare by applying source-country taxation without distorting the choice of investment location; in such a case, the tax should not necessarily be shifted back and borne by immobile factors of production in the source country. In fact, until a broad range of foreign direct investment becomes perfectly mobile, jurisdictions are not substitutable, and the assumptions on which much of the tax competition literature is based do not hold. In this context, there is no obvious reason why tax policy makers should allow the repatriation of income free of source-country taxation. A thin capitalization regime, at least as applied to intragroup debt, may be rejected because it permits the use of such repatriation results within specified limits. A generalized rule of non-deductibility for intragroup debt is based, therefore, on two premises, one empirical and the other normative. First, a broad range of presumably immobile foreign direct investment

101 Much of the literature suggests that source-country taxes should be eliminated, except to the extent that they serve as a backup to the residence-country jurisdiction. See, for example, Howell H. Zee, “Taxation of Financial Capital in a Globalized Environment: The Role of Withholding Taxes” (1998) vol. 51, no. 3 National Tax Journal 587-99.  

102 In general, these enforcement mechanisms mimic domestic mechanisms, with the primary difference being the involvement of different taxing jurisdictions. Effective application of the residence jurisdiction in respect of foreign portfolio income also requires the adoption of CFC and passive investment fund regimes that look through non-resident entities and attribute such income currently to resident investors holding interests in these entities.  

103 See, for example, Tax Effects on Foreign Direct Investment, supra note 24, at 77-79.  

104 Ibid., at 25-44 (reviewing different models of the determinants of foreign direct investment).
continues to be made in jurisdictions that impose some form of corporate income tax, albeit at levels that may be a function of tax competition. Second, as will be emphasized in this section, while the details of sourcing rules for both revenue and expenses have no obvious normative content, they do have an important substantive consequence: the division of revenue between residence and source countries.105 There is simply no obvious normative reason why source jurisdiction is surrendered in the case of deductible interest on intragroup debt, given that the source country has a defensible claim to tax the return on the underlying assets associated with foreign direct investment.106

One of us has argued elsewhere107 that there are two similarly obvious and conceptually simple responses that, from the perspective of source countries, focus on the substitutability of intragroup dividend and intragroup interest payments in the context of inbound direct investment. One such response would realize the consistent treatment of these substitutable repatriation forms by extending deductibility to otherwise non-deductible dividend payments and applying a uniform withholding tax on the amount of such payments. The other response (which is alluded to but undeveloped in the OECD report on harmful tax competition)108 would realize the consistent treatment of dividends and interest payments by applying a broad denial of the deductibility of all such amounts for source-country corporate income tax purposes where the amounts are paid to a non-resident investor who is considered to hold a direct investment interest. As described here, the rationale for this approach is consistent with thin capitalization regimes that are limited to shareholder-held debt; but the approach differs from those regimes in rejecting the application of an arm’s-length standard or the use of a safe-harbour leverage ratio as a proxy for that standard. It is assumed instead that intragroup debt is predominantly a tax-driven substitute for intragroup equity, and a generalized rule of non-deductibility is required to protect source-country taxation of location-specific profits.

105 See, in this respect, Avi-Yonah, supra note 76, at 1649-52 (proposing a greater reliance on source-based taxation as a means of redistributing revenue to developing countries).

106 In this respect, see generally Shay et al., supra note 74 (emphasizing the contrast between the robust normative foundation for source taxation and the lack of normative content of the rules implementing such taxation).

107 Tim Edgar, “Corporate Income Tax Coordination as a Response to International Tax Competition and International Tax Arbitrage” (2003) vol. 51, no. 3 Canadian Tax Journal 1079-1158, at 1142-50. See also Alex Easson, “Company Tax Reform and the Inter-Nation Allocation of Tax Jurisdiction,” in John G. Head and Richard Krever, eds., Company Tax Systems (Sydney: Australian Tax Research Foundation, 1997), 285-320, at 315-16 and 319 (suggesting a rule of non-deductibility for related-party interest, rent, and royalty payments, consistent with the taxation of dividends, as part of a package eliminating dividend withholding tax); and Hufbauer, supra note 49, at 100-4 (proposing a rule of non-deductibility for interest on intragroup debt as part of a move to a territorial system with formulary apportionment of the external debt of a multinational group).

In terms of the goal of consistent tax treatment, there is little to choose between the application of a uniform withholding tax and a generalized rule of non-deductibility for intragroup debt. This equivalence of result holds to the extent that a uniform withholding tax rate is set at an amount equal to the corporate income tax rate in the source country. Moreover, in either case, appropriate relief for source-country tax would need to be provided by residence jurisdictions. As a matter of process, both approaches also present certain barriers that would have to be surmounted, ideally through multilateral agreement. The principal procedural barrier with a uniform withholding tax is the need to renegotiate bilateral tax treaties to establish a uniform withholding tax in excess of currently permissible amounts. The alternative to renegotiation is the use of tax treaty overrides in domestic legislation. The obvious procedural barrier to adoption of a rule of non-deductibility for intragroup debt is its implication of the standard non-discrimination article in tax treaties, which could potentially apply to override such a rule because of the different treatment of profit distributions as between non-resident and resident investors. This procedural barrier may be more apparent than real, however. In particular, the non-discrimination principle, such as it is, remains subject to erratic application regarding its scope.109 Perhaps most importantly, different treatment of non-resident and resident investors can be justified on the basis that these two categories of investors are not, in fact, in similar circumstances as required by the terms of standard non-discrimination treaty articles.110 This line of argument could be extended to a rule of non-deductibility in the context of inbound direct investment on the premise that non-resident investors in these circumstances are differently situated, in the sense that avoidance of the source-country corporate income tax is not replaced with taxation of the investor in the same way that it potentially is in a purely domestic context.111 Nonetheless, to

109 See, for example, Mary C. Bennett, “Nondiscrimination in International Tax Law: A Concept in Search of a Principle” (2006) vol. 59, no. 4 Tax Law Review 439-85 (contrasting the narrow interpretation of non-discrimination articles in tax treaties with the expansive interpretation by the European Court of Justice of the non-discrimination provisions of the EC treaty); Lara Friedlander, “The Role of Non-Discrimination Clauses in Bilateral Tax Treaties After GATT 1994” [2002] no. 2 British Tax Review 71-118, at 81 (observing that “[t]he general impression . . . of the non-national non-discrimination provision is that it is a provision that is interpreted as narrowly as possible by most courts, despite the evident possibility of doing otherwise”); and Alvin C. Warren Jr., “Income Tax Discrimination Against International Commerce” (2001) vol. 54, no. 2 Tax Law Review 131-69, at 151 (noting that “[a]s there is no international dispute-settlement body with authority to decide whether such a judgement is reasonable, the source country is often free to reach its own conclusion about whether such differential treatment is justified”).

110 In this respect, Friedlander notes, supra note 109, at 80, “Generally, however, courts are reluctant to make a finding of indirect discrimination and instead find that discrimination is not present if the differentiation is on the basis of formal residency.”

111 See, for example, Shay et al., supra note 74, at 114-15 (arguing that the different treatment of foreign-controlled corporations under the US earnings-stripping legislation can be justified on the basis that these corporations are in a position that is substantively different from that of US-owned corporations if the corporation and the investors are accounted for jointly).
ensure the effective application of a rule of non-deductibility, specific exceptions to the non-discrimination article in tax treaties would likely have to be adopted; alternatively, the relevant rule could be extended to tax-exempt domestic investors with comparable access, at least in principle, to the debt-equity substitution addressed by a rule of non-deductibility.\(^\text{113}\)

These procedural considerations may suggest a preference for a generalized rule of non-deductibility for intragroup debt over a uniform withholding tax. Ideally at least, such a rule requires a legislative distinction to be drawn between mobile and immobile direct investment. As emphasized above, the increase in the effective tax rate attributable to a prohibition on the sourcing of intragroup debt, in the context of inbound direct investment, should be limited to immobile direct investment in order to avoid efficiency losses associated with the tax-driven migration of relatively mobile investment. The difficulty is finding a legislative proxy for this particular characteristic. At the level of a general conceptual proposition, direct investment is mobile where the cost structure across a broad range of jurisdictions is comparable so that barriers to entry are low and competitive forces drive out profits in excess of the opportunity cost of capital.\(^\text{114}\) Immobile direct investment is, by inference, investment without these characteristics. There is surprisingly little, however, in the way of systematic empirical evidence suggesting proxies for the identification of the mobility characteristics of foreign direct investment.\(^\text{115}\) The extension of CFC regimes to income from a range of businesses may provide a starting point for a carve-out from a generalized rule of non-deductibility. For instance, income from foreign base company sales and services and income from some financial services are already subject to some CFC regimes. Other obvious candidates for inclusion are income from offshore financial services generally and income of headquarters corporations and coordination centres, which serve as vehicles for the tax-effective repatriation of earnings from active business operations of affiliated entities.\(^\text{116}\) The

\(^{112}\) This practice is common, for example, with the application of thin capitalization rules and branch profits taxes.

\(^{113}\) The US Treasury department adopted this approach in the application of the earnings-stripping rule in Code section 163(j). See, for example, Bennett, supra note 109, at 453. The legislative history also indicates that this position is in addition to the argument that the non-discrimination principle would not be violated because of the potential judicial recharacterization of shareholder-held debt as equity for both residents and non-residents. See, for example, Shay et al., supra note 74, at 114-15.

\(^{114}\) Tax Effects on Foreign Direct Investment, supra note 24, at 30-31.

\(^{115}\) Ibid., at 72 (noting that “empirical work that pools FDI across sectors may generate misleading results”).

extent to which a definition of mobile foreign direct investment should extend to income from a broad range of services and manufacturing or production activities is a more problematic empirical issue. A range of investment in these sectors is, in fact, location-dependent in the sense that some jurisdictions offer the availability of profits in excess of the opportunity cost of capital because of unique attributes that provide uniquely lower cost structures. Direct investment in these circumstances can appear to be mobile, although not necessarily in response to tax differences. A generalized rule of non-deductibility for intragroup debt should apply to ensure source taxation in much the same way as location-specific profits in other sectors, such as natural resources, where costs and barriers to entry are high.

An inability to resolve this necessary identification issue with any legislative precision arguably leaves tax policy makers with the option of applying a generalized rule of non-deductibility for intragroup debt equally in the context of mobile and immobile inbound direct investment. Although difficult to calibrate precisely, the resulting increase in the effective source-country tax rate for mobile direct investment can be moderated by reducing the nominal rate for all investment. Yet, this very same exercise can be carried out under a comprehensive thin capitalization regime applied equally to mobile and immobile inbound direct investment. In principle, any decrease in the effective tax rate attributable to the tax-deductible status of a range of intragroup debt can be offset by an increase in the statutory rate for all investment.

Indeed, depending on the ability of multinational groups to substitute the location of external debt for intragroup debt, there may be very little difference in result between these alternative deductibility restrictions as a means to maintain an element of source-country taxation while retaining an ability to adjust tax rates to attract inbound direct investment. As suggested in the next section, the principal difference, which is the source of potentially different results, is an empirical assumption regarding the use of intragroup debt. Unlike a generalized rule of non-deductibility, a comprehensive thin capitalization regime assumes that there is a range of intragroup debt that is used for non-tax reasons and should be excluded from a rule of

117 See, for example, Tax Effects on Foreign Direct Investment, supra note 24, at 134-44 (reviewing the effects of tax planning on the computation of forward-looking effective tax rates in estimating the impact of corporate tax reforms on foreign direct investment flows). See also Andreas Haufler and Marco Runkel, Firms’ Financial Choices and Thin Capitalization Rules Under Corporate Tax Competition, CESifo Working Paper Series no. 2429 (Munich: Center for Economic Studies and Ifo Institute for Economic Research, October 2008) (describing a simple two-country model of the relationship between increases in effective tax rates attributable to thin capitalization rules and welfare gains or losses from competition for mobile investment); Clemens Fuest and Thomas Hemmelgarn, “Corporate Tax Policy, Foreign Firm Ownership and Thin Capitalization” (2005) vol. 35, no. 5 Regional Science and Urban Economics 508-26 (noting that debt shifting causes countries to reduce corporate tax rates below personal tax rates while also broadening the tax base, with countries gaining from a coordinated response to setting tax rates or defining the tax base in the presence of foreign firm ownership); and Hong and Smart, supra note 41.
non-deductibility. Resolution of the choice between these two alternatives appears to depend, therefore, on the integrity of their underlying empirical assumptions. Closer reflection reveals, however, that a suitably designed comprehensive thin capitalization regime emerges as the preferable deductibility restriction, whatever the empirical assumption regarding the use of intragroup debt.

**Using a Thin Capitalization Regime To Limit the Sourcing of External Group Debt and Refine the Identification of the Tax-Driven Use of Intragroup Debt**

A generalized rule of non-deductibility for intragroup debt and a comprehensive thin capitalization regime may realize equivalent results if

- the location of the external debt of a multinational group is highly responsive to taxation; and
- a safe-harbour leverage ratio is set under a thin capitalization regime at a level that largely crowds out the tax-driven use of intragroup debt, while allowing it to be used as an indirect means to source external debt where non-tax factors dictate borrowing in non-local markets.

This potential equivalence of result is important, since policy makers have experience with the interaction of thin capitalization regimes and the non-discrimination principle as an international tax norm. Because there is some experience with the use of a thin capitalization regime to avoid the constraint of the non-discrimination principle, a generalized rule of non-deductibility for intragroup debt would be worth the costs incurred in surmounting this barrier only if the associated benefits were greater (that is, an increase in source-country taxes would not be offset by a decrease in the income of nationals attributable to the migration of foreign direct investment in response to a higher effective tax rate). But, in the face of the substitutability of the location of the external debt of a multinational group, an ability to design a comprehensive thin capitalization regime to realize equivalent results

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119 Edgar, supra note 107, at 1142-50, argues that a generalized rule of non-deductibility for interest expense may be defensible, in the context of inbound direct investment, as a response to international tax arbitrage transactions using hybrid financial instruments. However, such a rule requires a parallel rule treating all entities as corporations in the same context. It also requires acceptance of non-deductibility by residence countries as a means to enhance source-country taxation.
leaves no obvious reason to prefer a generalized rule of non-deductibility. Moreover, where non-tax differences in credit markets are significant enough to constrain such substitution, different results may be produced by these alternative deductibility restrictions, with the case for the use of a comprehensive thin capitalization regime being that much stronger.

A clear understanding of the policy relevance of the results produced by a generalized rule of non-deductibility for intragroup debt and a comprehensive thin capitalization regime requires a clear understanding of the components of capital income that are otherwise exposed to source-country taxation. In this respect, it is now well understood in some of the tax policy literature that capital income consists of three principal components:

- the normal return to waiting (or, alternatively, the time-value return);
- a premium for the assumption of non-diversifiable risk (or, alternatively, the return to risk taking); and
- economic rents (or, alternatively, supernormal returns realized from the exploitation of market power).

As noted above, the international tax literature has focused on these components of capital income, suggesting that the first component and an element of the second are associated with portfolio investment and mobile direct investment. All three components are commonly associated with immobile direct investment. Most importantly, location-specific profits in the form of supernormal returns can be subjected to source-country taxation without distorting the choice of investment location.

By imposing consistency of treatment with intragroup equity, a generalized rule of non-deductibility for intragroup debt would, most importantly, protect source-country taxation of the normal return on such debt, as well as a portion of the return to risk taking. A comprehensive thin capitalization regime, applicable to both the external debt of a multinational group and intragroup debt, permits the latter to be used on a tax-deductible basis within the limits of a specified leverage ratio. Intragroup debt can essentially be stacked on top of external group debt for purposes of the safe-harbour ratio. The difference in result as between a generalized rule of non-deductibility for intragroup debt and a comprehensive thin capitalization regime is thus the forgone source-country tax on the normal return and any returns to risk

120 In particular, recent literature considering the merits of a consumption tax has done much to clarify how these components are taxed under a consumption tax as compared with an income tax. The relevant literature is reviewed in Neil Brooks, “An Overview of the Role of the VAT, Fundamental Tax Reform, and a Defence of the Income Tax,” in Richard Krever and David White, eds., *GST in Retrospect and Prospect* (Wellington, NZ: Thomson Brookers, 2007), 597-661, at 609-17. See also Mitchell A. Kane, “Risk and Redistribution in Open and Closed Economies” (2006) vol. 92, no. 5 *Virginia Law Review* 867-928 (examining the effect on risk allocation of the asymmetric treatment of gains and losses by source and residence countries).

121 Supra notes 98 to 106 and the accompanying text.
taking on intragroup debt that is tax-deductible because it falls within the limits of a specified leverage ratio. Application of the arm’s-length standard to the amount of any interest expense on intragroup debt ensures that such debt cannot be used to strip out supernormal returns from source-country taxation, leaving the revenue base exposed to the extent of tax-deductible normal returns and any risk premium. But even this exposure may be minimal if the external debt of a multinational group can be located, without the use of intragroup debt, in a source country in response to a higher effective tax rate. A simple example can illustrate this point.

Assume that Subco, which is resident in source country S, has an arm’s-length debt-to-assets ratio of 66\(\frac{2}{3}\)% percent (a 2:1 leverage ratio), which complies with the safe-harbour ratio under the thin capitalization legislation of country S. Assume also that the riskless interest rate in country S is 5 percent, with the arm’s-length debt bearing a risk premium of 1 percent. With a return on assets of 7 percent before interest and taxes, Subco would have operating income of $70 on assets of $1,000 (before interest and taxes). Interest expense would be $40 ($666.67 \times 0.06), leaving $30 as the return on equity ($30/$333.33 = 9 percent). Where arm’s-length debt represents, instead, only 75 percent of the total debt of Subco ($500), a generalized rule of non-deductibility for intragroup debt would treat $10 of interest expense as a return on equity ($166.67 \times 0.06). Operating income after deductible interest would be $40 ($40/$500 = 8 percent return on equity of $333.33 and intragroup debt of $166.67, which is effectively treated as equity). A comprehensive thin capitalization regime, applicable to both arm’s-length and intragroup debt, would permit the deduction of the $10 interest expense on the intragroup debt (assuming a 2:1 safe-harbour leverage ratio). By using a thin capitalization deductibility restriction, country S would leave “money on the table”\(^{122}\) in this example equal to $10 of intragroup interest expense multiplied by the source-country tax rate. In other words, country S would forgo source-country tax on the normal return and any risk premium (6 percent, in total, in the example) that is repatriated in the form of deductible intragroup interest expense. But to the extent that external debt of the multinational group can be shifted to Subco on the same terms as intragroup debt, a generalized rule of non-deductibility would provide a result from the perspective of country S that is consistent with that under a comprehensive thin capitalization regime. In the presence of this substitution, a generalized rule of non-deductibility for intragroup debt might accomplish nothing more than a substitution of tax-deductible external debt of a multinational group by altering the identity of the borrowing group member.

With perfect substitutability of the choice of location of the external debt of a multinational group, this equivalence of result (as between a generalized rule of non-deductibility for intragroup debt and a comprehensive thin capitalization regime

\(^{122}\) Daniel Shaviro, “Money on the Table? Responding to Cross-Border Tax Arbitrage” (2002) vol. 3, no. 2 Chicago Journal of International Law 317-31 (using the term “money on the table” to describe the non-taxation of income by source and residence countries because of inconsistent characterization of hybrid instruments or entities).
applicable to both external and intragroup debt) can be realized if the safe-harbour leverage ratio for thin capitalization purposes is set at an amount equal to the consolidated leverage ratio of the group. Under this legislative condition, a thin capitalization regime as applied to intragroup debt effectively matches external debt of the group that is located elsewhere with the intragroup debt of the particular CFC. The multinational group is permitted to source its external debt in the source country either by having the CFC borrow funds directly from an arm’s-length lender or by having another group member do so, with the funds then being on-loaned to the CFC in the form of intragroup debt. The category of non-deductible intragroup debt is limited to such debt that is effectively matched with external group equity. In effect, external equity raised by the group cannot be converted, under this condition, into tax-deductible intragroup debt of a CFC.

Using the same example for illustrative purposes, assume that Subco has assets of $1,000 and an all-equity capitalization by Parentco, which is resident in country R. Parentco also has assets of $1,000 (equity of Subco) and an arm’s-length debt-to-assets ratio of $66\frac{2}{3}$, which is also the ratio of the consolidated worldwide group. This financing structure would leave the full $70 amount of operating income subject to country S tax. Parentco could, however, move the $40 of its interest expense to Subco, either by having Subco issue the external debt of the group directly to the arm’s-length lender or by capitalizing Subco with $666.67 of on-loaned debt and $333.33 of intragroup equity. The country S tax result under both structures would be the same if the country S thin capitalization legislation permitted Subco to issue tax-deductible debt (either arm’s-length or intragroup) up to an amount equal to the consolidated $66\frac{2}{3}$ debt-to-assets ratio of the worldwide group. Subco would have $40 of deductible interest expense (assuming, for simplicity of illustration, that Parentco on-lends some of its arm’s-length debt to Subco at the same interest rate), leaving $30 as the return on equity subject to country S tax. Any debt of Subco in excess of the permissible debt-to-assets ratio of the worldwide group is effectively considered to be provided by Parentco as on-loaned external equity, with the interest expense being treated consistently with non-deductible dividend payments.

If the direct borrowing by a group member is not perfectly substitutable for the on-lending of funds borrowed in non-local markets by another group member, a generalized rule of non-deductibility for intragroup debt is arguably overinclusive in screening for the tax-driven use of such debt. This broader rule cuts off the tax-deductible on-lending of external debt of a multinational group, even though such a structure may be used for non-tax reasons, including access to a lower cost of capital in non-local markets. The extent of the tax sensitivity of the location of external group debt is an empirical issue. As noted in the earlier discussion, there is some evidence of such sensitivity, which would suggest a range of substitutability with the use of intragroup debt as an indirect sourcing mechanism. The extent of this substitutability mitigates the apparent overinclusiveness of a rule of non-deductibility for intragroup debt. A plausible empirical assumption, however, is that the choice of location of the external debt of a multinational group is not entirely unconstrained by non-tax factors. Under this assumption, the principal function of a thin
capitalization regime in the context of inbound direct investment is the same as its function in the context of outbound direct investment: the provision of an overlay on the sourcing of external group debt. In the context of inbound direct investment, an important additional function is the provision of an ability to source external group debt equally through the use of intragroup debt, with the leverage ratio of a consolidated multinational group serving as a proxy for the arm’s-length standard. Prohibited transactions are identified as those that would otherwise convert the external equity of a consolidated multinational group to tax-deductible intragroup debt. As in the context of outbound direct investment, a comprehensive thin capitalization regime can be designed to soften the application of asset apportionment through the use of a legislative safe harbour, which reduces administrative and compliance costs; it also provides policy makers with some room to adjust effective tax rates in an effort to attract a range of inbound direct investment that is perceived as desirable, in the sense that it does not simply substitute for domestic investment.

In sum, when viewed in terms of the components of capital income, the absence of a limitation on the sourcing of interest expense in the context of inbound direct investment leaves the source-country tax base exposed to the extent of the normal return, as well as any return to risk taking, on intragroup equity. Provided that the substitution of a range of otherwise deductible payments, such as management and licensing fees (and rental payments generally), is adequately addressed, this exposure can be limited by either

- a comprehensive thin capitalization regime applicable to both external group debt and intragroup debt; or
- the combination of a rule of non-deductibility for intragroup debt and a thin capitalization regime that is limited to the sourcing of external group debt through the choice of location of the borrowing.

The first rule choice is a more target-effective approach when the location of external group debt is less than perfectly substitutable.

Historically, transfer-pricing rules have been used to maintain some constraint on the tax-driven substitution of transactions giving rise to non-debt deductions, and they probably must continue to be used in the absence of a shift to formulary apportionment approaches to the allocation of income generally from foreign direct investment. However, even the extreme case of a substantially all-debt capital structure, in which intragroup debt is substituted almost entirely for intragroup equity, cannot strip out supernormal returns and all returns to risk-taking as deductible interest expense. The “black hole” for source-country taxation of supernormal returns and returns to risk taking remains intragroup royalty payments used as tax-deductible substitutes for dividends. Thin capitalization regimes that use leverage ratios as an overlay on the interest expense sourcing results following from the private-law transactions of a multinational group are ill-equipped to address the use of intragroup royalties. One possible way to enhance source-country taxation would be to extend a comprehensive earnings-stripping approach, such as that used in Denmark,
Germany, and Italy, to intragroup royalty payments. But here again, we encounter the normative arbitrariness of sourcing rules. There is simply no clear normative content in the distinction between debt and equity securities and leasing and royalty agreements as transactional forms that would suggest reliance on either the residence-country or the source-country jurisdiction in the context of inbound direct investment. The kind of benefits rationale conventionally cited for the imposition of source-country taxation does not indicate in any precise manner what sourcing rule should be chosen for the allocation of costs that may otherwise be reimbursed through intragroup interest, rent, licensing, and royalty payments. Much the same imprecision is apparent in any notion that the origination of a loan, the ownership of a tangible asset, or even the development of an intangible asset in a particular jurisdiction means that a compensatory return should be sourced in the country.

Even so, normative arbitrariness of rule choice does not imply indifference on the part of national tax policy makers. The expansion of the source-country tax base that would result from the extension of non-deductibility status from intragroup interest to intragroup rent, licensing, and royalty payments would likely be contentious in a non-cooperative setting. In effect, the status quo would be altered to substitute an exclusively source-based taxation of these payments for what is currently a predominantly residence-based system. This kind of change could provoke a retaliatory response by countries seen to be net revenue losers. An obvious response would be assertion of a continued residence jurisdiction without recognition of any source-country tax. The response could result in a reduction in national welfare of source countries where the combined source and residence taxes eliminate economic rents and cause a reduction in the level of investment. The likelihood of a retaliatory response increases where a source country acts unilaterally in enacting a generalized rule of non-deductibility that extends beyond intragroup debt. Fear of isolation presents a classic prisoner’s dilemma for countries with predominantly source interests. Although these countries would collectively be better off acting cooperatively to expand the source tax base, their self-interest causes them to choose defection and reject such expansion in the face of residence-country retaliation.

123 With this kind of broader application, it is unclear whether a safe-harbour leverage ratio, such as that used under the US earnings-stripping rule, would be required.

124 Residence-country taxation of supernormal returns repatriated as royalty payments may be more apparent than real. Under deferral with credit systems, averaging of source-country taxes for credit purposes permits elimination of a substantial portion of residence-country tax. See, for example, Grubert and Altshuler, supra note 94 (finding that, for the 2000 taxation year, approximately two-thirds of US tax on foreign-source royalty income was non-taxable because of the use of excess foreign tax credits on underlying income repatriated as dividends). Residence-country tax can be avoided under exemption systems that permit supernormal returns to be deflected to a CFC resident in a third country and then repatriated as exempt dividends consistent with the characterization of the underlying income. See, in this respect, paragraph 95(2)(a); and George K. Yin, “Reforming the Taxation of Foreign Direct Investment by U.S. Taxpayers” (2008) vol. 49, no. 6 Tax Notes International 511-22, at 514 (noting that a move to an exemption system “would provide greater reason for U.S. taxpayers to develop their intangible assets offshore and then to repatriate their income as dividends rather than royalties”).
SPECIFYING A SAFE-HARBOUR LEVERAGE RATIO

We have argued that a thin capitalization regime should be conceptualized as an overlay on the sourcing of interest expense that is otherwise the result of a respect for the private-law integrity of transactions entered into by members of a multinational group. More particularly, we have argued that such a regime is a defensible means to constrain the sourcing of interest expense on the external debt of a multinational group in the context of both outbound and inbound direct investment. In the latter context, a thin capitalization regime is also preferable as a target-effective prohibition on the tax-driven sourcing of intragroup interest expense, which is identified as the conversion of the external equity of a multinational group into a tax-deductible form.

In using a fixed leverage ratio, either as a safe harbour or as the singular expression of the arm’s-length standard, existing thin capitalization regimes are far from consistent in their specification. In fact, the specification of an acceptable ratio has, not infrequently, been different at different times under the legislation of particular countries.\textsuperscript{125} It is probably unsurprising that country practice varies in the use of leverage ratios to screen for tax-driven substitutions of either intragroup debt for intragroup equity or the tax-driven location of external debt within a multinational group. As noted above, some countries may intentionally use loose or non-binding ratios as a means to lower effective tax rates on inbound direct investment. Even where specification of an acceptable ratio is not used in this way to attract inbound direct investment, it is notable that corporate finance theory provides very little in the way of instructive guidance.

Following the work of Modigliani and Miller,\textsuperscript{126} one particular strand of the optimal capital structure literature\textsuperscript{127} hypothesizes that, in a world with taxes, firms trade off the tax advantages of debt where interest expense is deductible and avoids the corporate-level tax, as compared with equity returns that are subject to the tax. This tax advantage is traded off against

\textsuperscript{125} For example, the existing thin capitalization rules in the Act specify a leverage ratio of 2:1 for the purpose of limiting interest deductions on intragroup debt in the context of inbound foreign direct investment. Before the February 28, 2000 budget, the ratio was 3:1. The change appeared to be the result of a recommendation in the Mintz report, that cited the adoption in some countries of a 2:1 ratio (see supra note 16, at 6.30). In proposing the recommended reduction, the Department of Finance commented in the February 2000 budget that “the permitted 3:1 debt-equity ratio is high compared to actual industry ratios in the Canadian economy, suggesting that the 3:1 ratio permits inappropriately high debt levels” and “[t]he new ratio [2:1] provides a better measurement of excessive reliance on related-party debt financing in the context of actual Canadian industry debt-equity ratios.” Canada, Department of Finance, 2000 Budget, Budget Plan, February 28, 2000, 247-48.


\textsuperscript{127} This literature is massive. For a brief review of its significance for the design of interest deductibility restrictions in the context of inbound direct investment, see Dahlby, supra note 28.
the non-tax costs of increased leverage, including agency costs;
the uncertainty of the value of the tax shield from debt in the face of non-debt deductions; and
any offsetting tax advantages of equity, such as deferral of the investor-level tax on retained earnings and taxation at lower capital gains tax rates on distribution or sale.

In this environment, it is not surprising that there is considerable uncertainty as to the determination of the optimal capital structure in the sense of a singular structure that maximizes firm value. Accordingly, it could be expected that observed leverage ratios would vary across firms and, at best, there would be a range of ratios that might be suggestive of a tax-driven substitution of debt for equity.

Although it is an admittedly blunt identification tool, we believe that the overall capitalization of a multinational group, ignoring intragroup transactions, can defensibly be used to identify the marginal source of funds for a particular member. The rationale for the use of this identification tool is the fact that the consolidated leverage of the group reflects the level of risk acceptable to shareholders, who determine the level of acceptable leverage through the share-pricing process. Where the leverage of a group member exceeds that of the worldwide group, the excess can presumptively be considered to be the marginal source of funds to which a rule of non-deductibility should be applied. But, as emphasized already, the exclusive use of the consolidated leverage ratio of a worldwide group is tantamount to asset apportionment and would suffer from the kinds of problems described already. The use of a safe-harbour leverage ratio provides a looseness of application consistent with transfer-pricing practices, generally, in their acceptance of a range of prices. Indeed, except for the financial sector, where regulatory leverage ratios can be used for tax purposes, we believe that tailored ratios for particular industry sectors are not required. In the context of outbound direct investment, tax policy makers can choose a “one-size fits all” safe-harbour ratio as a means of permitting a domestically based multinational to gain some additional leverage off its domestic assets and

128 In this respect, see Taxation of the Foreign Profits of Companies, supra note 1, at 26 (proposing to restrict the deduction of interest claimed by a UK member of a multinational group by reference to the group’s total consolidated external financing costs).

129 Japan uses “reasonable multiples” for industries beyond the financial sector. See KPMG, Taxation in Japan 2005 (Tokyo: KPMG Tax Corporation, 2005), 81 (online: http://www.kpmg.or.jp/resources/research/r_tax200507_1.pdf). It is difficult, however, to identify and define specific industries, to decide on a ratio for an industry, and to assign firms to a specific industry if they operate in multiple industries. For example, the Bush administration proposed to replace the 1.5:1 debt-to-equity ratio safe harbour under Code section 163(j) with safe-harbour ratios “tailored” to different asset classes. There were seven proposed asset classes with debt-to-asset ratios ranging from 0.98 to 0.50. Since a debt-to-equity ratio of 1.5:1 generally translates into a debt-to-asset ratio of 0.6, only intangible assets—the only asset class below 0.6—would have had a more burdensome threshold for the safe-harbour qualification. This proposal has never been enacted because of the added complexity associated with compliance and enforcement.
thereby capture some of the perceived externalities attributable to head-office (or regional head-office) operations. In the context of inbound direct investment, the same looseness of application permits some conversion of external equity to tax-deductible intragroup debt. The consequent reduction in the effective source-country tax rate can be seen as an attempt to compete for a range of investment.

Under comprehensive earnings-stripping legislation, such as that in Denmark, Germany, and Italy, an interest-coverage ratio is used as a different expression of the upper limit on the sourcing of arm’s-length debt. In principle at least, the same approaches that can be taken to the specification of a leverage ratio can be taken to the specification of an interest-coverage ratio. However, there does not appear to be much in the way of systematic empirical evidence of interest-coverage ratios either generally or for particular sectors.\textsuperscript{130} The existing empirical evidence for leverage ratios, although far from complete, seems to be more extensive,\textsuperscript{131} perhaps suggesting a slight preference for their use in the specification of a legislative safe-harbour. Compliance costs associated with legislative complexity have tended to be seen as more severe with an earnings-stripping approach,\textsuperscript{132} but this characterization is probably overstated. In terms of legislative complexity, the principal design feature distinguishing an earnings-stripping regime from a thin capitalization regime is the need to adopt carryover rules to alleviate the impact of the former on businesses with cyclical variations in revenue streams.\textsuperscript{133} These costs can be minimized by following

\begin{flushleft}

\textsuperscript{131} See, for example, Shee Boon Law, “The Choice of Fixed Accounting Ratios as Safe Harbours in Thin Capitalisation Rules—Some Guidance from Commercial Debt Contracts” (2006) vol. 21, no. 2 Australian Tax Forum 363-86. See also Jen Baggs and James A. Brander, “Trade Liberalization, Profitability, and Financial Leverage” (2006) vol. 37, no. 2 Journal of International Business Studies 196-211 (finding, for the period 1984-1997, a median debt-to-assets ratio of 65 percent for a sample of Canadian corporations); and Andrew M.C. Smith and Paul V. Dunmore, Double Tax Agreements and the Arm’s Length Principle: The Safe Harbour Ratio in New Zealand’s Thin Capitalisation Rules, Working Paper no. 14 (Wellington, NZ: Victoria University of Wellington, Centre for Accounting, Governance and Taxation Research, 2005). Smith and Dunmore found that (1) for the period 1983-1992 (before the enactment of the new rules in 1995), only about 5 percent of foreign-controlled New Zealand corporations had debt percentages in excess of the 75 percent debt-to-assets safe harbour ratio under the New Zealand thin capitalization legislation; and (2) foreign-controlled corporations in excess of the specified debt percentage do not tend to carry as much interest-bearing debt as New Zealand-owned corporations.

\textsuperscript{132} See, for example, the Mintz report, supra note 16, at 6.28 (characterizing earnings-stripping legislation as overly complex).

\textsuperscript{133} In this respect, see Williamson and Garland, supra note 17, at 30-31 (noting that the application of a balance sheet test, such as a leverage ratio, is not subject to cyclical fluctuations, and carryover of non-deductible expense is defensible only if the borrowing capacity of a foreign-controlled corporation is to be measured over the life of the corporation rather than annually).
\end{flushleft}
the lead of the German legislation and excepting those corporations that exceed the specified interest-coverage ratio but have a leverage ratio consistent with the consolidated ratio of the multinational group to which the corporation belongs.

We do not see much difference, therefore, that would suggest a preference for comprehensive earnings-stripping legislation or a comprehensive thin capitalization regime.\textsuperscript{134} Both approaches are broadly consistent conceptually. Nonetheless, to make our general point about the specification of a legislative safe harbour, this section of the article presents some empirical evidence, using both conservative and broad measures of leverage, relevant to this exercise in the context of a comprehensive thin capitalization regime. The empirical evidence we present suggests that the 3:1 ratio used in the Australian and New Zealand regimes may be non-binding for a broad range of sectors and, therefore, a poor proxy for an arm’s-length capital structure. As we are careful to emphasize, the relevant empirical evidence remains too coarse-grained to permit a precise calibration of the amount of additional investment that can be considered to compensate for revenue loss from an interest expense deduction. A safe-harbour leverage ratio performs this function only indirectly, in the sense of establishing a proxy for an arm’s-length capital structure that can be respected as non-tax-driven. Indeed, as is often pointed out in the context of inbound direct investment, an overly generous safe harbour provides the equivalent of an unrestricted deduction for all practical purposes. A thin capitalization regime with this kind of safe harbour is really nothing more than an elaborate signalling mechanism used by national policy makers wanting to indicate a willingness to cooperate in the international tax arena while continuing to subsidize outbound direct investment and/or lower the effective tax rate on inbound direct investment as a means of attracting such investment. A relatively tight safe-harbour leverage ratio, with an exception for ratios that are a modest multiple of a worldwide group ratio, may strike a more acceptable balance between revenue maintenance and competitiveness concerns in the context of both outbound and inbound direct investment.

Perhaps surprisingly, the literature on the choice of a safe-harbour leverage ratio under thin capitalization legislation is relatively thin.\textsuperscript{135} To our knowledge, only one

\textsuperscript{134} Differences in design features are reviewed in more detail in Edgar, Interest Deductibility Restrictions and Inbound Direct Investment, supra note 19.

article specifically addresses this issue directly. In comparing the thin capitalization rules in Australia, New Zealand, and the United States, Law argues that, since commercial debt contracts often contain accounting ratios intended to limit borrowing capacity, these contracts can provide a benchmark for ratios in thin capitalization regimes. He provides some empirical evidence on accounting ratios used in debt contracts across these three countries and concludes that the safe-harbour ratios in the relevant legislation may be too generous. All other empirical work sheds light only indirectly on the specification of an appropriate safe-harbour leverage ratio. The unique difficulty is finding a ratio that is appropriately binding, with some slack, for the broadest possible range of industries. To gain a sense of this issue, we undertook statistical analysis using a regression model to initially assess whether industry classification in Canada is a statistically significant determinant of leverage ratios of Canadian corporations. Other factors from the capital structure literature were included as control variables. Leverage ratios were then computed by industry for US acquirors and finding that the probability of a debt-financed taxable cash transaction is an increasing function of the acquiring firm's leverage ratio).

136 Law, supra note 131.

137 For example, Jog and Tang, supra note 34, use debt-to-asset ratios to investigate evidence of debt-shifting between Canadian subsidiaries and non-resident parent corporations. They analyze Canadian corporate income tax revenues using government data over a 10-year period to investigate evidence of debt-shifting between Canadian corporations and foreign corporations. Their sample firms were categorized in four ways: Canadian-controlled corporations (CCCs) with and without foreign affiliates, and foreign-controlled corporations (FCCs) with and without foreign affiliates. They found that in all of the categories except the CCCs without foreign affiliates, the firms had a consistent increase in their debt-to-assets ratio, which is indicative of increased reliance on debt financing. These findings are not surprising: CCCs without foreign affiliates have little incentive to increase their debt levels, because they operate only in Canada and, unlike the firms in the other three categories, cannot use interest deductions to reduce taxable income in countries with higher corporate tax rates. See also Michael Hoffman, “International Taxation and the Income Shifting Behaviour of Multinational Enterprises” (unpublished PhD thesis, University of Alberta, Department of Economics, 2001), examining the ability of multinational enterprises with a Canadian presence to shift pre-tax income across jurisdictions to take advantage of differences in tax rates. Hoffman finds that multinational enterprises shift as much income as possible from a high-tax to a low-tax jurisdiction through cross-border charges, and that a thin capitalization restriction is binding only when the return on equity exceeds the host-country’s after-tax interest rate. See, in addition, Pauline M. Shum, “Taxes and Corporate Debt Policy in Canada: An Empirical Investigation” (1996) vol. 29, no. 3 Canadian Journal of Economics 556-72 (using Canadian data and finding that corporate taxes have a significant effect on firms’ debt policy); and Jan Bartholdy, Gordon Fisher, and Jack Mintz, An Empirical Study of the Impact of Corporate Taxation on the Debt Policy of Canadian Firms, Discussion Paper no. 742 (Kingston, ON: Queen’s University, Institute for Economic Research, 1987) (using five theoretical models to analyze the influence of Canadian corporate tax rates on the debt-to-asset ratios of Canadian firms from 1970 to 1982 and finding that corporate tax rates have a strong effect on debt-to-asset ratios).

138 The control variables are based on Janikan Supanvani, “Capital Structure: Asian Firms vs. Multinational Firms in Asia” (2006) vol. 10, no. 1 Journal of American Academy of Business,
and compared with the 2:1 safe-harbour ratio used under the existing thin capitalization rules in the Act.

**Regression Model**

The regression model is expressed as follows:

\[
LEV = a_0 + a_1 \text{TANGIBLE} + a_2 \text{GROWTH} + a_3 \text{SIZE} + a_4 \text{PROFITABILITY} + a_5 \text{NOL_CFWD} + a_6 \text{TAX RATE} + a_7 \text{VOLATILITY} + a_8 \text{INDUSTRY} + \ldots + a_8 \text{Z\_INDUSTRY} + e
\]

where \(LEV\) is the debt-to-equity ratio and is estimated according to the definition under the Act:

\[
A/(B + C + D),
\]

where

- \(A\) is the monthly average of outstanding debts to specified non-residents;
- \(B\) is retained earnings of specified non-residents at the beginning of the taxation year;
- \(C\) is contributed surplus contributed by a specified non-resident shareholder, calculated as the average of all contributed surplus amounts at the beginning of a calendar month that ends in the taxation year of the resident corporation; and
- \(D\) is paid-up capital in respect of shares of a specified non-resident shareholder, and is calculated as the average of all paid-up capital amounts at the beginning of a calendar month that ends in the taxation year of the resident corporation.

Since the information needed to calculate the above ratios is not readily available from publicly available sources, the ratio is estimated in two different ways. The first measure divides long-term debt by book value of equity (\(LEV_1\)), and is considered

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139 We considered using the equivalent metric to Jog and Tang’s debt-to-assets ratio (supra note 34). In their study, debt was the sum of long-term and short-term debt, and assets were the difference between total assets and accounts payable. Equity would be the difference between their definition of assets and their definition of debt. Thus, one proxy could be (\(\Sigma\) long-term + short-term debt)/[(total assets – A/P) – (\(\Sigma\) long-term + short-term debt)]. However, using this proxy would have resulted in an unacceptably small sample size because the database did not contain sufficient details for accounts payable and short-term debt.
to be a conservative debt-equity metric. The second measure divides total liabilities by total shareholder’s equity (LEV 2), constituting a broad representation of leverage, making this proxy an upper bound.\textsuperscript{140} LEV 1 more closely approximates the technical definition of leverage used in the Canadian thin capitalization rules, whereas LEV 2 more closely approximates an economic or “actual” definition of leverage.

The independent variables in the above regression equation are defined as follows:

- **TANGIBLE** is the ratio of net fixed assets (PPE) to total assets.\textsuperscript{141}
- **GROWTH** is measured by the ratio of market-to-book value of equity.\textsuperscript{142}
- **SIZE** is measured by log of sales.\textsuperscript{143}
- **PROFITABILITY** is measured by the ratio of operating income to total assets.\textsuperscript{144}
- **NOL\textsubscript{CFWD}** is indicated by a dummy variable, which indicates the presence or absence of a net operating loss carryforward reported in the financial statement footnotes.\textsuperscript{145}
- **TAX\textsubscript{RATE}** is the trichotomous measure of a firm’s marginal tax rate and is coded by two binary variables.\textsuperscript{146}
- **VOLATILITY** is measured by a corporation’s EBITDA (earnings before interest, taxes, depreciation, and amortization), scaled by the corporation’s assets in year \(t\) and divided by the standard deviation of the corporation’s earnings across sample years.\textsuperscript{147}

\textsuperscript{140} Per Compustat, book value of equity (DATA60) was almost always identical to total shareholder’s equity (DATA216). Long-term debt is DATA9 and total liabilities are total assets (DATA6) less total shareholder’s equity (DATA216).

\textsuperscript{141} Corresponds to Compustat DATA8. Regressions were also run using gross PPE (DATA7), and there were no significant differences between the two definitions.

\textsuperscript{142} Market value was calculated as price at the close of the year (DATA24) multiplied by the number of common shares outstanding (DATA25). This product was divided by the book value of equity (DATA60). This proxy for growth is also referred to as Tobin’s \(Q\) in the literature.

\textsuperscript{143} Compustat DATA12.

\textsuperscript{144} Compustat DATA13 divided by DATA6.

\textsuperscript{145} Compustat DATA52.

\textsuperscript{146} Following Klassen and Mawani, supra note 138, and Graham, supra note 135, we estimate trichotomous marginal tax rates (low, moderate, and high). To do so, the presence of operating loss carryforwards and the sign of estimated taxable income are needed. Taxable income is estimated by subtracting the change in future (deferred) taxes on the balance sheet, grossed up by the statutory tax rate, from net income before taxes. A statutory rate of 38 percent was used. Firms with positive taxable income and no loss carryforwards are considered to have a high marginal tax rate (the top statutory rate of 38 percent). Firms with both negative taxable income and loss carryforwards are deemed to have a low marginal tax rate (0 percent). Otherwise, firms are deemed to have a moderate marginal tax rate (19 percent).

\textsuperscript{147} Volatility is estimated using the “risk-adjusted operating performance variable” of Jog and Tang, supra note 34, at 17. For firms with one or two observations, additional earnings outside the sample years 1996-2005 were used where possible to calculate the standard deviation of the corporation’s earnings.
**INDUSTRY** is an indicator variable capturing the four-digit Standard Industrial Classification (SIC) code. Subsequent models are estimated with two-digit SIC codes.\(^\text{148}\)

The sample selection initially included all firms on the Compustat “Canadian Annual” database during the period 1996-2005 inclusive. This time frame was chosen because it provided a window centred on the event date (2000) when the thin capitalization rules were changed.\(^\text{149}\) This selection process captured 3,715 firms, including profitable and unprofitable firms. A winsorizing procedure was done to remove extreme observations.\(^\text{150}\) Also, entities not affected by the thin capitalization rules—income trusts and limited partnerships—were removed. Only corporations were included in the final sample of 2,890 firms.

**Regression Results**

Table 1 presents the regression results. The results show that industry is a statistically significant determinant of leverage, regardless of definition. Therefore, it seems reasonable to do further statistical analysis on leverage ratios by industry.

\(^{148}\) DNUM in Compustat. There were 211 different classifications using four-digit SIC codes and 65 different classifications using two-digit SIC codes. Three two-digit classifications were dropped, leaving 62 industry classifications with two-digit SIC codes. “Cigarettes” was dropped because all five of the observations were eliminated in the winsorizing procedure (see infra note 150). “ Pipelines” was dropped because all observations were income trusts. “Retail—furniture stores” resulted in no observations after the winsorizing procedure and the removal of all non-corporate entities.

\(^{149}\) Large public corporations rarely experience major changes in leverage, except for periods of distress when large writeoffs may reduce book value of equity and thereby increase leverage ratios. The end of this 10-year period reflects the latest data at the time of conducting this study. A 10-year period was considered sufficient to analyze intertemporal changes in leverage without going back too far in history in the event that, at an earlier time, the firm may have been significantly different in its characteristic. To get balanced panel data, we retrieved data from an equal number of years on either side of the event date (or the year in which the thin capitalization rules changed).

\(^{150}\) Bringing all the variables to generally accepted skewness and kurtosis limits of $\pm 1$ would have resulted in an unacceptably small sample size. Therefore, extreme observations for LEV 1, LEV 2, TANGIBLE, GROWTH, and PROFITABILITY were winsorized. These variables were ranked from lowest to highest, and observations representing the lowest 0.015 percent and the highest 0.05 percent of the amounts for each category were removed. If 0.05 percent had been used as the percentage for the low amounts, all of the negative LEV 1 and LEV 2 would have been removed. To ensure that unprofitable firms were included in the sample, the percentage was reduced to 0.015 percent. To ensure that the data were normally distributed, $Q - Q$ plots and histograms were run for each variable. All variables appeared to be normally distributed after the winsorizing procedure. Skewness and kurtosis factors were substantially improved over the initial sample. The descriptive statistics presented in table 2 are for the winsorized sample.
TABLE 1  Determinants of Leverage

<table>
<thead>
<tr>
<th></th>
<th>Pooled regression tests—LEV 1</th>
<th></th>
<th>Pooled regression tests—LEV 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4-digit SIC code</td>
<td>2-digit SIC code</td>
<td>4-digit SIC code</td>
<td>2-digit SIC code</td>
</tr>
<tr>
<td>Intercept</td>
<td>Beta</td>
<td>t-value</td>
<td>Beta</td>
<td>t-value</td>
</tr>
<tr>
<td>Tangible</td>
<td>1.427</td>
<td>7.062*</td>
<td>1.415</td>
<td>12.804*</td>
</tr>
<tr>
<td>Growth</td>
<td>0.234</td>
<td>11.701*</td>
<td>0.234</td>
<td>11.717*</td>
</tr>
<tr>
<td>Size</td>
<td>(0.184)</td>
<td>(4.533)*</td>
<td>(0.169)</td>
<td>(4.179)*</td>
</tr>
<tr>
<td>Profitability</td>
<td>(0.300)</td>
<td>(6.542)*</td>
<td>(2.906)</td>
<td>(6.323)*</td>
</tr>
<tr>
<td>Volatility</td>
<td>17.856</td>
<td>8.932*</td>
<td>17.812</td>
<td>9.061*</td>
</tr>
<tr>
<td>NOL_cfwd</td>
<td>(0.491)</td>
<td>(4.910)*</td>
<td>(0.500)</td>
<td>(5.005)*</td>
</tr>
<tr>
<td>Tax rate</td>
<td>(0.716)</td>
<td>(8.577)*</td>
<td>(0.724)</td>
<td>(8.668)*</td>
</tr>
<tr>
<td>Industry</td>
<td>0.006</td>
<td>12.091*</td>
<td>0.020</td>
<td>12.306*</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.209</td>
<td>0.210</td>
<td>0.267</td>
<td>0.278</td>
</tr>
</tbody>
</table>

* Significant at the 0.01 level.
Industry Means

The following describes the mean debt-to-equity ratios for each industry, and whether they differ significantly from 2.0. Two-digit SIC codes were chosen to streamline the presentation of the results. The results do not change significantly when using four-digit SIC codes, as Table 1 indicates.

Table 2 reports the mean and median debt-to-equity ratios by industry, along with the standard deviations for LEV 1 and LEV 2. Medians are reported alongside the means since different industries may be affected differently (in their means) by one or two (relatively) extreme observations (very large or very small firms) despite the winsorizing process.

The mean (median) debt-to-equity ratio for all industries based on the LEV 1 definition was 1.102:1 (0.662:1). Four of the 62 industries had a mean debt-to-equity ratio that exceeded 2:1, but only the real estate industry had a debt-to-equity ratio exceeding 2:1 with statistical significance at conventional levels. The one industry (real estate) that can be reliably expected to have a technical mean debt-to-equity ratio exceeding 2:1 represents 187 observations, or 6.5 percent of the total observations.

For the LEV 2 measure reflecting the economic definition of leverage, the mean (median) debt-to-equity ratio across all industries was 2.917:1 (1.565:1), which clearly exceeds 2:1. Twenty-seven of the 62 industries had a mean debt-to-equity ratio exceeding 2:1, but only 9 exceeded 2:1 with statistical significance at conventional levels.

One-sided t-tests are estimated to compare the means for each industry to the 2:1 value. Only one-tailed tests of significance are used since the thin capitalization problem arises only when a firm’s leverage ratio exceeds 2:1. Table 2 also documents the industry means for LEV 1 and LEV 2 that are significantly different from 2.0 at the 0.05 level.

Fifty-three of the 62 industries have LEV 1 means that are significantly different—at the 0.05 level—from the hypothesized value of 2.0. Of these, only one industry—real estate—has a mean ratio that is significantly greater than 2.0. Thirty-eight of the 62 industries have LEV 2 means that are significantly different—at the 0.05 level.

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151 Only the lower bound of a 95 percent confidence interval around the mean for the real estate industry exceeded 2.0.

152 Note that commercial banks have a debt-to-equity ratio well in excess of 2:1 (nearly 20:1) when the LEV 2 definition is used, but not when the LEV 1 definition is used.

153 The following industries had lower bounds of a 95 percent confidence interval around their means in excess of 2.0: telephone and communication equipment; electric, natural gas, and sanitary services; commercial banks; other credit institutions; life, fire, marine, and casualty insurance; real estate; oil and mineral royalty traders; services—personal services; and non-operating establishments.
TABLE 2  Leverage Ratios by Industry

<table>
<thead>
<tr>
<th>Industry</th>
<th>No. of firms</th>
<th>LEV 1</th>
<th>LEV 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural production</td>
<td>2</td>
<td>1.048</td>
<td>1.666</td>
</tr>
<tr>
<td>Forestry</td>
<td>8</td>
<td>0.884</td>
<td>2.404</td>
</tr>
<tr>
<td>Metal, mining, and ores.</td>
<td>181</td>
<td>0.794</td>
<td>1.443</td>
</tr>
<tr>
<td>Petroleum and natural gas.</td>
<td>284</td>
<td>0.769</td>
<td>1.311</td>
</tr>
<tr>
<td>Mining and quarrying of non-metallic minerals</td>
<td>13</td>
<td>0.581</td>
<td>1.027</td>
</tr>
<tr>
<td>General building contractors</td>
<td>8</td>
<td>0.628</td>
<td>1.528</td>
</tr>
<tr>
<td>Heavy construction other than building</td>
<td>13</td>
<td>0.711</td>
<td>3.142</td>
</tr>
<tr>
<td>Food and beverages</td>
<td>111</td>
<td>0.953</td>
<td>1.654</td>
</tr>
<tr>
<td>Textile mill products</td>
<td>1</td>
<td>0.714</td>
<td>1.400</td>
</tr>
<tr>
<td>Apparel and other finished fabrics</td>
<td>7</td>
<td>0.392</td>
<td>0.825</td>
</tr>
<tr>
<td>Lumber and sawmills</td>
<td>97</td>
<td>1.351</td>
<td>2.254</td>
</tr>
<tr>
<td>Household furniture</td>
<td>16</td>
<td>0.760</td>
<td>1.965</td>
</tr>
<tr>
<td>Pulp and paper</td>
<td>91</td>
<td>1.241</td>
<td>2.118</td>
</tr>
<tr>
<td>Newspapers, books, and publishing</td>
<td>59</td>
<td>1.161</td>
<td>2.474</td>
</tr>
<tr>
<td>Pharmaceuticals and chemicals</td>
<td>87</td>
<td>0.844</td>
<td>1.518</td>
</tr>
<tr>
<td>Petroleum refining</td>
<td>38</td>
<td>0.376</td>
<td>1.193</td>
</tr>
<tr>
<td>Rubber and plastics</td>
<td>28</td>
<td>0.502</td>
<td>1.098</td>
</tr>
<tr>
<td>Cement and hydraulic</td>
<td>11</td>
<td>0.373</td>
<td>0.964</td>
</tr>
<tr>
<td>Steel works, blast furnaces, and rolling</td>
<td>117</td>
<td>0.714</td>
<td>1.686</td>
</tr>
<tr>
<td>Handtools, general hardware, and metal</td>
<td>42</td>
<td>0.919</td>
<td>1.222</td>
</tr>
<tr>
<td>Farm, construction and industrial machinery.</td>
<td>63</td>
<td>0.385</td>
<td>1.024</td>
</tr>
<tr>
<td>Telephone and communication equipment</td>
<td>62</td>
<td>1.051</td>
<td>2.894</td>
</tr>
<tr>
<td>Motor vehicle parts, aircraft, and aircraft</td>
<td>80</td>
<td>0.763</td>
<td>1.922</td>
</tr>
<tr>
<td>Photographic equipment and supplies</td>
<td>15</td>
<td>1.835</td>
<td>3.945</td>
</tr>
<tr>
<td>Games, toys, and sporting goods</td>
<td>14</td>
<td>0.777</td>
<td>1.350</td>
</tr>
<tr>
<td>Railroads</td>
<td>20</td>
<td>0.673</td>
<td>1.599</td>
</tr>
</tbody>
</table>

(The table is continued on the next page.)
## TABLE 2  Continued

<table>
<thead>
<tr>
<th>Industry</th>
<th>No. of firms</th>
<th>LEV 1</th>
<th>LEV 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td>Local and suburban transit</td>
<td>9</td>
<td>0.826</td>
<td>0.810</td>
</tr>
<tr>
<td>Trucking and courier services</td>
<td>18</td>
<td>1.191</td>
<td>1.032</td>
</tr>
<tr>
<td>Water transportation</td>
<td>9</td>
<td>0.212</td>
<td>0.206</td>
</tr>
<tr>
<td>Air transportation</td>
<td>45</td>
<td>1.346</td>
<td>0.841</td>
</tr>
<tr>
<td>Transportation services</td>
<td>2</td>
<td>0.531</td>
<td>0.531</td>
</tr>
<tr>
<td>Radio, telephone, and television</td>
<td>176</td>
<td>1.558</td>
<td>1.000</td>
</tr>
<tr>
<td>Electric, natural gas, and sanitary</td>
<td>175</td>
<td>1.685</td>
<td>1.447</td>
</tr>
<tr>
<td>Wholesale—durable goods</td>
<td>46</td>
<td>0.568</td>
<td>0.569</td>
</tr>
<tr>
<td>Other wholesale products</td>
<td>50</td>
<td>0.613</td>
<td>0.493</td>
</tr>
<tr>
<td>Retail—building materials, hardware,</td>
<td>4</td>
<td>0.203</td>
<td>1.107</td>
</tr>
<tr>
<td>Garden supply</td>
<td>6</td>
<td>0.535</td>
<td>0.263</td>
</tr>
<tr>
<td>Retail—department stores</td>
<td>21</td>
<td>0.437</td>
<td>0.392</td>
</tr>
<tr>
<td>Retail—grocery stores</td>
<td>44</td>
<td>0.797</td>
<td>0.720</td>
</tr>
<tr>
<td>Retail—convenience stores</td>
<td>8</td>
<td>0.740</td>
<td>0.702</td>
</tr>
<tr>
<td>Retail—home and auto supply stores</td>
<td>10</td>
<td>0.563</td>
<td>0.552</td>
</tr>
<tr>
<td>Retail—apparel and accessory stores</td>
<td>1</td>
<td>0.415</td>
<td>0.415</td>
</tr>
<tr>
<td>Retail—women’s clothing stores</td>
<td>13</td>
<td>0.271</td>
<td>0.252</td>
</tr>
<tr>
<td>Retail—family clothing stores</td>
<td>4</td>
<td>0.472</td>
<td>0.478</td>
</tr>
<tr>
<td>Retail—eating places</td>
<td>8</td>
<td>0.497</td>
<td>0.469</td>
</tr>
<tr>
<td>Retail—miscellaneous</td>
<td>20</td>
<td>0.527</td>
<td>0.340</td>
</tr>
<tr>
<td>Commercial banks</td>
<td>82</td>
<td>0.430</td>
<td>0.444</td>
</tr>
<tr>
<td>Other credit institutions</td>
<td>33</td>
<td>1.792</td>
<td>1.028</td>
</tr>
<tr>
<td>Security brokers and investment</td>
<td>78</td>
<td>0.472</td>
<td>0.385</td>
</tr>
<tr>
<td>Advisers</td>
<td>89</td>
<td>0.350</td>
<td>0.279</td>
</tr>
<tr>
<td>Life, fire, marine, and casualty</td>
<td>18</td>
<td>0.751</td>
<td>0.608</td>
</tr>
<tr>
<td>Insurance agents and brokers</td>
<td>187</td>
<td>2.831</td>
<td>1.874</td>
</tr>
</tbody>
</table>

(The table is concluded on the next page.)
<table>
<thead>
<tr>
<th>Industry</th>
<th>No. of firms</th>
<th>LEV 1</th>
<th></th>
<th>LEV 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil and mineral royalty traders</td>
<td>38</td>
<td>1.496</td>
<td>0.839</td>
<td>2.634</td>
<td>4.675</td>
</tr>
<tr>
<td>Hotels and motels</td>
<td>17</td>
<td>4.152</td>
<td>0.545</td>
<td>5.146</td>
<td>3.834</td>
</tr>
<tr>
<td>Services—personal services</td>
<td>12</td>
<td>1.363</td>
<td>1.211</td>
<td>1.051</td>
<td>4.713</td>
</tr>
<tr>
<td>Other services—equipment rental, computer</td>
<td>62</td>
<td>1.404</td>
<td>0.751</td>
<td>1.787</td>
<td>2.590</td>
</tr>
<tr>
<td>Services—automotive repair</td>
<td>13</td>
<td>3.127</td>
<td>1.667</td>
<td>3.500</td>
<td>5.564</td>
</tr>
<tr>
<td>Services—motion pictures</td>
<td>16</td>
<td>1.755</td>
<td>1.145</td>
<td>1.604</td>
<td>2.968</td>
</tr>
<tr>
<td>Services—racing, amusement, and membership</td>
<td>43</td>
<td>0.936</td>
<td>0.893</td>
<td>0.645</td>
<td>1.531</td>
</tr>
<tr>
<td>Services—health and nursing</td>
<td>19</td>
<td>1.453</td>
<td>1.581</td>
<td>0.989</td>
<td>2.310</td>
</tr>
<tr>
<td>Services—engineering, laboratories, management</td>
<td>32</td>
<td>0.707</td>
<td>0.389</td>
<td>0.743</td>
<td>1.874</td>
</tr>
<tr>
<td>Non-operating establishments</td>
<td>14</td>
<td>2.339</td>
<td>2.461</td>
<td>1.949</td>
<td>4.806</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Mean</th>
<th>Median</th>
<th>Std. dev.</th>
<th>Mean</th>
<th>Median</th>
<th>Std. dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2,890</td>
<td>1.102</td>
<td>0.662</td>
<td>2.917</td>
<td>1.565</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Means in bold font do not differ significantly from 2.0 (using one-tailed t-statistics at a 0.05 level of significance).
level—from the hypothesized value of 2.0. Of these, 13 industries have means that are significantly greater than 2.0.\textsuperscript{154}

These results indicate that leverage varies statistically across industries. \textit{LEV 1}, which more closely fits the technical definition of leverage under the Act, is mostly under the 2:1 limit, with the real estate industry being the only exception. \textit{LEV 2}, which more closely approximates the economic definition of leverage, is also mostly under the 2:1 limit, with the exception of 13 industries. While certain industries have “actual” debt-to-equity ratios greater than 2:1, it is unclear whether these industries would have debt-to-equity ratios for thin capitalization purposes under the Act greater than 2:1.

Approximately 51 percent of the total observations using \textit{LEV 2} exceeded 2:1, and thus it may appear that the constraining of the ratio to 2:1 may not have been justified. However, the \textit{LEV 2} definition is more of an economic definition of leverage than a technical definition under the Act. If Canadian corporations tend to have only long-term debt owing to their foreign parents, the narrow definition of leverage (more closely aligned to the tax definition) is more appropriate. In these instances, the reduction in the debt-to-equity ratio appears to be warranted because the mean debt-to-equity ratio of 1.102:1 is well below 2:1, and 92 percent of firms report leverage ratios below 2:1.

The results (not presented) of separate regressions estimated for each year confirm that the industry variable is statistically significant in each year. As additional sensitivity analysis, two separate regressions are estimated for the periods 1996-1999 and 2001-2005, and industry is found to be statistically significant in both regressions (the results are not presented here).

These results must be taken cautiously. Data on debt-to-equity ratios as computed under the Act for thin capitalization purposes are not publicly available. The definitions of leverage used in the regression analysis do not align perfectly with the tax definitions as reflected in confidential corporate tax return data. Data on privately held companies were also unavailable. A broader range of closely held corporations may find a 2:1 debt-to-equity ratio to be more binding than is the case for public corporations. Future research could compare industries cross-nationally, in addition to comparing our results with actual data on thin capitalization ratios computed for tax purposes, and could analyze how responsive firms were to the change in ratios in 2000. Our results confirm that industry classification is a statistically significant determinant of leverage under both the broad and the narrow definitions of leverage. They also suggest that, with the exception of the real estate industry, a leverage ratio of 2:1 is a suitable proxy for an arm’s-length capital structure.

\textsuperscript{154} These industries are telephone and communication equipment; air transportation; electric, natural gas, and sanitary services; commercial banks; other credit institutions; life, fire, marine, and casualty insurance; real estate; oil and mineral royalty traders; services—personal services; other services—equipment rental, computer; services—automotive repair; services—motion pictures; and non-operating establishments.
CONCLUSION

By “softening” the application of asset apportionment, a comprehensive thin capitalization approach allows tax policy makers to realize a necessary balance between the need for revenue maintenance and the encouragement of desirable outbound and inbound direct investment. Under this approach, a rule of non-deductibility is applied equally in both contexts to intragroup debt and the external debt of a multinational group. Specification of a leverage ratio defines the outer limit on the sourcing of interest expense associated with either form of debt. For multinational groups that exceed the specified safe-harbour ratio, interest expense can still be sourced on a tax-deductible basis to the extent that the leverage ratio of a particular member of the group, on an unconsolidated basis, does not exceed the worldwide consolidated ratio or a modest multiple of that ratio. The application of asset apportionment is thereby limited to this legislative exception.

For the reasons that we have suggested here, we believe that a comprehensive thin capitalization approach is the inevitable outcome of the attempt to balance maintenance of the revenue base and the pursuit of the maximization of national welfare by tax policy makers.155 The kind of multilateral cooperation that is required to realize a fully coordinated asset apportionment is simply unrealistic in the short or medium term. Indeed, it is unclear to us why the investment in the political capital that would be necessary to realize a multilateral solution to the allocation of interest expense should be limited to this modest legislative return. As a decidedly incremental response, the most appealing feature of a comprehensive thin capitalization approach may be its broad conceptual consistency with transfer-pricing practices in the context of both outbound and inbound direct investment. If an effort is to be made to muster the political capital required for a multilateral response to the allocation of interest expense, policy makers should consider jettisoning the whole transfer-pricing edifice in favour of a broader multilateral allocation of income from foreign direct investment.156
