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What's BEPS got to do with it? Exploring the effectiveness of thin capitalisation rules

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Abstract

In October 2015, the OECD made a best practice recommendation in Action 4 of its BEPS project, suggesting a Fixed Ratio Rule in place of thin capitalisation rules. This review was almost 3 decades in the making, with the most recent OECD report on thin capitalisation rules published in 1986, which omitted guidance on how these rules could best be designed.

Thin capitalisation rules' strong emphasis on revenue base protection has resulted in their exponentially increasing popularity internationally since tp-4.8.7u 2i1[(in) 0 Tc 0 Tw ( )Tj 013.i

The optimisation model developed in this paper shows that the OECD's Fixed Ratio Rule is more effective than the current regime of thin capitalisation rules at protecting the tax revenue base from the more aggressive multinational enterprises (MNEs). However, the model also indicates that it is ultimately more effective to align the tax treatment of intercompany funding to eliminate the 'underlying disease' (the tax incentive for thin capitalisation), rather than adopting rules that mitigate the 'symptom' (such as the OECD's Fixed Ratio Rule).

This research presents a unique contribution to the literature by simulating complex cross-border intercompany tax planning strategies.

1. INTRODUCTION

For nearly a century, tax authorities have been developing international principles for tax treaties in attempts to address the problem of international tax coordination, with their focus evolving into designing international principles to prevent both the double taxation and double non-taxation of MNE income[2].

In October 2015, the OECD made a best practice recommendation in Action 4 of its BEPS project, suggesting a Fixed Ratio Rule in place of thin capitalisation rules. This review was almost 3 decades in the making, with the most recent OECD report on thin capitalisation rules published in 1986[3], which omitted guidance on how these rules could best be designed[4].

In response to whether the Australian Government has actioned the OECD's BEPS Recommendation on Action 4, the Treasury noted that Australia has already tightened its Thin Capitalisation rules[5]. However, this position is contrary to commentary from both practitioners[6] and academics[7], who note that tightening the safe harbour rule should not be conflated with strengthening the overall effectiveness of the thin capitalisation regime and, in turn, the ability of a jurisdiction to protect its tax revenue base.

While the OECD makes a distinction between combating BEPS and reducing distortions between the tax treatment of debt and equity[8], it is clear that both the OECD's BEPS project and the thin capitalisation rules' raisons d'être are primarily concerned with protecting national tax revenue bases[9]. However, it is the decision of

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[2] 'The issue of international tax coordination has often been seen mainly as a problem of alleviating double taxation. This problem arises because most countries insist on their right to tax all income originating within their borders as well as all income earned by their residents. However, since some countries have found it in their interest to play the role of "tax havens", the international tax coordination problem may often be one of preventing tax evasion rather than a problem of double taxation': PB Sørensen, 'Issues in the Theory of International Tax Coordination' (Bank of Finland Discussion Papers No 4/90, 20 February 1990), 7

[3] OEiilent2 0 9d7ht7 0 Td (8TfTj 0.613 0 Td ( )Tj 2 0 9d3 (i)511 (t)5 (i)5 Tc 0 Twxi)5 Tc 0 2 Tc]TJ 0.07 (0 2 Tc]TJ 0

the revenue authorities to create a cross-border tax-induced debt bias which actually results in said tax base erosion.[9]

The current international tax framework incentivises the location of expenses in higher tax jurisdictions and income in lower tax jurisdictions as it can result in significant tax minimisation. Multinational enterprises (MNEs) can shift expenses to, and income from, soure1nd (m)19.2 (,)2 (s b20o)2 (8. (e1n)u13i.6 (e)11.2 ( )-s8.2 (ax)660

A significant gap in the literature is that thin capitalisation rules' impact on tax planning has only been analysed on a piecemeal basis, and studies have not yet adequately considered the impact of thin capitalisation rules on MNEs' investment decisions. Notably, Ruf and Schindler observe that there are too few empirical studies investigating the effect of thin capitalisation rules on investment.[27] Similarly, Merlo, Riedel and Wamser noted that 'the question of how thin capitalisation rules are related to real investment activities of MNEs has been widely neglected in the literature'.[28]

However, investments by an MNE can be grouped as either real or 'pure paper'. In this context, despite the literature already analysing the isolated impacts of 'pure paper' profit shifting induced by international tax differences,[29] the literature has not yet focussed on the behavioural responses induced by thin capitalisation rules on MNEs 'pure paper' investment decisions. This analysis would likely form a key litmus test of whether a particular reform eliminates or encourages distortions between debt and equity financing.

Further, there is little emphasis on eliminating distortions in the tax treatment of cross-border intercompany passive income.[30] This paper posits that an unequal tax treatment of passive income involving certain categories of otherwise fungible intercompany debt and equity financing, licensing and finance leasing activities, can distort economic choices about commercial activities and encourage tax planning behaviours

The reasoning for this is two-fold; first, intercompany dealings are fungible and mobile.[31] Second, a parent company would likely be neutral to these different funding options[32] particularly if they constitute purely financing activities that are determined and allocated by corporate treasury centres and eliminated on consolidation for accounting purposes.[33]

An underlying assumption in this paper is that as long as an MNEs can benefit from tax planning opportunities presented by existing rules including, inter alia, the arm's length standard, thin capitalisation rules, debt/equity rules, withholding taxes and

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foreign tax relief, there is a tax incentive to adjust its behaviour to maximise overall deductions in higher-tax jurisdictions to minimise the group-wide tax liability and, in turn, the overall net profit after tax.

The author recognises that not all MNEs will fall within this category in practice. Accordingly, this study is only concerned with MNEs that are responsive to cross-border tax-induced distortions.

Assuming that MNEs which exhibit tax planning behaviour make tax decisions as a global group with the objective of minimising total tax payable worldwide.[34] Such tax planning is generally encouraged by tax professionals and is statutorily, administratively and judicially condoned.[35] In other words, such an MNE is 'tax-minimising', albeit with varying degrees of aggressiveness.

Accordingly, the behaviourally distortive effects of existing and proposed tax rules relating to cross-border intercompany activities are of primary concern in this study. Specifically, the focus of this paper is on MNE's cross-border intercompany transactions relating to passive or highly mobile income; specifically how tax distortions affect MNE decisions on the funding mix between intercompany financing, licensing and finance leasing activities.

As such, this paper proposes restricting the tax deductibility of these otherwise

Figure 1: Various types of intercompany payments

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Perhaps the most controversial aspect of the funding bias concept is that royalties are fungible. However, this paper does not suggest that all intercompany royalties are equivalent and fungible with other financing activities. Rather, the scope is limited to some categories of licenses or royalty financing ostensibly similar in their capacity to provide access to an underlying asset with the ability to provide a revenue str (termed 'royalties') but not dissimilar in operation to intercompany debt or equity financing or a finance lease.

It is noteworthy that, as observed by Van [n] historically, excess royalties were assumed by some OEEC delegates to be classified as

financial transactions … affiliated leasing transactions could replicate the consequences of related lending.[42] Nonetheless, Benshalom observes that the mobility of intercompany activities erodes the source jurisdiction's tax base from both the perspective of intangible and tangible manufacturing and merchandise activities.[43]

So, while the literature implicitly contains support for the proposition that cross-border

> global tax liabilities through external debt financing, but we cannot observe their using internal debt to generate interest deductions in high-tax countries and interest income in low-tax countries … intrafirm transactions are nontrivial and may even exceed the avoidance opportunities with third parties[47]

In the absence of a requirement to fully disclose their intercompany transactions in financial statements, cross-referencing the information reported to taxing authorities and reported in financial statements is a highly challenging task.[48] Further, if a subsidiary is a private company it does not even need to disclose comprehensive financial statements in the source jurisdiction.[49] Accordingly, this presents a gap in the literature.

Generally, quantitative evaluations are conducted utilising regression based evaluation methods and general equilibrium modelling. For example, there is a growing theoretical literature on the relationship between tax planning and investment locations, and its implications for tax policies.[50] There is also a rich literature which utilises empirical data in this context, extensively considering the relationship between MNE leverage and taxation with US, Canadian and European Union (particularly German) data.[51]

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[47] KS Markle and DA Shackelford, 'Cross-Country Comparisons of the Effects of Leverage, Intangible Assets, and Tax Havens on Corporate Income Taxes' (2012) 65 Tax Law Review 415, 417–32.

[48] Commentators such as De Simone and Stomberg observe that '[f]inancial reporting for income taxes is so complex that even sophisticated financial statement users often ignore detailed tax disclosures' and 'taxation is often viewed by the market as beyond meaningful analysis': De Simone L and Stomberg B, 'Do Investors Differentially Value Tax Avoidance of Income-Mobile Firms?' (Working Paper, University of Texas at Austin, June 2012), 2. Consolidated accounts undergo intercompany eliminations so are not helpful in this regard. While some MNEs provide some detail regarding their intercompany transactions in their segment reports, this is not a requirement across the board. See further, 'this large shift in pre-tax income without any corresponding change in revenues suggests the presence of significant intercompany payments—likely royalty payments attributable to the transfer of intellectual property into Ireland': K Balakrishnan, J Blouin and W Guay, 'Does Tax Aggressiveness Reduce Financial Reporting Transparency?' (Working Paper, Wharton School, University of Pennsylvania, 20 September 2011), 29.

[49] For example, in the financial year ending 2014, Google Australia Pty Ltd's disclosure omitted itemising over $35 million in expenses from its financial statement and the corresponding notes, not even categorising these expenses as 'COGS' and/or 'Other expenses'. Further, Google Australia Pty Ltd's intercompany financing activities were presumably classified as 'operating' activities, as the 'financing' section of the cash flow statement was entirely blank, with no details afforded in the notes.

[50] Q Hong and M Smart, 'In Praise of Tax Havens: International Tax Planning and Foreign Direct Investment' (2010) 54(1) European Economic Review 82; see references cited therein, including: H Grubert and J Slemrod, 'The Effect of Taxes on Investment and Income Shifting to Puerto Rico' (1998) 80 Review of Economics and Statistics 365–73; A Haufler and G Schjelderup, 'Corporate Tax Systems and Cross-country Profit Shifting' (2000) 52 Oxford Economic Papers 306–25; J Mintz and M Smart M, 'Income Shifting, Investment, and Tax Competition: Theory and Evidence from Provincial Taxation in Canada' (2004) 88 Journal of Public Economics 1149–168; S Bucovetsky and A Haufler, Tax Competition When Firms Choose Their Organizational Form: Should Tax Loopholes For Multinationals Be Closed? (Technical Report 1625, CESifo, 2005); J Slemrod and JD Wilson, 'Tax Competition with Parasitic Tax H

Substantially less developed is the literature on the effect of taxation on leverage in a multilateral context, with 'nxn countries'[52]. Huizinga, Laeven and Nicodème present the primary exploration of whether MNEs make multilateral capital structure decisions based on the tax rates faced by various subsidiaries.

International tax

Figure 2: The modelled 'multiverse' of policy iterations and MNE tax aggressiveness

This hypothetical approach is preferable due to the accessibility issues associated with collecting various revenue authorities' corporate tax return data and the limitations of using accounting data. Even if accounting data was gathered through annual reports this approach is problematic given the difference between accounting profit and taxable income. Specifically, MNEs start with accounting profit and then make adjustments to accounting profit[61] to reach their taxable profit.[62] Accordingly, it is difficult to glean intercompany tax-related information from financial statements.

Further, these difficulties are exacerbated by recent amendments to the Corporations Act 2001, enacted 28 June 2010, which have removed the requirement for companies to include full unconsolidated parent entity financial statements in their group annual financial reports under Chapter 2M of the Corporations Act 2001 where consolidated financial statements are required.[63] This renders it even more difficult to discern intercompany tax-related information. Also, there is currently no requirement to produce 'general purpose' financial reports in subsidiary locations where the MNE determines that that subsidiary is not a 'reporting entity'. Further, given the gaps in reporting requirements and the fact that some items are off balance sheet to begin with, it is highly difficult to undertake a meaningful analysis of data from financial statements in this context. This is made more problematic by the absence of official

The remainder of this section outlines and justifies the optimisation model. Specifically, it expresses MNEs' decisions to utilise various conduit financing structures to minimise taxation for the overall group in the form of an algorithmic expression.

The optimisation model is developed using the IBM ILOG CPLEX for Microsoft Excel ('CPLEX') software.[65] Microsoft Excel is utilised to generate the data, delineate the parameters and display the solution in a multidimensional format, while the CPLEX software is used to express and solve the optimisation problem. Quantitative analysis facilitates a deeper understanding of the interplay of effects determining tax-induced distortions than may not be observable with a qualitative analysis alone.

The 'objective function' is to minimise the total tax payable by the MNE on global operations. The 'constraints' are the four groups of otherwise fungible intercompany debt and equity financing, licensing and finance leasing activities. The model can then be fine-tuned by overlaying various parameters.

Specifically, the hypothetical MNE modelled by this paper has entities in four jurisdictions; two high-tax jurisdictions (one capital exporter and one capital importer; specifically, a US parent and Australian subsidiary) and two low-tax jurisdictions (one non-treaty country and one treaty country, in Hong Kong and Singapore, respectively).[66]

Given its focus on intercompany funding options, this optimisation model focusses on funding constraints and regulatory limitations directly relevant to intercompany funding decisions; namely, withholding taxes, thin capitalisation rules and foreign tax credits. This ensures the model is complex and flexible enough to represent both funding structure decisions and regulations influencing these behavioural responses.

The baseline model in the optimisation problem consists of the current global tax framework and its treatment of fungible funding options. It is necessary to develop a baseline model because modelling in this area has not yet focussed on the fungibility of intercompany funding options. So far, the predominant focus in the literature has been on an economy-wide scale[67] with firms identified with, for example, one unit of

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[65] CPLEX is a sophisticated software appropriate for both building and solving optimisation problems, and for interfacing with Microsoft Excel; 'IBM® ILOG® CPLEX® for Microsoft® Excel is an extension to IBM ILOG CPLEX that allows you to use Microsoft Excel format to define your optimization problems and solve them. Thus a business user or educator who is already familiar with Excel can enter their optimization problems in that format and solve them, without having to learn a new interface or command language. CPLEX is a tool for solving linear optimization problems, commonly referred to as Linear Programming (LP) problems': IBM ILOG CPLEX V12.1 IBM ILOG CPLEX for Microsoft: Excel User's Manual, 12 <ftp://public.dhe.ibm.com/software/websphere/ilog/docs/optimization/cplex/cplex_excel_user.pdf>.

[66] In the Australian context, it appears that Singapore is a relatively more popular jurisdiction than other well-known low-tax jurisdictions such as Ireland in terms of the volume of intercompany payments made by Australian companies: E Butler and G Wilkins, 'Singapore, Ireland Top Havens For Multinational Tax Dodgers', Sydney Morning Herald (online), 1 May 2014 <http://www.smh.com.au/business/singapore-ireland-top-havens-for-multinational-tax-dodgers-20140430-37hzi.html>.

[67] See, for example, O Jacobs and S Spengel, 'The Effective Average Tax Burden in the European Union and the USA: A Computer-based Calculation and Comparison with the Model of the European Tax Analyzer' (ZEW Discussion Paper No 99-24, Centre for European Economic Research (ZEW) and University of Mannheim, September 1999).

capital with different firm types linked to different types of capital whereby MNEs dispose of as unit of mobile capital.[68] Even when the analysis is constrained to a

For ease of reference, the abbreviations used throughout the remainder of this section are summarised in Table 1 below:

Table 1: Abbreviations used in formulation of model

Abbreviations	
0 2 $ 6 $	Net profit before tax for company ' E' at the start of the period
0 2 $ 6 %	Net profit before tax for company E at the end of the period
N	Headline corporate income tax rate in country ' E'
TTP	Total tax payable
N	The rate of return on debt financing from company E to company ' F'
&	The balance of debt financing provided from company E to company ' F'
+	The interest received by company E (or, if negative, interest paid)
N	The rate of return on equity financing from company E to company ' F'
'	The balance of equity financing provided from company E to company ' F'
8	The dividends received by company E (or, if negative, dividends paid)
N	The rate of return on licensing from company E to company ' F'
%	The balance of licenses provided from company E to company ' F'
4	The royalties received by company E (or, if negative, royalties paid)
N	The rate of return on finance leasing from company E to company ' F'
5	The balance of finance leases provided from company E to company ' F'
2	The finance lease payments received by company E (or, if negative, finance lease payments paid)

4.1 The objective function: Minimising total tax payable

Since this model is only concerned with the intercompany activities conducted to minimise tax, the only relevant constraints relate to these intercompany transactions.[75] 0 2 $ 6 $ is the amount of Net Profit Before Tax (0 2 $ 6) of company E at the beginning of the period; 0 2 $ 6 % is the amount of EBIT of company E at the end of the period; N is the tax rate[76] defined by the government of country E. For simplicity, the 'real' NPBT is a constant for each entity in each jurisdiction and is given as 0 2 $ 6 $. The impact of the sum of intercompany transactions in each affiliate on NPBT is denoted as follows:

$$0\,2\,\$\,6_{\%} = 0\,2\,\$\,6_{\$} + +_{\ddot{U}} + 8_{\ddot{U}} + 4_{\ddot{U}} + 2_{\ddot{U}} \qquad (1)$$

The general optimisation problem is the minimisation of the objective function by adjusting the design variables and at the same time satisfying the constraints. In the present analysis, the objective function is Total Tax Payable (T T P) for the corporate group.

[75] Elements of Section 4 have been elaborated on in detail in a previous paper by the author: Kanyis, above n 53.

[76] While the 'effective tax rate' would arguably be preferable, for simplicity the headline corporate income tax rate is used in this variation of the model.

$$/\ EE\ IE\ O\ A6\ 6\ 2 = \sum_{\ddot{U}@5}^{\acute{a}} 0\ 2\ \$\ 6_{\ddot{U}} \times N_{\ddot{U}}^{\hat{U}} \qquad (2)$$

As illustrated in an earlier paper by the author,[77] the model is set with an initial NPBT at $100 for both affiliates in the high-tax jurisdictions and with NPBT as $0 for the affiliate in the lower-tax jurisdiction.[78]

4.2 The constraints Intercompany financing activities

Since this model is only concerned with the intercompany activities conducted to minimise tax, the only relevant constraints relate to these intercompany transactions, rather than extending to 'real' economic activities.

Accordingly, this optimisation problem is subject to four 'primary constraints'. Each constraint relates to one of the four categories of fungible intercompany funding that constitute the focus of this thesis; namely, debt financing, equity financing, licensing and finance leasing ($\&_{\ddot{U}\acute{Y}}$, $'_{\ddot{U}\acute{Y}}$, $\%_{\ddot{U}\acute{Y}}$ and $5_{\ddot{U}\acute{Y}}$ respectively).[79] These can be characterised as the underlying capital amounts ($(_{\ddot{U}}$). The 'flow' ($(_{\ddot{U}}$) or remuneration derived therefrom constitutes interest, dividends, royalties and finance lease payments ($(_{\ddot{U}}$, $8_{\ddot{U}}$, $4_{\ddot{U}}$ and $2_{\ddot{U}}$ respectively).

This is formulated as follows for each constraint:

$$(_{\ddot{U}} = \sum_{\ddot{U}@5}^{\acute{a}} -_{\ddot{U}\acute{Y}} \times N_{\ddot{U}\acute{Y}}^{\ddot{A}} \qquad (3)$$

Table 2: Overview of withholding tax rates between USA, Singapore, Australia and Hong Kong

Withholding tax rates				
	Interest	Dividends	Royalties	Finance lease payments

highlighted in bold. For example, assuming a high level of participation, the withholding tax rate of dividends from Co C and Co A would be zero percent. It is

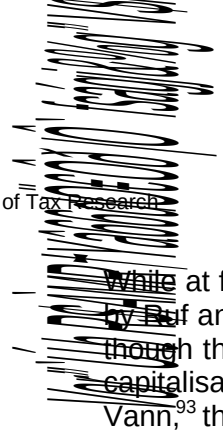
5.1 Variation 1: Tightening Australia's thin capitalisation rules

One of the most surprising findings in relation to the existing system is that the hypothetical MNE is indifferent to the existence and/or variation in thin capitalisation rules. This is because while thin capitalisation rules change the funding mix of entities within an MNE, the TTP remains unchanged.

Specifically, where this variation is modelled with NPBT increments between 0 and 100, the TTP remains the same for each increment of tax aggressiveness, such that the AETR is 26.50 per cent to 30.75 per cent regardless of whether thin capitalisation rules are tightened. In contrast, in the absence of any tax planning the AETR is 34.50 per cent for the hypothetical MNE. So, contrary to policymakers perception that thin capitalisation rules can be made more effective at restricting base erosion by simply tightened the debt-to-equity ratio, this model also finds no impact on TTP.

The model shows no change in TTP from tightening thin capitalisation rules from a debt-to-equity ratio of 3:1 to 1.5:1, as recently implemented by Tax and Superannuation Laws Amendment (2014 Measures No 4) Act (2014).

In addition, capital structure and both the quantum and direction of funds flow remains the same under so-called tightened thin capitalisation rules. In particular, the Australian subsidiary experiences no change in its funding mix between inbound-only, outbound-only, or both inbound/outbound rules. This result seem to be at odds with the literature that tightening thin capitalisation rules would impact MNEs' funding decisions. The a



While at first blush these results may appear unusual, the anecdotal research presented by Ruf and Schindler[91] anticipates this result. This finding is significant because even though there is a growing body of literature challenging the traditional belief that thin capitalisation rules protect the tax revenue base, including Ruf and Schindler[92] and Vann,[93] there is currently no empirical evidence that new FDI is simply financed at or around the debt-to-equity ratio limits set by thin capitalisation rules. Accordingly, this finding could have significant policy implications globally, especially given the worldwide popularity of implementing and tightening thin capitalisation rules.

5.2 Variation 2: Unilateral adoption of the OECD's BEPS recommendation

Shaviro noted that this strict reform would bring the US rules closer to the German earnings-stripping rules.[101] However, there was much opposition to this 'bifurcation' rule. C

rule in comparison to both the existing regime and the OECD's BEPS Recommendation is presented in below Figure 4.

Figure 4: Results of modelling the OECD's Recommendation and an Extended