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An evaluation of interest deduction limitations to counter base erosion in South Africa

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Background: The Organisation for Economic Cooperation and Development (OECD) made a number of recommendations in relation to interest deduction limitations as part of the Base Erosion and Profit Shifting (BEPS) project. In 2016 the South African National Treasury indicated that the interest deduction limitations contained in the Income Tax Act would be reviewed in the light of these recommendations.

Aim: This paper aimed to describe funding structures of companies in South Africa liable for tax and how this relates to other characteristics, including ownership, of the companies.

Setting: The research was performed using data from tax returns submitted by companies liable for income tax in South Africa.

Methods: This paper reports on descriptive analyses of the research conducted.

Results: The results showed that the mean interest-to-earnings before interest, taxes, depreciation, and amortisation (EBITDA) ratio for certain foreign-owned entities differed significantly from that of domestically owned entities.

Conclusion: The results may present evidence of profit-shifting activities. They also highlight trends in interest-to-EBITDA ratios that may be of relevance for future legislative developments. Further related research is required if interest deduction limitations in the South African tax legislation are to be reviewed in light of the OECD proposals.

Introduction and background

As part of the Organisation for Economic Cooperation and Development (OECD)/Group of Twenty (G20) project on Base Erosion and Profit Shifting (BEPS), the OECD identified the deductibility of interest for purposes of calculating taxable profits as one of the areas that required attention (to counter BEPS) (OECD 2013). This led to an analysis under Action 4, 'Limiting Base Erosion Involving Interest Deductions and Other Financial Payments', of the OECD/G20 BEPS Project.

The final Action 4 Report, issued during 2015, notes that:

> The use of third party and related party interest is perhaps one of the simplest of the profit-shifting techniques available in international tax planning. The fluidity and fungibility of money makes it a relatively simple exercise to adjust the mix of debt and equity in a controlled entity. (OECD 2015:15)

It contains recommendations (best practice) for governments to implement proposed measures to address the risks posed to the corporate tax base by interest payments and the related tax deductions. The suggested approach includes a general interest limitation (core rule) based on an interest-to-profit ratio. This is coupled with *de minimis* exclusion rules, exceptions for highly geared groups, and specific anti-avoidance rules to target identified instances not addressed by the general interest limitation rule (OECD 2015).

The South African Income Tax Act (Act 58 of 1962) (the Act) contains certain measures aimed at countering the risk of base erosion through interest deductions. Since its introduction, Section 31 of the Act has contained anti-avoidance provisions in the form of transfer pricing adjustments that apply to interest incurred at excessive rates or interest paid on excessive amounts of debt (thin capitalisation) by taxpayers in relation to foreign funding by connected persons. During 2014 and 2015, focused anti-avoidance rules that limit the deduction of interest incurred in respect of debt used to fund certain reorganisation transactions (Section 23N), as well as interest paid to connected persons where such interest is not taxed in South Africa in the hands of such recipients (Section 23M), were introduced into the Act. Both of these provisions apply an interest limit based

on the ratio between the particular interest and a tax proxy for interest-adjusted earnings before interest, taxes, depreciation, and amortisation (EBITDA) (National Treasury 2014b). The deductible interest ratio applied in these provisions is based on a formula that varies according to changes in the repurchase rate set by the South African Reserve Bank, and has a ceiling rate of 60% of the interest-adjusted EBITDA proxy (National Treasury 2014b). In addition, a withholding tax on interest paid to foreign persons was introduced with effect from 01 March 2015, as a method of countering base erosion (National Treasury 2013).

Even though South Africa is not a member of the OECD, it participated actively in the OECD/G20 BEPS project. The recommendations stemming from Action 4 should therefore be considered by the National Treasury and the South African Revenue Service (SARS). In this regard, a number of key differences exist between the current South African measures to address the risk of base erosion from interest deductions, as discussed above, and the best practice approach suggested by the OECD. These include that the South African reliance on the arm's length approach to provide an overall protection mechanism is relatively high, while the OECD questions the effectiveness of this approach (OECD 2015). In addition, the South African measures implemented focus on interest paid in respect of related party debt, while the OECD's proposal suggests an overall interest deduction limitation that would apply to both multinationals and stand-alone domestic entities (OECD 2015) but notes that countries should decide what is best for their economies. The range of acceptable levels of interest in relation to profits suggested by the OECD (10% – 30%) appears to be significantly lower than those contained in specific South African anti-avoidance provisions. From this brief analysis, it is evident that the implementation or partial implementation of the OECD's recommendations from Action 4 is likely to result in stricter interest deduction limitations in South Africa. In the 2016 Budget Review, the National Treasury highlighted heavily geared financing structures that lead to excessive interest deductions and erosion of the corporate tax base as being of concern. If further measures are introduced to limit the tax deductibility of interest more closely aligned with the OECD's recommendations, this may confirm the above view regarding stricter limitations (National Treasury 2016).

However, the limitation of interest deductions and related anti-avoidance rules can have a direct impact on returns earned by investors (Haufler & Runkel 2012). If this is the case, it might influence the attractiveness of South Africa as an investment destination. The need to increase investment and attract foreign direct investment is clear, and has been recognised by government (Department: Trade and Industry 2016; South African Government 2016). Such investment is a source of foreign currency, and multinational corporations can provide technological spillovers and skills transfers that increase productivity and drive economic growth.

A fine balance needs to be struck between protecting the tax base by considering the recommendations flowing from Action 4 of the OECD/G20 BEPS Project and creating an attractive environment that will encourage investment activity to contribute to the growth of the South African economy. To strike this balance, a thorough understanding of the relationship between funding structures of companies operating in South Africa and the characteristics of such companies must be gained. To provide a balanced perspective on the position of South African companies and the effect of the OECD recommendations in this context, the research reported in this article aimed to answer the following research question:

> What describes the funding structures of different types of entities, in particular foreign-owned entities and domestically owned entities, and how is it related to other characteristics of the firms?

Research methodology

The above question was primarily considered through descriptive analysis of data contained in a data panel constructed using information from corporate tax and employees' tax returns submitted by companies as described by Pieterse, Kreuser & Gavin (2016) (this data panel was described as the CIT-IRP5 Panel Data). This panel contains an observation for each year of assessment for each company that submitted a tax return from 2008 to 2016. Other than the generation of new variables from the existing data in the panel to calculate certain financial ratios, no other modifications were made to the panel data for purposes of the research.

To compare the positions of foreign-owned and domestically-owned companies, the data are described for three categories of taxpayers identifiable in the panel, namely entities indicated as being foreign-owned,[1] foreign branches[2] and all entities that do not fall within these two categories (assumed to be domestically owned). The distinction can only be drawn using information obtained from the revised corporate tax return (ITR14), which came into use from May 2013, as the information was not previously requested from taxpayers in the IT14 return. The research was therefore only performed in respect of companies that filed ITR14 returns. This inherently limits the results to returns submitted from May 2013 to 2016. Since there were only a limited number of returns included for the 2016 year when the panel data was compiled, the information pertaining to the 2016 year was also omitted. As a result, the returns primarily relate to years of assessment ending during 2013 to 2015. The findings described in section 5 below only relate to this

1.The field in the ITR14 requires a taxpayer to indicate whether it is a controlled group company in relation to a foreign company. A foreign entity would be the controlling group company in relation to a South African company if that foreign entity, together with controlled group companies, holds at least 70% of the equity shares and voting rights of the South African entity (refer to definition of 'group of companies' in Section 1 of the Act). The South African controlled group company is taxed as a person separate from its controlling group company.

2.The field in the ITR14 requires a taxpayer to indicate whether the return was submitted in respect of a branch, permanent establishment or agency of a foreign company. The branch is not a separate taxpayer from the company that it forms part of. The foreign company is liable for tax in South Africa on the taxable income earned from a South African source. In instances where the branch represents a permanent establishment, an allocation of profits towards the permanent establishment is required.

portion of the population. The number of observations for tax returns submitted by the respective categories of entities is presented in Table 1.

The theoretical underpinning as well as the variables generated and reports drawn based on these underpinnings are discussed in section 3.

Literature review and approach to analysis

Firms' operations are generally financed from two main sources, namely debt and equity. In terms of the pecking order theory (Myers & Majluf 1984), managers will tend to prefer debt over equity, so as to avoid 'external ownership' in the company. Advantages of debt include increased tax shields, while the downside may be that high debt levels increase the risk of financial distress. From a tax perspective, debt financing is normally preferred because interest payments reduce the taxable income of a company while dividends and share repurchases do not (Langedijk et al. 2014). This often encourages excessive debt financing, which results in complex financial transactions and high leveraged ownership, which would not exist under normal business circumstances (Hemmelgarn & Nicodeme 2010; Lloyd 2012; Shackleford, Shaviro & Slemrod 2010; Shaviro 2009).

Besides the general debt bias from which both domestic and multinational entities can benefit, the preference for debt funding often increases in circumstances where the funding is advanced directly or indirectly by an entity affiliated to the borrowing company. For example, the owner or shareholder may be indifferent as to the choice of instrument, given that this does not necessarily impact on the company's risk exposure (Buettner et al. 2012; Gajewksi 2013). This often results in minimal equity funding and high levels of internal debt, known as thin capitalisation, to enjoy the benefits of the tax deductibility of the interest on debt (Buettner, Overesch & Wamser 2016; Gopalan, Nanda & Seru 2007). In this regard, multinationals can strategically place (shift) debt in high-tax jurisdictions so as to reduce taxable profits that are subject to relatively high effective tax rates in comparison with affiliates in other jurisdictions (OECD 2015).

Over the years, many jurisdictions have implemented thin capitalisation rules that effectively limit the deduction of interest in respect of affiliated entity debt (Buettner et al. 2012, 2016; Wamser 2014). The OECD (2015) notes that methods to counter base erosion through interest deductions include transfer pricing mechanisms, such as arm's length tests, and withholding taxes. Thin capitalisation mechanisms generally involve the use of explicit threshold levels for the debt-to-equity ratio (Buettner et al. 2016). Erosion of the tax base through interest deductions may also be prevented by provisions allowing specified percentages of interest or limitations on the amount of interest deductible for tax purposes (OECD 2015). Such measures have been implemented by a number of European countries since 2008, including Germany, the Netherlands, the United Kingdom, and Italy. These measures are often not limited to interest in relation to debts from affiliated persons only, but also apply to interest on external debt (Giacometti & Meloni 2008; Knauer & Sommer 2012; Marino & Russo 2008; Saparoea 2009). In addition, the OECD (2015) states that countries may consider introducing rules targeted at interest arising from specific transactions.

For purposes of corporate finance and management, the debt-to-equity ratio is an indication of the solvency and level of financial gearing of an entity (Els et al. 2010:70). To optimise shareholder value, an optimal mix between debt and equity is required (Els et al. 2010:76). As such it is submitted that a debt-to-equity ratio provides valuable information about the capitalisation of an entity from a commercial perspective. Traditionally many jurisdictions have used a balance sheet approach (normally a ratio between debt and equity) as an indicator of whether an entity is thinly capitalised or not (Webber 2010a:687). This approach provides taxpayers and tax authorities with a method that is relatively simple to apply (OECD 2015:21; Webber 2010a:685).

However, the balance sheet approach has been criticised, as it does not take into account the productivity of a firm (Mardan 2013:2). This shortcoming of a fixed balance sheet ratio can be addressed by using an earning-stripping approach to limit interest deductions. Prescribing a limit by reference to EBITDA, as opposed to the relative amount of debt-to-equity, has the advantage that it is linked directly to the tax base that needs to be protected (Barnes 2014). In contrast, if a balance sheet approached is followed, the absolute acceptable level of debt, and therefore interest deductions, can be increased by increasing the equity amount (Von Brocke & Perez 2009:29; Webber 2010b:19).

Miesel, Higinbotham and Yi (2003:2) posit that multinational entities might enter into transactions that independent parties would not normally enter into – for example, funding entities, whether through debt or additional equity, that are loss-making or less profitable but that have some strategic importance – and thus make it difficult to achieve comparability analysis as suggested by OECD guidelines. Yao (2013) agrees with Miesel et al. (2003) that the arm's

TABLE 1: Classification of observations submitted using ITR14 returns.

Entity classification	2013	2014	2015	Total
Entities that have a foreign controlling group company (hereafter described as 'foreign-held companies')	2759	2887	452	6098
Entities that are branches of foreign companies (hereafter described as 'South African branches of foreign companies')	16 070	11 941	549	28 560
Remaining companies (hereafter described as 'entities other than foreign-held companies or South African branches' or domestically owned)	855 511	767 011	244 071	1 866 593
Total observation	**874 340**	**781 839**	**245 072**	**1 901 251**

length approach is aimed at increasing tax revenues in a perfect market. Related parties may be willing to increase their equity contributions to an investee in order to create a larger base for advancing debt to such an entity. Even though this would make the return on investment low or unproductive, it might hold certain tax benefits for an investor as a result of the deductible interest incurred on the debt. The tax base can therefore still be eroded even though the debt-to-equity ratio appears acceptable. Multinational entities may be willing to enter into such funding arrangements for this purpose. Given this, different entities of the same group may be allowed different levels of interest deductions depending on their location and the tax rates applicable, even if profit levels are similar, which could lead to base erosion (Barnes 2014).

In addressing the potential weaknesses of balance sheet methods and debt-to-equity ratios the OECD (2015) indicates that a best practice approach is based on a fixed ratio rule which limits an entity's net interest deductions to a fixed percentage of its profit, measured using EBITDA.

Following on the aforementioned discussion and due to the potential design flaws of balance sheet methods and other rules to counter thin capitalisation and excessive interest deductions, the descriptive analysis considers interest coverage ratios, specifically the interest-to-EBITDA ratio, for the companies included in the panel data. Hence this ratio was generated for purposes of the descriptive analysis based on firms' accounting profits, rather than profits for tax purposes, adjusted for interest and depreciation.

The effect of using accounting data, as opposed to tax data, was considered for all EBITDA ratios. A comparison of the EBITDA amounts calculated using accounting and tax data was also prepared. The comparison between EBITDA calculated using tax and accounting data showed that for both South African branches of foreign entities and domestically owned companies, EBITDA calculated using tax and accounting data did not differ materially for at least 80% of the population, with some exceptions at the outer ends of the population in both directions (i.e. accounting EBITDA exceeding tax EBITDA, and in other instances, tax EBITDA exceeding accounting EBITDA). The variance was more notable in the case of foreign-held companies.

Results and discussion

The mean interest-to-EBITDA ratio for the overall population rendered results that were significantly different from ratios that may have been anticipated based on norms such as the ratio applied in section 23M or those suggested by the OECD. Further analysis revealed that this was caused by a number of factors, including negative ratios and entities with a low profit base compared with their net interest cost. Certain categories of observations that had characteristics that would cause the interest-to-EBITDA ratio to be different from the anticipated ratio were identified. Hence, the population was disaggregated to separate it into categories of observations that would have a distortionary effect on the interest-to-EBITDA ratio, and ultimately to produce a residual category of observations that could be viewed as normal entities (i.e. not falling within any of the exceptional categories identified) in respect of which meaningful analysis could be performed.

The categories into which the population was disaggregated are the described below.

Exceptional category 1 – observations with a negative interest-expense-to-EBITDA ratio: An entity will have a negative interest-to-EBITDA ratio if the denominator (EBITDA) is negative. An analysis of this category of entities revealed that this was the case for mainly two groups of entities. Firstly, an entity that borrows funds and on-lends this to earn interest income is likely to have a negative EBITDA (representing operating costs incurred) due to the fact that its primary revenue source (interest income) is excluded from the EBITDA indicator. This scenario will arise if the entity acts as a conduit for funds. The second type of entity is one that incurs interest expenditure but does not have any operations income (turnover). The presumption exists that this class of entity is likely to be a start-up business that is incurring interest costs.

Exceptional category 2 – observations with a positive interest-expense-to-EBITDA ratio but negative total equity balance: The fact that an entity has a positive interest-to-EBITDA ratio indicates that the entity was profitable (in EBITDA terms) for the current period or tax year. However, the fact that the entity has a negative total equity balance indicates that the entity was at some stage in the past not profitable and therefore recorded accumulated losses that caused the total equity balance to be negative. The high interest cost incurred by these entities compared with the level of profitability would suggest that this entity is in a stage of recovery, and that the interest-to-EBITDA ratios may therefore be distorted while this recovery is underway. However, these observations were clearly distinguishable based on the high interest-to-EBITDA ratios.

Exceptional category 3 – observations with a positive interest-expense-to-EBITDA ratio, positive where interest income exceeds interest expenditure: These entities are not in a net interest-paying position. The interest-to-EBITDA ratios, which the OECD suggests should be used as a basis for interest deduction limitations, would therefore be negative and distort the overall view of the population. These entities were therefore excluded from the normal entities category. This category should include entities that do not have significant levels of debt, but that do have cash reserves. The observations included in this category are likely to overlap with the exceptional category 2 identified for the purposes of the debt-to-equity analysis.

Normal entities: Any observations remaining in the residual part of the population after excluding the above exceptional

items were classified as normal entities. These entities represent entities with a positive net interest-cost-to-EBITDA ratio that have a positive total equity balance. The descriptive analysis was performed in respect of these entities, hereafter referred to as normal entities.

Table 2 provides an overview of the composition of the population into the four categories explained above and only presents entities with some form of performance (profitability), whether this was positive or negative.

The mean interest-to-EBITDA ratios for the normal entities category are provided in Table 3. This forms the basis for the subsequent analysis of interest-to-EBITDA ratios in the remainder of this article. On face value the mean interest-to-EBITDA ratio for foreign-held companies is higher than the same ratio for domestically owned companies. In order to gain an understanding of this finding, the normal entities category was also divided into percentiles to describe the distribution of the mean across the entities.

In addition to describing the distribution of the mean interest-to-EBITDA ratios, the mean interest-to-EBITDA ratios for various sizes of businesses were also disaggregated. In order to present more meaningful information, the respective mean ratios were presented for a number of percentiles in each category. Turnover was used as an indicator of the size of the business. The thresholds used were R1 million (based on the threshold to qualify for turnover tax) and R20 million (based on the threshold to be classified as a small business corporation in terms of section 12E of the Act). The results of this disaggregation are provided in Table 4.

Discussion of the overall level of interest-to-EBITDA

The basis level of interest limitation in Section 23M(3)*(b)* is set at 40%, which may be adjusted upwards or downwards depending on the repurchase rate. The OECD proposed a limit of between 10% and 30% (OECD 2015). Previous statistics released by Statistics South Africa indicated that interest-to-EBITDA ratios ranged between 10% and 15% (National Treasury 2014a). It is submitted that Table 4 contributes to the understanding of the levels of interest-to-EBITDA of South African companies. This information would be of value if policymakers were to consider lowering the threshold to be in line with the level of interest suggested by Statistics South Africa, which appears to be in line with the OECD recommendations. Table 3 indicates that approximately 50% of normal companies have interest-to-EBITDA ratios of approximately 10% or lower. However, companies between the 50th and 80th percentiles have interest-to-EBITDA ratios ranging between 10% and 40%.

TABLE 3: Distribution of mean interest-to-EBITDA ratios.

Distribution	Foreign-held companies	South African branches of foreign companies	Domestically owned companies
Mean interest-to-EBITDA ratio	58%	38%	53%
10th percentile	0.3%	0.4%	0.4%
25th percentile	1.9%	2.7%	3.1%
50th percentile	9.3%	10.4%	11.2%
75th percentile	33%	29%	31%
81.25th percentile	43%	41%	41%
87.5th percentile	66%	62%	59%
93.75th percentile	120%	98%	93%
95th percentile	170%	101%	100%
99th percentile	1173%	422%	404%

TABLE 2: Breakdown of population to describe interest-to-EBITDA ratios.

Categories of entities	Foreign-held companies	South African branches of foreign companies	Domestically owned companies
Exceptional category 1 – observations with a negative interest-expense-to-EBITDA ratio	1586	970	66 612
Exceptional category 2 – observations with a positive interest-expense-to-EBITDA ratio but negative total equity balance	408	495	37 989
Exceptional category 3 – observations with a positive interest-expense-to-EBITDA ratio, positive where interest income exceeds interest expenditure	1390	632	45 187
Normal entities	1377	1470	115 418
Total number of observations in population	**4761**	**3567**	**265 206**

TABLE 4: Mean interest-to-EBITDA ratios according to entity size.

Distribution	Foreign-held companies	South African branches of foreign companies	Domestically owned companies
Mean interest-to-EBITDA ratio	58%	38%	53%
Turnover < R1 million	**442% (25)†**	**117% (68)†**	**199.7% (6894)†**
50th percentile	57%	74%	58%
75th percentile	306%	100%	98%
90th percentile	1 313%	238%	151%
Turnover > R1 million, < R20 million	**91% (216)†**	**34% (1111)†**	**43% (85 824)†**
50th percentile	23%	10%	10.5%
75th percentile	53%	26%	27.8%
90th percentile	119%	56%	60.2%
Turnover > R20 million	**43% (1136)†**	**29% (291)†**	**45% (22 700)†**
50th percentile	8%	8.5%	9.8%
75th percentile	28%	27%	25%
90th percentile	72%	133%	57%

†, Number of observations in brackets.

This would suggest that the current level of interest limitation threshold is likely to be appropriate in the South African context, given the large number of taxpaying companies that have interest-to-EBITDA ratios in the range between the OECD's suggested threshold (10%) and the current South African threshold (calculated from a basis rate of 40%). A reduction in the threshold to 10%, as suggested by the OECD, will impact on approximately 25% of taxpaying South African entities. A further important observation is that up to the level of an interest-to-EBITDA ratio of approximately 40% there is no significant difference between the mean ratios of the three categories of entities. No clear evidence of manipulation of interest cost is suggested by this finding.

The information in Table 4 suggests that this observation holds true for entities with turnover exceeding the R1 million threshold (with the exception of foreign-held companies in the bracket between R1 million and R20 million, discussed below). It appears that the ratio for smaller companies (turnover of less than R1 million) is significantly higher. It is submitted that in both a domestic and a cross-border context, an entity with a turnover of less than R1 million is small and is likely to be a start-up operation. This should explain to a large degree the relatively high cost of interest-to-EBITDA.

Comparison of the level of interest-to-EBITDA between the categories of entities

The mean ratio for foreign-held companies starts to increase relative to the other two groups from the 75th percentile, as is evident from the results in Table 3 and is also illustrated in Figure 1. The difference between the mean ratios for this group and the other two categories of entities increases more significantly for each percentile greater than the 75th percentile presented. It is submitted that this trend identified for foreign-held entities may be an indication of more aggressive tax behaviour in the form of high interest deductions. It is further submitted that this is the area that BEPS actions should be aimed at.

The information in Table 4, as illustrated in Figure 2, shows that the mean interest-to-EBITDA ratio for foreign-held companies in the turnover bracket between R1 million and R20 million is significantly higher than the other two groups of entities across all percentiles.

In the context of foreign companies establishing their operations in South Africa, a turnover of R20 million is still relatively low. It is therefore submitted that the high ratios in this turnover bracket may be a reflection of this fact, rather than of possible aggressive planning behaviour.

The trend in the ratios of the larger companies in Table 4 and the upward trend in Table 3, as illustrated by Figure 3, appear

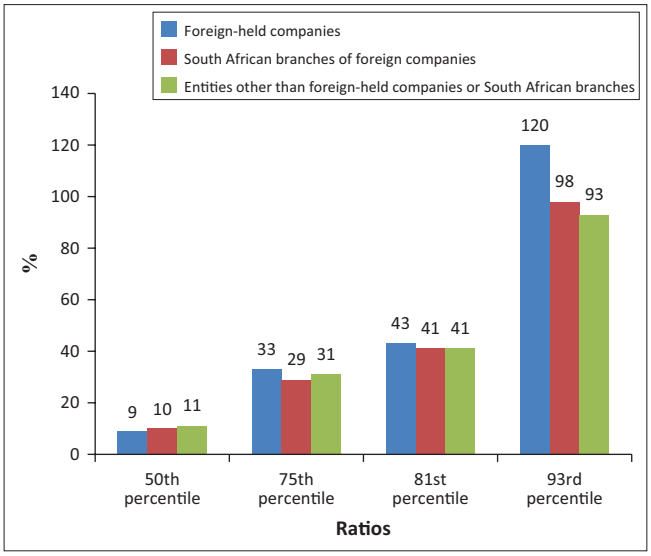

FIGURE 1: Comparison of interest-to-earnings before interest, taxes, depreciation, and amortisation (EBITDA) ratios.

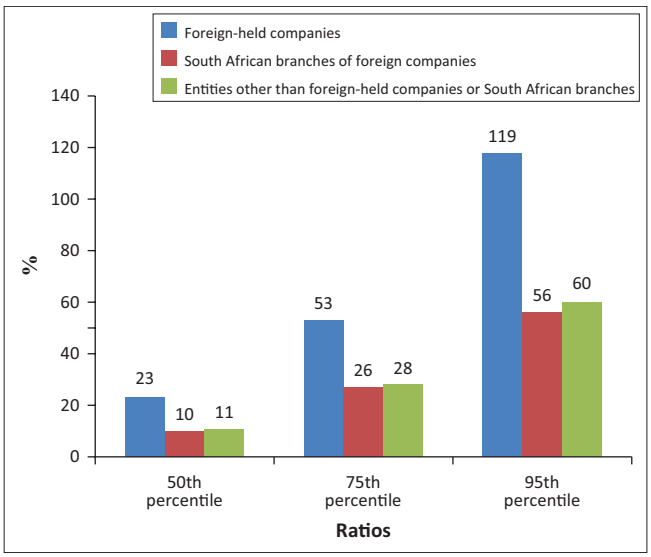

FIGURE 2: Interest-to-earnings before interest, taxes, depreciation, and amortisation (EBITDA) ratios for companies with turnover between R1 million and R20 million.

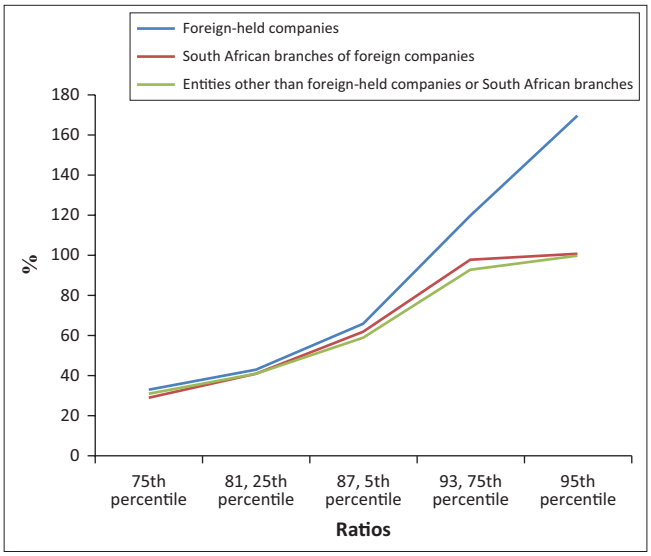

FIGURE 3: Trend in interest-to-earnings before interest, taxes, depreciation, and amortisation (EBITDA) ratio for 75th percentile and upwards in companies with turnover exceeding R20 million.

to be similar for companies falling within the 75th percentile and upwards.

It is therefore concluded that the main finding from the data described in Table 3 and Table 4 is that foreign-held entities, especially larger entities with a turnover of more than R20 million, have a higher interest-to-EBITDA ratio than the other groupings of entities considered. In order to gain an understanding of these entities, entities in the 75th percentile and upwards are further described in the remainder of this article.

Description of entities in the 75th percentile and upwards based on interest-to-EBITDA ratios

The further description of entities in the 75th percentile and upwards was done on the basis of the size of the entities in this group, the industry in which the entities were involved, and the country in which the controlling group company was located for foreign-held companies. Table 5 shows the number of entities in the 75th percentile and upwards in each of the three size categories used earlier.

Table 5 shows that the majority of foreign-held companies in the 75th percentile and upwards are larger companies with turnover exceeding R20 million, compared to a larger percentage of companies within the R1 million to R20 million turnover range for both South African branches of foreign companies and domestically owned companies.

For the purposes of this analysis of foreign-held companies the contribution of each industry sector to the whole population was determined based on the number of entities across all percentiles. The composition of the entities included in the 75th percentile and upwards was similarly determined. Following this, the relative change in contribution of each industry sector from the contribution to the whole population to the contribution of the group of entities in the 75th percentile and upwards were considered. The change in contribution provides an indication of industries that have more entities present in the 75th percentile than across all percentiles. This is an indication of the industries where the high interest-to-EBITDA ratios are particularly prevalent. Figure 4 presents industries with a greater presence in the 75th percentile upwards than across all percentiles, sorted according to increases for foreign-held companies.

Figure 4 shows that the three industries that have an increased presence in the 75th percentile and upwards, when compared to the contribution across all percentiles, are real estate activities, financial and insurance activities, and agriculture.

TABLE 5: Composition of companies in the 75th percentile and upwards by size.

Turnover bracket	Foreign-held companies	South African branches of foreign companies	Domestically owned companies
Turnover < R1 million	4%	15%	17%
Turnover > R1 million, < R20 million	24%	67%	67%
Turnover > R20 million	72%	18%	16%
Total	**100%**	**100%**	**100%**

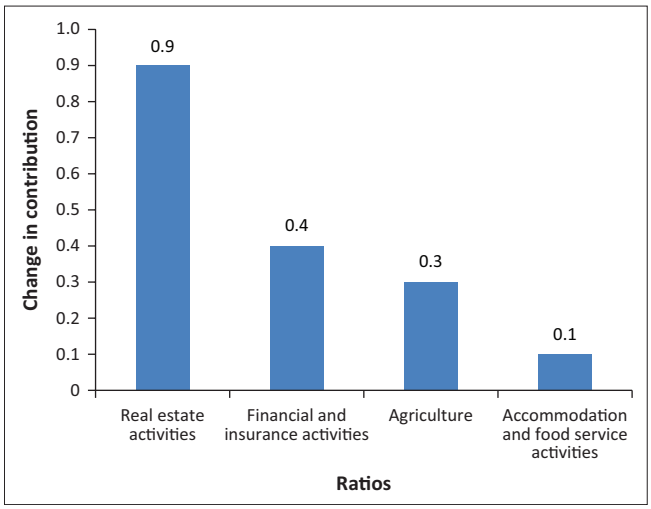

FIGURE 4: Change in contribution for 75th percentile and upwards: Foreign-held companies.

The entities in the financial and insurance activities industry have special characteristics that need to be taken into account before any conclusion can be drawn on their ratios. In the light of this, it is not possible to accurately explain the reason for their contribution to the higher mean interest-to-EBITDA ratio from the 75th percentile upwards. Real estate activities and agriculture are both capital intensive sectors, which may explain their increased presence in the higher ratio brackets. The value of this information is that these sectors may require special consideration by the policymakers when it comes to future legislative changes to interest deduction limits. In addition, such research would further assist in identifying industries where aggressive tax planning behaviour that results in profit shifting and base erosion is not present despite high interest-to-EBITDA ratios.

Lastly, the countries from which investment is made into South Africa in the form of the establishment of foreign-held entities were considered. Figure 5 provides an indication of the change in contribution to total investment by country (based on the number of entities) from all percentiles to the 75th percentile. This analysis would provide insight into companies from certain countries with a greater presence in the 75th percentile and upwards.

Figure 5 suggests that a number of lower-tax jurisdictions or jurisdictions that may provide certain tax benefits for investors have a greater presence in the 75th percentile and upwards. This may support the earlier observation that the entities in this percentile may be involved in aggressive tax behaviour. It is recommended that further research be performed in relation to the specific foreign-held companies that appear in the 75th percentile and upwards to determine whether further indicators of aggressive behaviour can be identified.

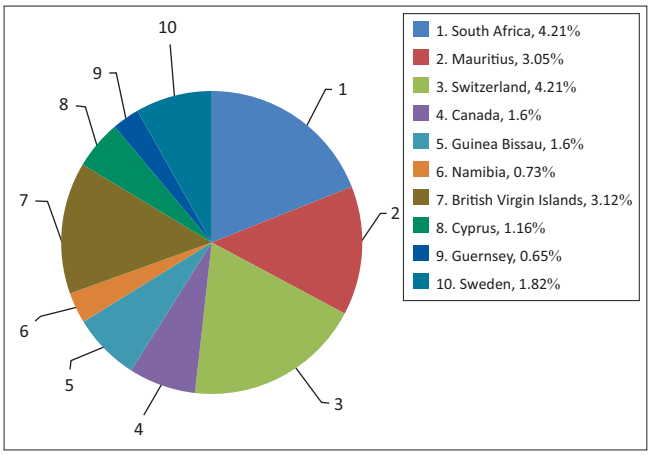

FIGURE 5: Top 10 countries[3] according to increase in contribution above 75th percentile.

Summary of main findings and conclusion

In summary, the descriptive analysis of the data contained in the CIT-IRP5 Panel Data revealed a number of notable observations. Firstly, the mean interest-to-EBITDA ratio for entities up to the 75th percentile does not differ significantly among the three categories of entities considered. The interest-to-EBITDA ratios for these entities up to the 75th percentile range are between 0% and 33%. However, from the 75th percentile upwards the mean interest-to-EBITDA ratio increases significantly more for foreign-held companies. This trend is likely to be caused by ratios of larger entities (turnover exceeding R20 million).

Secondly, approximately 80% of the taxpaying companies in South Africa have an interest-to-EBITDA ratio of around 40% or less. In addition, approximately 25% of the population falls within the interest-to-EBITDA range between 10% and 40%, and would be affected by a decrease in the interest deduction limitation threshold. On the basis that approximately 80% of the taxpaying companies, and in particular those where there is no clear indication of profit-shifting or aggressive tax planning behaviour, have interest-to-EBITDA ratios of up to 40%, it is submitted that the rate of 40% for the limitation under Section 23M appears to be appropriate.

Thirdly, the number of entities in the 75th percentile and upwards includes a greater proportion of companies involved in real estate and agricultural activities than the overall population of foreign-held companies considered. These sectors therefore appear to have higher interest-to-EBITDA ratios than other sectors. This fact should be considered in any legislative changes as these sectors of the economy may be impacted adversely by such changes due to the funding requirements of the sector, as opposed to profit-shifting behaviour. A similar trend exists for entities in the financial services and insurance activity sector. However, entities in this sector may have certain characteristics that need to be taken into account before it is possible to express further views on the implications of this trend.

Finally, the proportionate representation of foreign-held companies owned by controlling companies situated in a number of low-tax jurisdictions (including Mauritius, the British Virgin Islands, Cyprus, and Guernsey) is relatively higher from the 75th percentile upwards than for the overall population of foreign-held companies. This may suggest profit-shifting behaviour.

Limitations and areas for further research

The results described in this article are subject to a number of limitations, as indicated in the discussion. These limitations present an opportunity for further research to be performed using the panel data.

Firstly, the indicator for entities that have a foreign controlling group company was only included in the ITR14 return. The analysis can be extended if it is possible to combine a number of indicators in a manner such that the status indicated on the ITR14 return can be imputed accurately to earlier periods for which a return was submitted using the IT14 return.

The data available in the panel only allowed an analysis of total interest in relation to the interest-to-EBITDA ratios. Ideally, separate analyses should be performed in respect of the level of interest for both total interest and interest incurred in respect of connected persons. This is an area to improve the results of the research, if it is possible to obtain this information from the original data from which the panel was constructed.

It is recommended that further research be performed by analysing the characteristics of the individual foreign-held companies that appear in the 75th percentile and upwards to determine whether further indicators of aggressive behaviour can be identified. This research would further assist in identifying industries where such behaviour is not present despite high interest-to-EBITDA ratios.

As noted, some variances existed between EBITDA calculated for accounting and tax purposes, particularly in the case of foreign-held companies. A number of tax developments occurred during the period between 2013 and 2015, for example the introduction of a real estate investment trust tax regime. It is submitted that these developments may have caused the variances noted. Further research to gain an understanding of the adjustments that cause this variance would be of value, given that Section 23M (or any other tax legislation) would use a measure of EBITDA calculated using tax data.

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3.The South African companies included in Figure 5 may represent intermediate South African holding companies that are ultimately owned by foreign parent companies.

Competing interests

The authors declare that they have no financial or personal relationships that may have inappropriately influenced them in writing this article.

Authors' contributions

P.V.D.Z. and D.S. were responsible for the literature review and data analysis. W.K. reviewed the article and made critical input to it.

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