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The New Tax Laws on Interest Deductibility and the Choice of Valuation Method

José Carlos Tudela Martins

Católica LisbonSchoolof Business andEconomics, Universidade Católica Portuguesa, Lisbon, Portugal

***Corresponding Author:** José Carlos Tudela Martins, Católica LisbonSchoolof Business andEconomics, Universidade Católica Portuguesa, Lisbon, Portugal, jct@ucp.pt*

ABSTRACT

This article tries to illustrate the impact of limits on the tax deductibility of interest and the impact of this situation in the choice of the valuation method. Several possible approaches are suggested and we conclude that the APV - Adjusted Present Value, or CCF – Capital Cash Flow should be the chosen ones.

Keywords: *Company valuation; valuation method; interest tax shield*

INTRODUCTION

Many of us when faced with the decision, of which method we should use to perform a valuation of a company, will choose the Discounted Cash-Flow using WACC (DCF-WACC), because of its simplicity.

But one of the underlying assumptions of DCF-WACC is that the capital structure will remain more or less constant. We are used to think about the capital structure in terms of Debt (D) and Equity (E) only, and that the cost of debt (kd) will be tax deductible.

But what happens when we have to split Debt between the one that generates tax deductible interest (and where we can use the traditional DCF-WACC) and debt that might not generate tax deductible interest? This problem is further compounded when the limits on the tax deductibility of interest are not linked to some D/E ratio, but to a percentage of the taxable EBITDA (usually only for interest that is above a certain absolute limit).

The purpose of this article is to help practitioners making the choice of the valuation method, when faced with limits on the deductibility of interest for tax purposes.

LIMITS ON INTEREST DEDUCTIBILITY

In many countries and specially in continental Europe, the tax authorities in recent years have imposed limits on the tax deductibility of interest.

Although there are still many countries around the world where there are no limits, we will probably see this trend spreading across countries, as tax authorities try to find new ways to increase the tax collection.

Table 1 presents a summary of the limits that are currently in place in some countries and that are generally applicable to all types of debt:

Table1.*General examples of limits to the tax deductibility of interest*

Country	Limit as a proportion of earnings	Limit when the rule kicks-in	Carry forward of interest deductibility above the threshold	Claw back of the interest deductibility under the threshold
Portugal	30% of EBITDA	1.000.000€	For the next five years	Of the last five years
Spain	30% of EBITDA	1.000.000€	No	No
Italy	30% of EBITDA	No limit	Indefinitely	Indefinitely
Germany	30% of EBITDA	3.000.000€	For the next five years	No

In table 2 we present some countries where there are limits, but they are either linked to related party debt or special situations:

Table2.*Special situations of limits on the tax deductibility of interest*

Country	Type of debt	Type of limit	Carry forward of interest

	where it is applicable		deductibility above the threshold
France	Related party	Maximum: • Debt< 1.5x Equity; • 25% of EBITDA Interest received from related parties	Reduced by 5% for each year after the second year when the threshold is reached.
Australia	Investments overseas and foreign controlled investments	Without limit if interest is less than 2 million AUD. Above that amount the limits are: • A prescribed D/E of 60% of assets (without taking into accountrelated party balances) • The maximum a company could reasonably borrow from a bank	No
Japan	Related party	D/E should not exceed 3/1 both for related debt and equity, and for total debt and total equity	No
Brazil	Related party or debt from tax havens / preferential tax regimes	D/E should not exceed 2/1 both for related debt and equity, and for total debt and total equity Debt < 30% of Equity	
Canada	Related party	D/E should not exceed 1.5/1 for related debt and related equity	
China	Related party	D/E should not exceed 2/1 for related debt and related equity	
UK	Related party	Arm´s length principle	
USA[1],[2]	Related party	D/E should not exceed 1.5/1 and net interest exceeds 50% of adjusted taxable income	

How to address a limit on interest deductibility that is linked to Balance Sheet ratios

If we have interest that is deductible for tax purposes and interest that is not deductible, our fist approach would be to incorporate this in the WACC formula by considering two types of debt:

$$Wacc = Ke * \frac{E}{V} + Kdts * (1 - tax\ rate) * \frac{D\ with\ TS}{V} + Kdwts * \frac{D\ without\ TS}{V}$$

Where:

- Kdts is the cost of debt that generates tax shields;
- Kdwts is the cost of debt that does not generate tax shields;
- Ke is the traditional cost of equity;
- E is Equity at market value;
- D with TS is Debt with tax shields at market value;
- D without TS is Debt without tax shields at market value;
- V= E + Debt with or without tax shields

This type of adjustment might work well if the limit on interest deductibility was defined in terms of market D/E. But in fact the D/E used for tax purposes is a book-value limit.

So we can only apply this formula with the following assumptions:

- The proportion of Debt that generates tax shields measured at market values relative to Equity (also in market values) will remain constant;
- This proportion is the same as with the limit in book values, or at least does not violate the tax limit.

These assumptions are very stringent, and clearly, we cannot guarantee that the D/E at market values will be the same as D/E at book values.

Another possible approach is to try to adjust the D/E taking into account the Price Book Value ratio.

Using this approach, we basically assume that the PBV will be stable over time (so we either use the historical average or some target value that we assume will materialize).

Let´s see how we could use this approach, assuming a tax limit at book value of debt equal to two times equity (also at book value). Using the next equation this implies that D/V (at book value) would be equal to 2/3:

$$\frac{D}{V} = \frac{D}{D+E} = \frac{\frac{D}{E}}{\frac{D}{E}+1} = \frac{2}{2+1} = 2/3$$

If the current PBV is equal to 2.8 (historical average of the S&P500 from 1999 to 2017 [3], then using the next two equations would imply a D/V (at market value) equal to 41.7%:

$$\frac{D}{E} = \frac{D}{2.8 * Equity\ @\ book\ value} = \frac{2}{2.8} = 0.714$$

$$\frac{D}{V} = \frac{0.714}{0.714+1} = 0.417$$

If in the total capitalization of the company debt is more than 41.7%, then the debt that surpasses this limit should not generate tax shields.

But even this approach has several limitations:

- We assume that the PBV is constant over time, which is not the historical evidence (in the last 15 years the S&P500 PBV has been between 2x and 3x[3]);
- We assumed that debt at market value is equal to debt at book value, also an assumption that might not be true.

But there is another possible flaw in the two previous approaches.

We generally accept that if a company pays out as dividends an amount equal to the FCFE, then there is no impact on the company value. But with the rules on interest tax deductibility if a company pays a dividend that is lower than the FCFE, then the equity (at book value) will grow and the overall limit for the interest deductibility will grow (even with stable D/E at book values).

So, in fact if we use the traditional DCF-WACC we might be making a mistake, because the cost of capital should be adjusted on a year by year basis.

The alternative would be to use either the Adjusted Present Value (APV) or the Capital Cash-Flow (CCF) models, because in these models we can clearly use the exact amount of interest tax shields that we have as an input, and change it on year by year basis if needed:

$$APV = \sum_{t=1}^{n} \frac{FCFF}{(1+ku)^t} + \sum_{t=1}^{n} \frac{Interest\ tax\ shields}{(1+ku)^t} + Terminal\ value\ of\ FCFF +$$

$$+Terminal\ value\ of\ Interest\ tax\ shields - Expected\ bankrupcy\ costs$$

$$CCF = \sum_{t=1}^{n} \frac{FCFF + Interest\ Tax\ Shields}{(1+ku)^t} + Terminal\ value\ of\ Capital\ Cash - Flows$$

Of course this will bring us to the discussion of which discount rate we should use for the interest tax shields and how to compute the expected bankruptcy costs.

I don´t think these two problems are solved, and probably they will need further investigation until a consensus or a prevailing opinion can be assumed. But that does not change the idea that the APV and the CCF are better when we have this type of limit on the tax deductibility of interest.

How to address a limit on interest deductibility that is linked to EBITDA and /or only kicks in at a certain level

Clearly when we have interest deductibility limits that only kick-in at a certain amount of EBITDA, and after that amount they are linked to taxable EBITDA, the problem we face is much more complex.

There is no way to incorporate this limits on the WACC formula, so what we can do is:

- either arbitrarily assume that all interest is tax deductible, as if the company we are making a valuation has an interest cost bellow the limit;
- or assume arbitrarily that a fixed percentage of the debt will have interest without tax deductibility.

But both approaches will clearly have serious flaws, unless of course the company has an interest cost bellow the limit and intends to stay there.

And once again the solution is to go to APV or CCF, in order to be able to compute clearly and exactly what are the interest tax-shields that the company has and their timing.

CONCLUSION

Without entering into the discussion of whether APV or CCF are better methods to make a valuation of a company vs DCF-WACC, our purpose was to illustrate that because of the changes in the interest deductibility for tax purposes, we need to use either APV or CCF when we have situations where there are limits.

It doesn´t matter if the limit is a D/E at book value, or a percentage of taxable EBITDA, with or without a limit when it kicks-in. The answer is always the same. To incorporate this type of situations we need to predict accurately (and separately) the exact tax shields that we have.

It can be argued that with the current level of interest rates in the Euro area, many companies are paying a cost of debt below 2%-3%, so this means that they will not be affected by the kick-in of the limit until the moment when their debt is above 30 to 100 million € (roughly equal to a 1 to 3 million interest charge).

This would imply that we could make a valuation of the majority of small and medium enterprises without worrying about this problem.

But if interest rates go back to the historical level, the kick in of the limit will affect many more companies. The same will happen whenever the limit on interest deductibility is not dependent on a certain threshold to kick in.

So,in conclusion, now is the time to change the valuation method when these types of situations are present, and to demand the need for more research that can help us overcome the current difficulties in applying either APV or CCF.

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