

Part II

“The rationale for including debt in a company’s capital structure. How does gearing affect a company’s risk level?”

INTRODUCTION

In this part of the paper we will form an opinion about the reasons that lead a company to finance its operations through debt or, in other words, to indicate the reasons that pursue a company to include in its capital structure the various types of debt.

Then, we will try to explain how the company’s gearing ratio, which describes the extent of debt compared to equity capital, affects the company’s exposure to systematic risk¹.

In this regard, I believe that it would be a positive step to proceed firstly by describing the following:

Debt and Equity capital

The company’s debt capital expresses in numbers the obligations that have been undertaken because of the company’s borrowing, e.g. term loans (unquoted), bank overdrafts, debentures, and bonds (quoted) while the equity capital expresses the company’s obligations to its shareholders, that is, shares and reserves.

As stated in their book (Gitman and Madura 2001), “Debt capital includes all long-term borrowing incurred by a firm, including bonds. Equity capital consists of long-term funds provided by the firm’s owners, the stockholders”.

Gearing

Gearing describes the contribution to the company’s long-term capital of equity and debt, or, in other words, it assesses the sources by which the company is financed (owner’s and creditor’s funds). To this end, a ratio has been calculated, called the *gearing ratio* that describes the debt (prior charge capital) to the equity in a percentage form.

We can consider a company with a gearing of less than 50% as a low-g geared one, while a company with a gearing that exceeds 50% can be considered as a high-g geared one.

Capital structure

The company’s capital structure indicates the necessary sources² (shares, term loans, bonds, and retained profits) by which it is financed and, therefore, the company is able to operate and accomplish its investment projects.

¹ The systematic risk also known as market risk is a part of the total risk that cannot be eliminated through diversification.

² Usually the company prefers its capital structure to include a combination of sources.

Risk

Indisputably, a productive unit that operates includes risk. More specifically, the company's systematic risk can be divided into two components: the business risk that is due to the company's operation and the financial risk that arises only when a debt capital exists.

WHY A COMPANY TAKES ON DEBT

As stated earlier, there are various types of sources for a company to finance its investment projects. Certainly each one of the aforementioned alternative types of long-term finance has its own characteristics (strong points and weak points), and hence a company usually requests to include in its capital (equity and debt) the most suitable combination for its specific needs and potentialities.

As stated in their book (Lumby and Jones 2002), "The various types of finance differ from each other in several ways. These include how they are issued, the obligations that they impose on a firm's management, and how they are affected by the tax system. They also differ in terms of risk".

Considering the company's capital structure, Franco Modigliani and Merton Miller wrote in 1958 one of the most important articles about capital structure that laid down the foundations for modern corporate finance.

They argued that under restrictive conditions, a company's value is irrelevant to its gearing (leverage) level, or, in other words, it is irrelevant to its value the way the company chooses to finance its investments and operational activities.

More specifically, the (M and M) theorems provide that if we consider the absence of corporate taxes, the portion of debt to the company's long-term capital, e.g. gearing, does not affect the firm's value.

On the contrary, in the presence of taxes, the company will benefit in terms of value creation if it decides to introduce and / or increase its leverage, since it will take advantages from the interest tax shield. As stated in their book (Lumby and Jones 2002), " In a word where there was tax relief on debt interest, we would expect a company's after-tax WACC³ to be progressively lowered as it increased its level of gearing".

As it is known, the amount of interest payments is usually deducted from the taxable income, which means a lower interest rate⁴, which in turn leads to a reduced cost of capital.

WHY A COMPANY PUTS LIMITS ON ITS GEARING

Considering the aforementioned, it can be argued that because of the tax shield benefit, debt provides a cheap way among various ways that a company can finance its activities. Consequently, one can conclude that it will be for the company's benefit

³ WACC(weighed average cost of capital) is defined as:
$$\frac{\text{expected EBIT} \times [1 - \text{tax rate}]}{\text{debt} + \text{equity}}$$

⁴ If we consider an interest rate of 4% and a corporate tax (T) of 40%, the actual interest rate is $4\% \cdot (1 - T) = 2.4\%$.

should the company decide to increase its gearing ratio up to the maximum possible extent.

However, in practice, this is not the case because of the following:

Agency costs

Undoubtedly, the suppliers of debt finance in order to secure their investment impose very restrictive conditions on the company, and, consequently, constrain the management team from taking decisions without having firstly the agreement of the principals (lenders). For example, loan agreements are usually required covenants, such as:

- Restriction from disposing of the company's fixed assets.
- Restriction of additional debt finance.
- Restriction on the level of dividends payable.
- Additional securities in the way of assignment of earnings and /or insurances.

The aforementioned constraints – known as agency costs – often force the management to limit the company's gearing.

Bankruptcy costs

Indisputably, if a company is forced into bankruptcy, it will face considerable costs since its abrupt liquidation will take place in a market that only accidentally can prove to be perfect. In other words, the bankruptcy is negatively related to the shareholders level of wealth.

When we consider a high-g geared company we can anticipate an increased probability of its bankruptcy mostly because such a company is – as any company is - exposed to the market variables that may negatively affect its ability to generate cash, while at the same time, the company has to fulfil its loan obligations (interest and principal payments) that can be considered as 'fixed'. In other words, the lender (debt holder), in accordance with the loan agreement, has the right to proceed into the company's liquidation should he consider that the company is in default of its payment obligations.

Thus, the bankruptcy costs provide an additional reason for the company to limit its gearing level.

Debt capacity

If we consider that the majority of the capital that flows from the lenders to the companies is secured against the companies' assets, we can anticipate that the lenders (banks or other financial intermediaries) are looking for those assets that can provide the maximum of security. Therefore, the debt suppliers are interested in assets that firstly, retain a 'good' value in the second-hand market and secondly, the end of the assets useful life is still in the distant future, or, in other words, the asset is not going to be fully depreciated before the full repayment of the loan.

Finally, we conclude that because of the company's unlimited debt capacity, or in other words, because of the limited value of its assets, the company, irrespective of its willingness, cannot increase its gearing level to an extent not acceptable to its debt capital suppliers.

Tax exhaustion

Another reason that puts limits on the company's gearing level is what is known as tax exhaustion: when a company has increased its gearing to such a level that there is no sufficient tax liability, or in other words, has negative taxable income, and, consequently, it cannot benefit from 'all' the tax relief.

Taking into consideration our previous analysis, we conclude that there is no 'safe' guidance to indicate the ideal participation of the capital structure components, which could eliminate the risk. In other words, although both the debt and the equity have advantages, they also have their weak points, and, consequently, we are not quite sure about the portion of debt and equity capital that the company's capital structure should consist of.

In practice, a company, when it decides the formation of its capital structure, is also taking into consideration the following:

The sector's average level of gearing.

Companies consider their competitors level of gearing and, in general, tend to follow the industry's average level of gearing.

The interest cover ratio.

It can be argued that the ratio in question is a good indicator of the company's ability to fulfill its interest obligations and is defined as:

$$\frac{\text{Earnings before interest and tax (EBIT)}}{\text{Interest liabilities}} \quad \text{in times}$$

The generally accepted concept is "the greater the ratio, the lower the risk for the potential of a company's bankruptcy".

The degree of operating gearing.

Using the degree of operating gearing (DOG), we can measure the company's systematic business risk in contrast to the interest cover ratio, which assumes that it allows us to judge the financial risk exposure.

The DOG is defined as:

$$\frac{\text{Revenues} - \text{Variable operating costs}}{\text{Earnings before interest and tax (EBIT)}}$$

The DOG indicates the percentage change in EBIT for every 1% change in revenues, and it actually focuses on the proportion of fixed to variable costs, and on the impact of this proportion on earnings.

In this respect, it can be argued that the greater the proportion of fixed to variable operating costs, the larger the DOG that, in turn, means the larger the business risk because of the existence of a high gearing rate.

CONCLUDING REMARKS

In this paper we initially analyzed the reasons that lead a company to finance its activities (operational and investment) using not only equity but debt as well. This is due mainly to the effect of the tax shield, that is - a lower cost of capital, while ordinary or preference dividends do not attract such a similar tax relief.

Companies will usually continue to increase their gearing ratio, as long as the return on investment (ROI) – expressed as an annual percentage rate – exceeds the actual interest rate, e.g. $\text{Interest rate} \times (1-T)$, $T = \text{corporate tax}$, or , in other words, as long as they can take advantage of productive opportunities.

However, as indicated later in this paper, the company's inside or outside 'environment' puts limits on the level of its debt, not because there is an 'ideal' level of gearing that the company may have overcome, but due to the increased risk that is positively related to the company's debt level.

In this respect, we underlined the factors that in practice increase the risk that is linked to the level of the company's gearing. The factors in question either prevent the management's freedom, e.g. agency cost, or prevent the lenders from borrowing additional funds, e.g. debt capacity, or have no actual positive effect on the company's profits, e.g. tax exhaustion, or increase the shareholders' undertaken risk, e.g. bankruptcy cost, a potential low interest cover ratio, and a potential high degree of operating gearing (DOG).

We finally concluded that although the debt capital represents an attractive way for a company to finance its activities, the company's gearing level should be taken very seriously into consideration since the greater the company's leverage, the larger its exposure to risk.