

The cost of capital is the fundamental tool for commercial decision making. It drives measures of value creation and destruction and forms a key plank in investment appraisal and merger and acquisition (M&A) decisions using cashflow and other frameworks.

Yet it is often poorly understood. Similarly, corporate policies in respect to how the cost of capital is implemented sometimes get stuck in the mists of time. For some companies, the calculator button is well and truly stuck on 10% (and has been for some years). It is also possible for the underlying analysis to fall victim to the pitfalls that have plagued practitioners for years (see *Common cost of capital mistakes* on page 22).

But does this matter? Of course it does. Getting the cost of capital wrong or misunderstanding it can lead to overpaying for acquisitions, incorrect statement of asset values on balance sheets (particularly in the context of incoming International Financial Reporting Standards (IFRS) standards such as IAS 39) and an inability to assess the extent to which balance sheets can be stretched to maximise the impact of financial leverage.

A one-percentage point decrease in the cost of capital can increase the apparent fair value of a £500m business by as much as £50m. There is no getting away from it: in order to ensure the right corporate decisions are being made and that shareholder value is not being

GETTING THE COST OF CAPITAL WRONG CAN HAVE DEVASTATING CONSEQUENCES. TREASURERS SHOULD GET INVOLVED IN ENSURING THE RIGHT BALANCE BETWEEN DEBT AND EQUITY FOR THEIR COMPANIES. TIM OGIER, JOHN RUGMAN AND LUCINDA SPICER REPORT.

Executive summary

- If cost of capital is poorly managed, this can lead to a company overpaying for acquisitions, incorrect statement of asset values on balance sheets and the inability to assess which balance sheets can be stretched to maximise the impact of financial leverage.
- Cost of capital was considered the domain of the finance department and CFO, but treasurers have an important role in its analysis. Judging capital markets behaviour, how debt is priced and what equity returns shareholders can expect are just a few of the main roles that treasurers can play.
- Cost of capital theory and analysis can be used to assess optimal capital structure.
- Calculating optimal capital structure requires estimating the cost of debt and cost of equity capital at different levels of gearing.



A balancing act

destroyed, firms need to know 'exactly' what the cost of capital is. This rule applies from the largest quoted business to the smallest enterprise.

In the past, the cost of capital may have been the preserve of the finance function and corporate CFOs, but treasurers have an important role to play in its analysis to ease the passage through awkward technical and judgmental minefields.

When measuring the cost of capital, the main problem is that most of the brilliant thinking brought to the problems of finance, investment returns and cost of capital is inaccessible. It is tucked away in the formulae inside academic textbooks, learned papers and in footnotes to the products of financial market data providers. The worst omission is the practical application of the cost of capital. For the most part, it is just not there. Survival in the cost of capital jungle may seem like you are spending a lifetime immersed in the subject.

The core skills required to sail corporate ships safely through stormy cost of capital waters are largely economic and not account driven. It is also important to be able to make judgements about capital market behaviour and reactions, such as how debt will be priced and what equity returns shareholders can expect. That is why treasurers have such an important role to play.

Typical questions that are asked include:

- Are long periods of equity returns more useful to gauge current investor expectations or should you use more up-to-date, shorter periods for your analysis?
- Against which stock market index should measures of beta be regressed – a local index such as the FTSE or a more international index such as the Morgan Stanley World Capital Index? And doesn't it

depend on the nature and identity of the shareholders in the company?

- What term of risk-free rate should be adopted for the purposes of the calculations?
- How are debt margins best evaluated and measured?
- What adjustments to domestic costs of capital may be necessary when appraising investments in, say, the Philippines?
- What measure of gearing should be adopted for the Weighted Average Cost of Capital (WACC) calculations – book, current market gearing or some measure of optimal gearing (see *Figure 1*)?

These questions essentially require judgements to be made about capital market conditions or economic theory to be deployed.

But why have treasurers had relatively little input into corporate cost of capital debates to date – all too often being consulted at the last minute about a debt margin assumption as part of a WACC calculation that 'someone in finance' has already made?

The answer lies in the circumstances in which cost of capital is commonly employed. It mainly revolves around M&A analysis, investment appraisal, impairment testing and the benchmarking of divisional and corporate economic performance/shareholder value assessments. These are largely the preserve of corporate finance functions and the cost of capital analysis has traditionally originated here.

But this does not mean that accountants and CFOs should have a monopoly when it comes to setting cost of capital for important corporate decisions that need to be made.

Investment appraisal and cost of capital and corporate finance skills are all areas that treasurers should get involved in outside the treasury arena (see *More than just a treasurer?*, page 44, *The Treasurer*, July/August).

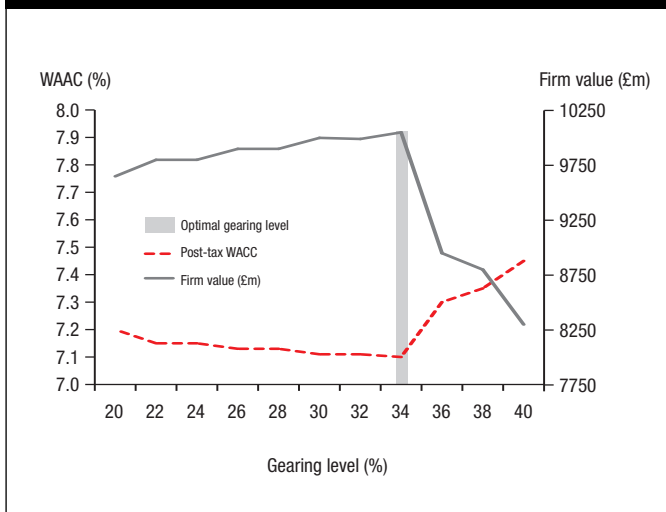
This makes sense given the economic and capital markets skills required for sound cost of capital decisions and conclusions to be drawn. And it is starting to happen in real life. For example, at Vodafone, Group Treasurer Gerry Bacon and Deputy Treasurer Neil Garrod devise group policy on cost of capital and advise on how it is applied in terms of investment appraisal across billions of pounds of global assets. This is not to say that this arrangement is right for all companies, or that all finance functions are always unlikely to possess the skills needed to execute and understand the cost of capital properly. The important thing is to deploy the best skills in the company in respect of the cost of capital no matter where they sit.

HOW TO ACHIEVE OPTIMAL CAPITAL STRUCTURE. Cost of capital theory and analysis can be used to assess optimal capital structure. It is possible to use this analysis by assessing the scale of any potential share buy-back that a company is contemplating; or evaluating the size of any corporate war chest that can be drawn down for acquisitions without overstressing the corporate balance sheet beyond its optimum point. This is something treasurers should be involved in.

Calculating optimal capital structure is, in principle, relatively straightforward. It simply requires estimating the cost of debt and cost of equity capital at different levels of gearing. Optimal capital structure is reached at the point at which the WACC is minimised and overall firm value optimised.

Simulating the cost of equity at different levels of gearing can be a relatively simple exercise once an asset beta has been determined for the business. This can be levered into different equity betas and different equity costs of capital using either the Harris-Pringle or Miles-Ezzell beta relevering formulae.

Figure 1. Weighted Average Cost of Capital Calculations



Common cost of capital mistakes

- The adoption of a fixed cost of capital (e.g. average it out to 10%) that never changes in response to changes in financial conditions, borrowing rates or business risks. A big danger is assessing investment opportunities using an enterprise WACC rather than the WACC appropriate to the real (and different) risks of the project.
- Appraisal (hurdle) rates that are in excess of the cost of capital 'in order to root out the very best investments'. This simply roots out the most risky investments, whose expected returns need to be much higher in order to attract capital in the first place.
- Use of the coupon rate on debt borrowings as a proxy for the cost of debt, rather than the redemption yield that correctly measures the return debt holders demand.
- Use of a nominal (inflation adjusted) cost of capital in conjunction with a real set of cashflow projections (and vice versa). This is equivalent to putting diesel in a petrol car.
- Trying to make sense of beta numbers for the same business produced by different data providers. Because they typically estimate beta in different ways, over different time periods and use different estimation intervals, there is no reason why their numbers should tally.
- There are two different formulae for unlevering beta (Harris-Pringle and Miles-Ezzell). Use of the incorrect formula in certain situations can lead to misleading results.

Working out the cost of debt is usually more complex. Although interest cover is typically a key driver of credit ratings and debt costs, other factors such as sales margins can be important too. Simulation of the cost of debt at different levels of gearing usually requires modelling and simulation of important financial ratios such as interest cover at different levels of gearing. It is also worth using

panel data from the capital markets on what these ratios typically imply for credit ratings and debt costs (for different sectors).

Once the costs of debt and equity have been separately simulated at different levels of gearing, they can be brought together to identify the level of gearing at which the overall cost of capital of the business is minimised. Using a simple cashflow model, it is then possible to evaluate what impact a move to the optimal capital structure of the business is likely to have on shareholder (equity) value.

An example, of the typical output from this sort of process is highlighted in *Figure 1*, which highlights several important points:

- First, it is possible to estimate the optimal capital structure for a company and, given the analysis involved, group treasurers are usually in the best position to do this.
- Second, it is possible to model and estimate the equity value of the business before and after any transition to optimal gearing. In *Figure 1*, the equity value of the firm – if it were optimally geared – is around £10bn. This is the point at which the blue continuous line (firm value) peaks in the graph. The blue continuous line (firm value) and the red dashed line (weighted average cost of capital) move in opposite directions because firm value is maximised when the cost of capital for the firm is minimised.
- Third, the cost of capital is likely to decrease steadily up to the optimal point, but shoot up rapidly once the optimal point has been passed. In other words, while being under-gearred can be a problem and lead to a leakage in shareholder value, being over-gearred can lead to a considerable destruction of shareholder value/equity returns. This happened to the telecoms sector at the end of the 1990s when many operators had to make distressed asset disposals. In the example above, if the company is currently geared at 40% (debt:debt + equity), its equity would be valued by the market at £8.3bn – some £1.7bn less than if the business were optimally geared at 34%.
- Fourth, it is not always sensible for businesses to gear themselves right up to the optimal point because of the asymmetric downside risk to the cost of capital 'toppling-over' the optimal cliff-edge. To be completely rigorous, these risks need to be modelled and evaluated. This can only be done by overlaying such a basic optimal gearing model with dynamic (probabilistic) risk analysis, in order to evaluate the 'cushion' required to guard against bypassing the optimal gearing levels.

This article is based on the book, *The Real Cost of Capital*, by John Rugman, Tim Ogier and Lucinda Spicer, published by FT Prentice Hall. Find out more at www.costofcapital.net.

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