3.1.7 Leverage and Capital Structure

Self-Test Questions

Unit:	Unit 1 – Treasury Strategy
Module:	Module 3 – Financial Strategy
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Summary:	Question around some theoretical and practical issues of establishing leverage and capital structure
Keywords:	beta, r^2, WACC, un-gear, re-gear, un-geared beta, geared beta, gearing, after tax cost of debt

Question 1
Is β meaningless when r^2 (a measure of 'goodness of fit') is very low and what are the practical implications?

Question 2
How should I calculate WACC for a non-quoted company where beta and market capitalisation are not available?

Question 3
How should I calculate WACC when the company has lots of cash as well as debt?

Question 4
How should I calculate the un-geared beta when the company has net cash rather than net debt?

Question 5
How should I calculate WACC when there is a complex capital structure with several tranches of debt and equity?

Question 6
How would you establish the optimal gearing in practice for a given company?

Question 7
How should I establish the "correct!" tax rate in calculating the after tax cost of debt?

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Answers

Answer 1
Statistically beta is indeed meaningless when r^2 is very low due to the lack of correlation between returns on the share and those from the market. You should therefore check other companies in the sector to see if there is any consistency regarding betas. The position also means that specific risk factors are more important than market-related risk factors, with implications for risk management.

Answer 2
To calculate WACC for a non-quoted company, select some quoted comparables from the same sector, un-gear their betas then re-gear using the non-quoted company's own gearing. To estimate market capitalisation use comparable multiples from the sector sample then apply to the test company. Use the actual level of debt.

Answer 3
If the cash on the balance sheet is really offsetting debt, perhaps because it is in pooling arrangements where set off accounting treatment is not available, then netting off cash to debt is appropriate. However, netting off larger amounts of cash and debt (the conventional method) introduces a distortion to the WACC calculation because cash earns less than the cost of debt, though both are tax sheltered. You should therefore calculate WACC with three terms, viz. equity, debt and cash (as a negative), all with their associated costs (rate of return for cash). For example, airlines generally hold large amounts of cash for regulatory and other reasons, which has to be financed by equity or debt. This logic can be taken even further if there is leasing and / or pension deficits in the company.

Answer 4
To calculate the un-geared beta when the company has net cash rather than net debt, simply enter a negative for "net debt" in the formula for un-gearing beta. Not surprisingly the un-geared beta (or asset beta) will be higher than the geared beta (equity beta). Whereas debt increases shareholder risk, cash reduces it.

Answer 5
To handle a complex capital structure, use the number of terms in the WACC calculation together with associated costs appropriate to the significantly-different tranches of debt and equity e.g. D1, D2, D3, E1, E2. However, in such firms which have generally highly geared 'structured finance' the concept is often less appropriate for investment decisions as there will probably be little scope for significant capital expenditure. In addition, the structure changes rapidly as cash is generated and debt is paid down, thus making WACC an unstable concept, although there is no reason why WACC cannot be calculated annually in such an environment. Pension deficits might also make an entrance here, but calculating a cost of the deficit is challenging.

Answer 6
To establish the optimal gearing in practice for a given company:

Internally - from an analysis of volatility/stability of company's cash flows, allow for the "worst possible" scenario and then probably leave some margin to allow for a degree of conservation in the company's financial management.
Externally - analyse a comparative sample of companies to establish the sector norms. Look at variability measures, perhaps some measure of cash flow volatility (annually, semi annually if available), and credit measures particularly cash interest cover.

Answer 7
To establish the "correct" tax rate, do NOT use the "effective tax rate" from the P&L Account. The correct tax rate depends on where the debt is! You will need to estimate the weighted tax rate based on the distribution of the company's tax across different tax jurisdictions. It is not easy.