Chapter 14 revision notes

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Sources of finance and the cost of capital

Sources of finance

There are broadly two main sources of external finance available to a company:

♦ ordinary shares (or equity
♦ loan capital (or debt)

Each type of financing has a unique set of characteristics and rights.

Sources of internal finance to a company are its retained earnings, extended credit from suppliers, and the benefits gained from more effective management of its working capital.

Share capital

The capital of a company is called share capital and may comprise ordinary shares and preference shares (although there are other classes of shares). The company determines the maximum share capital that it is ever likely to need to raise and this level is called its authorised share capital. The amount of shares actually in issue at any point in time is normally at a level for the company to meet its foreseeable requirements. These shares are called the company's issued share capital, which when all the shareholders have paid for them are referred to as fully paid up issued share capital.

Ordinary shareholders receive a dividend at a level determined usually by company performance and not as a specific entitlement. Preference shareholders receive a dividend at a level that is fixed, subject to the conditions of issue of the shares, and have priority over the ordinary shareholders if the company is wound up.

Additional equity capital may be raised through increasing the number of shares issued by the compan through scrip (bonus) issues and rights issues. A scrip issue (or bonus issue) increases the number of shares with the additional shares going to existing shareholders, in proportion to their holdings, through capitalisation of the reserves of the company. No cash is called for from the shareholders.

In a rights issue, the right to subscribe for new shares (or debentures) issued by the company is given to existing shareholders. The 'rights' to buy the new shares are usually fixed at a price discounted to below the current market price. A shareholder not wishing to take up a rights issue may sell the rights.

Long-term debt

Generally, companies try and match debt with the type of assets requiring to be financed:

♦ fixed assets
♦ working capital

Long-term debt is usually more expensive and less flexible, but has less risk, than short-term debt. Long-term debt is therefore normally matched to finance the acquisition of fixed assets, which are long-term assets from which the company expects to derive benefits over several periods.

Long-term financial debts are the elements of loans and leases that are payable after one year of the balance sheet date. Debt capital may take many forms: loans, debentures, Eurobonds, mortgages, etc. Each involves interest payment, and capital repayment and security for the loan is usually required.

Security for a loan may be by way of a floating charge, without attachment to specific assets, on the whole of the business's assets. Security may alternatively, at the outset, take the form of a fixed charge on specific assets like land and buildings.

Loans, or debentures, may be redeemable in which case the principal, the original sum borrowed will need to be repaid on a specific date.

Short-term debt

Short-term financial debts are the elements of overdrafts, loans and leases that are repayable within one year of the balance sheet date. Short-term finance tends to be less expensive and more flexible than long-term debt. Short-term debt is therefore normally matched to finance the fluctuations in levels of the company's net current assets, its working capital.

Such short-term finance represents a higher risk for the borrower. Interest rates are volatile, and an overdraft for example is technically repayable on demand. The company may finance its operations by taking on further short-term debt, as levels of working capital increase.

Retained earnings

Both debt and equity are sources of finance external to the company. Internal sources of finance may be provided from cash generated by the company in excess of the requirements to finance its operations, and to pay interest, taxation, and dividends. The surplus in cash terms is called retained earnings.

Another source of internal finance may be provided from additional cash resources generated from more effective management of the company's working capital.

Gearing

Gearing, or the debt/equity ratio, is the relationship between the two sources of finance, loans and ordinary shares – a company having more debt capital than share capital is highly geared, and a company having more share capital than debt capital is low geared.

The extent to which the debt/equity is high or low geared has an effect on the earnings per share (eps) of the company:

- if profits are increasing, then higher gearing is preferable
- if profits are decreasing, then lower gearing or no gearing is preferred

Similarly, the argument applies to the riskiness attached to capital repayments. If a company goes into liquidation, lenders have priority over shareholders with regard to capital repayment. So, the more highly geared the company the less chance there is of ordinary shareholders being repaid in full.

The gearing ratios that follow are the two most commonly used:

$$\text{gearing} = \frac{\text{long-term debt}}{\text{equity} + \text{long term debt}}$$

$$\begin{array}{l}\text{debt equity ratio} \\ \text{or leverage (D/E)}\end{array} = \frac{\text{long-term debt}}{\text{equity}}$$

Gearing may also be reflected in earnings/interest relationships in addition to capital values, for example:

$$\text{dividend cover (times)} = \frac{\text{earnings per share (eps)}}{\text{dividend per share}}$$

$$\text{interest cover (times)} = \frac{\text{profit before interest and tax}}{\text{interest payable}}$$

$$\text{cash interest cover} = \frac{\text{net cash inflow from operations} + \text{interest received}}{\text{interest paid}}$$

The weighted average cost of capital (WACC)

The weighted average cost of capital (WACC) is the average cost of the total financial resources of a company, i.e. the shareholders equity and the net financial debt, that may be used as the discount rate to evaluate investment projects, and as a measure of company performance.

If we represent shareholders equity as E and net financial debt as D then the relative proportions of equity and debt in the total financing are:

$$\frac{E}{(E + D)} \quad \text{and} \quad \frac{D}{(E + D)}$$

If we represent the return on shareholders equity as e and the return on financial debt as d, and t is the rate of corporation tax, then the weighted average cost of capital is:

$$\text{WACC} = \frac{E}{(E + D)} \times e + \frac{D}{(E + D)} \times d(1 - t)$$

The market value of a company may be determined by its WACC. The lower the WACC then the higher the net present values of its future cash flows and therefore the higher its market value. The determination of the optimum D/E ratio is one of the most difficult tasks facing the finance director. One of the consequences of this is the problem of calculating an accurate WACC for a company, which is based on its relative proportions and costs of debt and equity capital.

There are many arguments for and against the use of WACC for investment appraisal.

Cost of debt and equity capital

Both the cost of debt and the cost of equity are based on future income flows, and the risk associated with such returns.

The cost of servicing debt capital is the yearly or half yearly interest payment, which is an allowable expense for tax. The cost of irredeemable loan capital to a company may be calculated as follows:

$$d = \frac{i \times (1 - t)}{L}$$

where

d = cost of debt capital

i = annual loan interest rate

L = the current market value of the loan

t = the rate of corporation tax

The market value of the debt is dependent on the level of future returns, the interest rate paid, which is determined by the level of risk associated with the investment.

In the case of equity or ordinary shares the future income is dividends. A difference between this method and the method applied to debt is that there is no tax relief for dividend payments.

The value of an ordinary share may be simply expressed as the present value of its expected future dividend flows.

$$S = v_1/(1+e) + v_2/(1+e)^2 + v_3/(1+e)^3 \ldots\ldots\ldots v_n/(1+e)^n$$

where

e = cost of equity capital

v = expected future dividends for n years

S = the current market value of the share

If dividends are expected to remain level over a period of time the formula may be simplified to

$$S = \frac{v}{e}$$

Therefore, the cost of equity to the company would be

$$e = \frac{v}{S}$$

Dividends payable on a particular share rarely stay constant from year to year. However, they may grow at a regular rate. This so-called dividend based approach to the cost of equity may then be used with the above formula revised as

$$S = v/(e - G)$$

where G = the expected future dividend growth rate

The cost of equity may then be stated as

$$e = \frac{v}{S} + G$$

The cost of equity to a company may alternatively be derived using the capital asset pricing model (CAPM).

Cost of equity and risk, CAPM and the β factor

A certain element of risk is unavoidable whenever any investment is made, and unless a market investor settles for risk-free securities, the actual return on investment in equity (or debt) capital may be better or worse than hoped for.

Unless the investor settles for risk-free securities a certain element of risk is unavoidable.

Investors in companies or in projects can diversify their investments in a suitably wide portfolio. Some investments may do better and some worse than expected. In this way, average returns should turn out much as expected. Risk that can be diversified away is referred to as unsystematic risk.

Some investments are by their very nature more risky than others. This is nothing to do with chance variations in actual compared with expected returns, it is inherent risk that cannot be diversified away. This type of risk is referred to as systematic risk or market risk. The investor must therefore accept this risk, unless he/she invests entirely in risk-free investments. In return for accepting systematic risk an investor will expect to earn a return which is higher than the return on risk-free investment.

The capital asset pricing model (CAPM) may be used to measure systematic risk using what are known as β beta factors.

The CAPM model can be stated as follows:

the expected return from a security = the risk-free rate of return, plus a premiu for market risk adjusted by a measure of the volatility of the security

If

Rs   is the expected return from an individual security

β is the beta factor for the individual security

Rf   is the risk-free rate of return

Rm   is the return from the market as a whole

and (Rm - Rf) is the market risk premium

$$\textbf{Rs} = \textbf{Rf} + \{\beta\ \textbf{x (Rm - Rf)}\}$$

A variation of the above β relationship may be used to establish an equity cost of capital to use in project appraisal. The cost of equity e equates to the expected return from an individual security Rs,

and the beta value for the company's equity capital βe equates to beta factor for the individual security β.

So,

the return expected by ordinary shareholders, or the cost of equity to the company	=	the risk-free rate of return plus a premium for market risk adjusted by a measure of the volatility of the ordinary shares of the compan

$$e = \textbf{Rf} + \{\beta\textbf{e} \; x \; (\textbf{Rm - Rf})\}$$

The CAPM model considers systematic risk only, and is based on an assumption of market equilibrium.

Return on equity and financial structure

The return on equity (ROE) may be considered as a function of return on investment (ROI) and the financial structure, leverage or gearing of the company, where:

D   = debt capital   E   = equity capital
t = corporation tax rate i = interest rate on debt
ROI = return on investment
ROS = return on sales = profit after tax
                         total investment

$$\textbf{ROE} = \{\textbf{ROI} \; x \; (\textbf{1 - } t)\} + \{(\textbf{ROI - } i) \; x \; (\textbf{1 - } t) \; x \; \textbf{D/E}\}$$

The general rule apparent from this relationship is:

- when ROI is greater than i the higher the D/E, the higher the ROE
- when ROI is less than i the higher the D/E, the lower the ROE

However, even if the ROI is greater than the debt interest the company's bankers may not automaticall allow the D/E to increases indefinitely. The company's risk increases as the D/E or leverage increases, in terms of its commitment to high levels of interest payments, and bankers will not tolerate too high a level of risk; they will also be inclined to increase the debt interest rate as D/E increases. Shareholders will have the same reaction - they are happy with an increase in ROE but realise that they also have to face a higher risk.

For a high growth company, to limit the shareholders investment the company will have a tendency to increase D/E and therefore ROE, but also the financial risk.

Economic value added (EVA^{TM}) and market value added (MVA)

Maximisation of shareholder wealth continues to be the prime objective with which managers of corporations are charged. The extent to which success in particular performance measures align with shareholder wealth is particularly relevant. Equally important are the ways in which managers are motivated to maximise shareholder wealth. In most organisations managerial remuneration provides the link between the measures of financial performance and shareholder value.

If we assume that the organisation's objective is to maximise shareholder wealth then this will be achieved if new projects are taken on and existing projects are allowed to continue only if they create value. Investment in capital projects may be made only on the basis of choosing those with a positive net present value (NPV). However, NPV can't be applied for remuneration schemes because it is a summary measure based on projected cash flows and not realised performance.

The recently-developed techniques of economic value added (EVA) and market value added (MVA) are widely becoming used in business performance measurement and as value creation incentives.

EVA supports the same sort of recommendations that NPV provides at the project level, but also provides a better measure of management performance because it rewards for earnings generated, whilst also including charges for the amount of capital employed to create those earnings.

If   Profit after tax = PA   Weighted average cost of capital = WACC
              Net assets = adjusted book value of net capital = NA

then

$$\textbf{EVA} = \textbf{PAT - (WACC x NA)}$$

At a company level, the present value of EVAs equals a business's market value added (MVA). This is defined as the difference between the market value of the company and the adjusted book values of its assets.

EVA is a good financial performance measure because it answers the question of how well has the company performed in generating profits over a period, given the amount of capital tied up to generate those profits.