

If the capital market used by a firm is segmented a firm can reduce the effect of this segmentation by:

- ▶ raising capital on other capital markets – dual listing.
- ▶ undertake direct foreign investments.
- ▶ merge with foreign companies (which are likely to be listed on other markets and undertaking investments in countries other than the company's home country).

If markets are totally segmented then the beta value of the company's domestic equity share should be used to calculate the firm's cost of equity.

At the other extreme if the market were fully integrated the company should use a world equity beta value.

In practice capital markets are likely to be between these two extremes suggesting use of a beta value between the two extremes. For a firm based in the UK this means a beta value which is:

- ▶ lower than the beta value on the London market.
- ▶ higher than the world beta value for that security (assuming we can measure the world beta value!).

A more prudent approach would be to use the beta on the UK market since this is the beta value to use for domestic projects and it allows for the possibility that a proportion of UK investors are not diversified internationally.

The international cost of capital

The cost of capital, which we have already encountered several times in this book, or weighted average cost of capital (WACC) of a firm is the weighted average of the required returns of each of the providers of a firm's finance.

The cost of capital is relevant for two reasons:

- 1 The financing decision. Is it possible for the managers of a firm to reduce the cost of capital by choosing an appropriate mix of finance? We addressed this issue in Chapter 7 and, in the international context, in Chapter 27.
- 2 The investment decision. When undertaking an investment what discount rate should we use? This is the theme of this section.

The WACC as a discount rate

To recap, the two main conditions that must be satisfied for us to use the firm's existing WACC as the discount rate are:

- ▶ the investment being undertaken needs to have a similar level of systematic risk as the firm's existing investments. (We assume shareholders of the company hold the shares as part of a well diversified portfolio so that the relevant risk is the systematic risk.)
- ▶ the way the project is financed must not affect the company's level of gearing.

We now need to determine the cost of capital in the context of an international investment.

How is the cost of capital affected by:

- ▶ an international project which alters the firm's total risk. A foreign investment increases the firm's political risk and currency risk which are unsystematic but it may well reduce the variability of the firm's overall cashflows.
- ▶ the international portfolio effect: if the overseas project enables the firm to reduce the level of systematic risk of the holding company's shareholders. The firm may

be able to achieve diversification that is not otherwise possible for shareholders to achieve.

- ▶ a project which has a different level of systematic risk to that of the firm's existing activities.

The cost of capital and total risk

There are two ways we can take into account total risk when appraising an international investment project:

- ▶ allow for risk by adjusting the discount rate.
- ▶ incorporate the effects of risk into the project cashflow forecasts. If this approach is used the discount rate to use would be adjusted for systematic business risk and financial risk in the same way as for a domestic project.

Comparison of these two approaches

Political risk can refer to the possibility of expropriation of assets at some unknown time in the future (if the possible expropriation is imminent the investment is unlikely to go ahead). The political risk is more significant for future cashflows. If this risk is adjusted for in the discount rate it affects all cashflows.

Currency risk can have a favourable or adverse effect on the value of project cashflows (depending on whether the cashflows are costs or revenues and whether the change is an appreciation or depreciation in value of the currency. This two-sided effect of the risk can better be analysed by incorporating the possibilities into the cashflow forecasts (for example by projecting a range of possible outcomes rather than a point estimate or by using sensitivity analysis) rather than by adjusting the discount rate.

It is worth mentioning that, for foreign projects, many firms in practice add a premium for risk to the discount rate.

The international portfolio effect

In the previous section we looked at the degree of correlation between 15 major stock markets. This showed us that there is scope for investors to reduce the systematic risk on a portfolio by diversifying internationally. We also saw that some stock markets and therefore economies are more closely correlated than others. If a firm based in one country is thinking of investing in one of the other countries this correlation is an important indicator of the level of systematic risk of the investment. The lower the correlation coefficient the lower the level of systematic risk is likely to be. This means that the systematic risk on an overseas investment is likely to be less than the systematic risk of an equivalent domestic project. This suggests that the discount rate for the overseas project should be lower.

Whether this is practical depends on the shareholders' view of an internationally diversified firm. Are shareholders prepared to accept a lower return on the shares (that is a lower cost of equity) of an internationally diversified firm because it enables the shareholder to reduce their 'domestic' systematic risk (that is risk that is systematic in the context of the shareholder's own country but unsystematic when viewed in the international context)?

In the previous section we mentioned that investing in a multinational firm is only one way of achieving international diversification. The shareholder can also diversify away part of his/her 'domestic' systematic risk by investing in international funds which are professionally managed. The multinational firm may provide the facility for international diversification that would not otherwise be possible (a shareholder may be prevented from investing in certain economies). If the firm is undertaking an investment which achieves diversification (that is risk reduction) the

shareholder could not otherwise achieve the firm would be justified in using a lower discount rate to reflect this beneficial risk reduction.

If the multinational undertakes an investment in a country where the shareholders can easily invest themselves there is unlikely to be any diversification benefit to the shareholders. They could more easily achieve diversification via the professionally managed international fund. This suggests that the firm should not use a lower discount rate for the foreign investment.

This question is important because, by reducing the discount rate, the firm may be able to undertake projects that would not otherwise be worthwhile.

Which beta value should we use?

If world stock markets were integrated then we should use a world beta value, a world risk free rate and a world return on the market.

This contrasts with a UK investor using the return on the London stock exchange as the market return and a UK risk free rate. This latter approach implies that the world market is segmented.

In reality the world market is somewhere between these two extremes which suggests we should take values between the two extremes.

A project which has a different level of systematic risk to that of the firm's existing activities

The discount rate for evaluating an individual investment must take into account the risk profile of that investment particularly if it differs from the average level of risk of the company as a whole (since this average risk level will determine the company's cost of capital). If the investment is in a different area of business to the firm's existing activities it will be necessary to estimate the level of systematic risk for the investment. This can be done by using the beta values of firms in the same industry as the new investment and adjusting those beta values for differences in gearing.

Should these firms be in the same country as the firm making the investment or in the country in which the investment is being made?

The answer depends on whether the world's stock markets are segmented or not.

If they are segmented then, since we are trying to identify the risk of the investment we need to look at the economy in which the investment is based. If we are investing in a project in Spain that project will be subject to the systematic risk of the Spanish economy. This may be difficult if the investment is in a country without a stock market; if this is the case the company would be forced to use the beta for the industry in the country in which the holding company is based.

The beta value should then be adjusted to the level of gearing of the holding company. The relevant level of gearing is the overall gearing for the group as whole, that is not the gearing of the individual subsidiary. This is because the subsidiary's gearing level may be dictated by other considerations (for example tax).

If the world's stock markets were fully integrated then using companies quoted on either market should produce the same beta value since they would be part of the same world market.

EXAMPLE 28.8

Durgesh PLC is a UK based multinational company which is mainly involved in the tobacco industry. As part of a strategy to diversify its activities Durgesh is proposing to set up a food manufacturing plant in France. The finance director of Durgesh is confused as to what to use as a discount rate for the project and has asked your advice. He has given you the following details which may be of assistance:

