

Chapter 18

WHEN (AND WHEN NOT!) TO USE THE WACC FOR INVESTMENT APPRAISAL

1. Introduction

In the previous chapter we looked at the calculation of the Weighted Average Cost of Capital. This is often used as the discount rate for investment appraisal, but as we will consider in this chapter, it is only suitable in certain circumstances.

In this chapter we will discuss the factors involved in determining an appropriate discount rate, and in the following chapters look at the calculations involved.

2. The Weighted Average Cost of Capital

In the last chapter we looked at the following example:

- J plc is financed as follows:
- Equity – 5 million \$1 shares quoted at \$2.50 cum div, on which a dividend of 32c per share is about to be paid.
- Debt - \$4M 8% debentures quoted at 92 ex int.
- Corporation tax is 30%
- Calculate the WACC to the company

We calculated the Return to Shareholders, and hence the Cost of Equity to be 14.68%,.

We also calculated the Return to Debt lenders as being 8.70%, and therefore the Cost of Debt (after tax) as 6.09%.

It is not surprising that the Cost of Equity is higher than the Cost of Debt.

There are two reasons for this:

- (a) Equity lenders require a higher return (14.68%) than Debt lenders (8.70%) because equity lenders accept more risk than debt lenders. They accept the risk that their dividends stand to fluctuate, whereas debt lenders are guaranteed a fixed interest receipt each year (provided of course that the company does not perform too badly).
- (b) Debt interest attracts corporation tax relief, whereas dividends do not. This makes debt borrowing cheaper still for the company.

We then calculated a Weighted Average Cost of Capital of 12.51%. This is certainly the current overall cost of capital to the company, but what we require, for the purposes of investment appraisal, is the cost of the extra finance to be raised for the new investment.



There are two reasons why the cost of this additional finance raised is likely to be different from the current cost of capital.

- **Changes in the level of gearing**

If, for example, the new finance is to be raised entirely from equity, then two things will happen.

Firstly, the level of gearing in the company will change, and this clearly will effect the weightings when we come to calculate the WACC.

Secondly, higher gearing will increase the level of risk for the shareholders (you will remember this from your previous studies) and therefore shareholders are likely to require a higher rate of return, which will in turn increase the cost of equity.

As a result, the WACC is likely to change as a result of the way in which the new finance is raised.

- **Changes in the level of business risk**

One factor that will influence the current cost of equity (and hence the current WACC) is the level of risk of the business of the company. Shareholders of a company engaged in a risky type of business are likely to require a higher return than shareholders in a less risky business.

If more finance is to be raised in order to invest in a new project, then the riskiness of the project will effect the shareholders' required rate of return. The more risky the project the higher return that they are likely to demand. As a result, the WACC is again likely to change depending as to how risky the new project is.

3. When to use the WACC for investment appraisal

As a result of the above discussion, it is only reasonable to use the current WACC when we can be sure that the cost of the new finance will be the same as the current WACC. We can only be sure of this if two conditions apply:

- **The level of gearing in the company will remain unchanged**

If the new project is financed part equity and part debt, in such a way as to keep the level of gearing unchanged, then the first of the two factors in the previous section becomes irrelevant.

and,

- **The new investment carries the same level of risk as the existing activities of the company**

If both of these factors apply, then it is reasonable to assume that the WACC of the company will remain unchanged and that therefore the cost of the additional finance will be equal to the existing WACC. We can therefore appraise the project at the existing WACC.



4. What if the conditions for using the current WACC do not exist?

If either the level of gearing changes, or the level of business risk changes, then it is not valid to use the current WACC as the discount rate for the new investment. We need to know the cost of the additional finance for the project and therefore need to be able to measure the effect of changes in gearing and changes in business risk.

We will consider these in the following chapters.

In the next chapter we will look at the work of Modigliani and Miller who investigated the effect of gearing. In the following chapters we will look at Portfolio Theory and (more importantly) the Capital Asset Pricing Model, which consider the effect of business risk. We will then put the two together and develop an overall model for determining how to appraise projects.

Do however make sure that you are happy with the logic of this chapter. In an examination, if you are given no information about how a project is financed and about the business risk of the project, then you assume that both remain unchanged and you do discount at the current WACC as calculated in the previous chapter. If, on the other hand, one or both of the factors do change then you will need the theories presented in the following chapters.



