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handbook of corporate finance

A business companion to financial markets, decisions and techniques

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HANDBOOK OF CORPORATE FINANCE

This changes the valuation under the entity approach:

Annual EP = Profit after tax before interest – Capital × Required rate of return
Annual EP = £25m – (£100m × 16.67%) = £8.33m

Corporate value = Initial total capital + Present value of annual economic profit
Corporate value = £100m + £8.33m/0.1667 = £150m

Equity value = Corporate value – debt value = £150m – £50m = £100m (the same as under the equity approach)

Under the WACC-adjusted-for-market-value-of-equity approach we observe a fall in the annual EP when using the entity approach from £10m to £8.33m because we, correctly, require 20 percent return on two-thirds (£100m) of capital employed out of a total of £150m (at market values).

What is the practical manager to do? In theory you should be using the market value proportions of debt and equity that are optimal for your firm for all projects, SBUs and for valuing the entire firm. That is, the firm should have target levels of debt relative to the equity base that produces the lowest WACC (see Chapter 10).

The reality in most firms is that the optimum mix of debt and equity is unlikely to be known with any precision as the factors determining the optimum, at base, can only be quantified through subjective probability estimates, e.g. the chance of financial distress (see Chapter 18). So, it is reasonable to think of the optimum proportions of debt and equity as a range rather than a pin-point percentage. For most firms the reasonable range is quite large. It could easily run from 50:50 gearing to 33:66 gearing. The advice to think in terms of a range for the WACC is reinforced by the many difficulties in other inputs to the WACC calculation, from the cost of equity (what is the risk premium? Is beta the appropriate adjustment for risk?) to the risk free rate of return – *see* Chapter 10.

Given the complications with the WACC under the entity approach many analysts would simply plump for the equity approach in the first place.

6 Notice that EVA is derived from the entity EP rather the equity EP because the WACC contains an allowance for a return to all finance providers, including debt holders. Therefore the 'adjusted invested capital' is equity plus debt.

7 Quoted in *Management Today*, January 1997, p. 45.

8 David Turner, CEO of Brambles, quoted in the *Financial Times* 27 December 2005, p. 13.

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ENTIRE FIRM VALUE MEASUREMENT

Introduction

This chapter describes five 'market-based' measures of value performance. The feature common to all these measures is the focus on the stock market's valuation of the company. Total shareholder return (TSR) measures the rise or fall in the capital value of a company's shares combined with any cash payment, e.g. dividends, received by shareholders over particular periods of time, be it one year, three years or ten years. This gets to the heart of the issue for owners of companies – what return do I get on my shares from the activities of the managers hired to steward the resources entrusted to them?

The Wealth Added Index (WAI[1]) examines the change in share values after allowance for the required rate of return over the period of time examined. Two other metrics, Market Value Added (MVA[2]) and Market to book ratio (MBR), also examine the current share price in the market (together with the value of debt). However, rather than track share return performance through time these metrics relate the current market values to the amount of capital put into the business by the share owners (and lenders) since its foundation. If the company's strategic and operational actions have been robust in the pursuit of shareholder value then the current market value of the equity and debt should be significantly greater than the amount placed in the directors' hands by the purchasers of shares, through the retention of profits and the lending of debt capital. If, however, the market currently values the shares and the debt at less than the amount put in we know for sure that value has been destroyed.

The observation of a positive difference between current valuation and amount injected may or may not mean value has been generated. This depends on whether the investment made by shareholders and debt holders produced a sufficient *rate* of return given the time period over which the money was held in the stewardship of the directors. So, for example, if a firm founded 15 years ago with £1m of shareholder capital and £1m of debt paid out no dividends and received no more funds from finance providers is now valued at £3.56m for its shares and £1m for its debt, we need to know the required rate of return on equity for this risk class given the shareholders' opportunity cost to judge whether the annual rate of return of around 8.8 percent is sufficient. (Chapter 10 discusses how to calculate required rates of return.) Excess return, ER, is a modified MVA, allowing for this opportunity cost of capital over the period.

These five metrics can only be used for 'entire firm' assessments for a select group of companies – those with a stock market price quote (around 3,000 UK companies). Also note that these metrics cannot be used for analysis of parts of the business, such as a strategic business unit, due to the absence of a share price for a section of a company.

The metrics discussed in the previous chapter, on the other hand, can be used both for disaggregated analysis and for the entire firm. So it makes sense to think in terms of there being at least nine whole-firm value metrics available. These should not be thought of as mutually exclusive but complementary if calculated and viewed with sufficient informed thought.

Total shareholder return (TSR)

Shareholders are interested in the total return earned on their investment relative to general inflation, a peer group of firms, and the market as a whole. Total returns includes dividend returns and share price changes over a specified period. For one-period TSR:

$$\text{TSR} = \frac{\text{Dividend per share} + (\text{Share price at end of period} - \text{Initial share price})}{\text{Initial share price}} \times 100$$

Consider a share that rises in price over a period of a year from £1 to £1.10 with a 5p dividend paid at the end of the year. The TSR is 15 percent.

$$\text{TSR} = \frac{d_1 + (P_1 - P_0)}{P_0} \times 100$$

$$\text{TSR} = \frac{0.05 + (1.10 - 1.00)}{1.00} \times 100 = 15\%$$

When dealing with multi-period TSRs we need to account for the dividends received in the interim years as well as the final dividend. The TSR can be expressed either as a total return over the period or as an annualized rate.

So, for example if a share had a beginning price of £1, paid annual dividends at the end of each of the next three years of 9p, 10p and 11p respectively and had a closing price of £1.30, the total average annual return (assuming dividends are reinvested in the company's shares immediately on receipt) is calculated via internal rate of return (see Chapter 2 for an introduction to IRR):

Time	0	1	2	3
Price/cash flow (p)	–100	9	10	11+130

$$-100 + \frac{9}{1+r} + \frac{10}{(1+r)^2} + \frac{141}{(1+r)^3} = 0$$

At:
$r = 19\%$: –1.7037
$r = 18\%$: 0.6259

$$\text{The internal rate of return} = 18 + \frac{0.6259}{0.6259 + 1.7037} = 18.27\%$$

The annualised TSR is 18.27%.
The total shareholder return over the three years = $(1 + 0.1827)^3 - 1 = 65.4\%$.

TSRs for a number of periods are available from financial data organizations such as Datastream and on most financial websites (e.g. www.advfn.com).

TSR (often referred to simply as 'total return') has become an important indicator of managerial success:

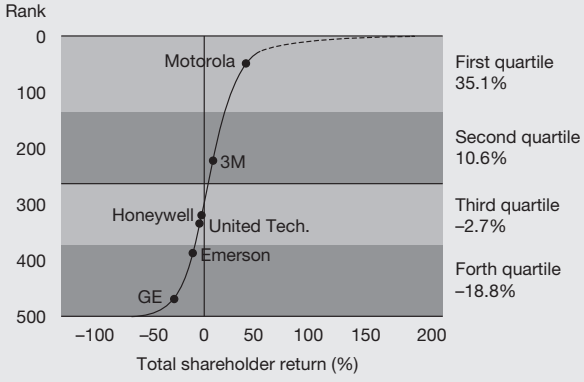
Performance against this type of measure is now used as the basis for calculating the major component of directors' bonuses in over half of FTSE 100 companies . . . TSR reflects the measure of success closest to the hearts of a company's investors: what they have actually gained or lost from investing in one set of executives rather than in another.

(*Management Today*, March 1997, p. 48.)

Exhibit 9.1 shows the one-year TSR for a number of US and European companies.

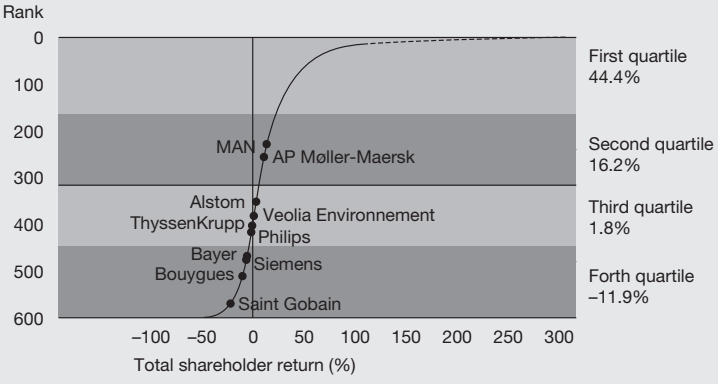
US and European conglomerates* ranked by total shareholder returns

US conglomerates with average value creation
S&P 500, year to Jul 2 2009



Source:

European conglomerates with below average value creation
DJ Stoxx 600, year to Jul 2 2009



Bloomberg/Thomson Reuters Datastream * Defined here as a group with at least three business segments that each contribute more than 10% to total revenues

EXHIBIT 9.1

Source: *Financial Times* 13 July 2009, p. 21.