THE REINVESTMENT DECISION

IN PART TWO IN A SERIES OF THREE ARTICLES, BEN WALTERS SETS OUT HIS VIEW ON HOW CORPORATES CAN CALCULATE THEIR REINVESTMENT LEVELS

It is commonly understood that you have to invest and achieve a return often far higher than the weighted average cost of capital (WACC) in order to meet the profit and growth targets markets expect. But how does that reconcile with corporate finance theory, which states any return greater than WACC adds value and should therefore be pursued? In last month's *Treasurer*, I introduced the bridge between these two perspectives, which I've called MWACC*.

MWACC is the internal hurdle rate for the firm. WACC is the external cost of capital to the firm; the return that investors require from the firm. Realising the strategic value external investors have assigned to the firm requires that the firm invests in projects where the return is greater than WACC whenever one or more of these conditions holds true:

1. The firm is perceived to have a strategic position that will lead to future value creation; or
2. There is a restriction on the new investments the firm can make either through capital, management time or horizon period.

Both of these are relatively simple inputs to estimate and, from these, along with an estimate of WACC, it is possible to calculate MWACC.

MWACC has three uses to a firm. First, I would argue that it is the correct hurdle rate for investment decisions by the firm. Second, it can be used to determine the correct reinvestment level. And third, it can be used to derive performance targets linked directly to value creation.

This article examines how it can be used to determine the correct level of reinvestment back into the business and how getting this right can maximise the value of the firm. This analysis is, I would argue, an absolutely critical factor in maximising the value of the firm, far more so, in fact, than the traditional approach of optimising WACC through the debt-equity ratio.

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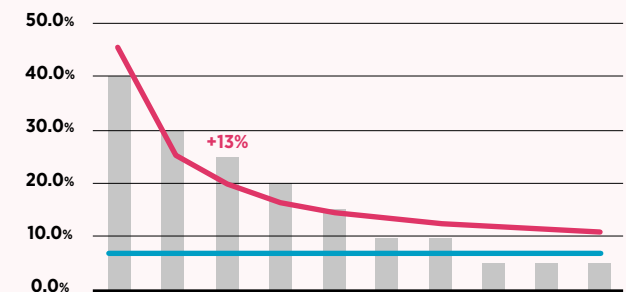
Reinvestment

It holds true in the real world that capital is a scarce resource. Firms only have their internally generated capital and a finite debt capacity to reinvest in normal circumstances. The less capital retained and reinvested, the higher MWACC becomes because the strategic value that investors have assigned to the firm must be created from a diminishing pot. Figure 1 (right) shows this for a notional firm A and also imposes the firm's estimate of its return on investment (ROI) at varying levels of reinvestment. For example, the first 10 units of capital invested cherry-picks projects with an ROI of 40%, but this drops away so that by the time capital of 80 is invested, the return is only 5% across the spectrum.

In order to maximise its value to investors, firm A is looking for the point at which its return gap (see box, below) is at its greatest. For firm A that point is at a reinvestment of 30 of its available capital of 100, even though ROI after this point up to a reinvestment level of 70 is still above WACC (also plotted). Capital invested from 40 to 70 is invested in projects that begin to dilute the return gap and the firm is better off returning cash to investors. Firm A should set its payout level at 70% of available capital and at this level, investor returns will beat WACC. This will lead, in theory, to an increase in enterprise value (EV) of 13% to the point at which these returns normalise against WACC.

FIGURE 1: Return on investment: firm A

EV = 2,000 **PAT** = 100 (capital) **WACC** = 7.5%



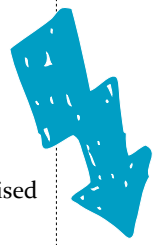
	10	20	30	40	50	60	70	80	90	100
Expected ROI	40.0%	30.0%	25.0%	20.0%	15.0%	10.0%	10.0%	5.0%	5.0%	5.0%
WACC	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%
MWACC	45.0%	26.3%	20.0%	16.9%	15.0%	13.8%	12.9%	12.2%	11.7%	11.3%

Expected ROI WACC MWACC

MWACC plotted against ROI opportunities at varying levels of capital retained

Return gap

The answer to the reinvestment decision lies in the return gap between MWACC and the firm's internal assessment of its ROI profile. Maximising this return gap (if positive, ie firm A) or minimising it (if negative, ie firm B) optimises the value of the firm. The return gap is calculated as set out below:

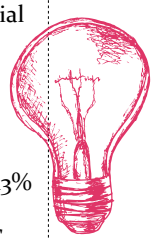


(ROI - MWACC) x capital invested = return gap

The return gap is optimised at the point at which the firm's returns from incremental investments begin to fall below WACC. For example, firm A at a reinvestment level of 30 has a return gap of:

(25% - 20%) x 30 = 1.5

If we make the simplifying assumptions that this return is a perpetuity and that firm A will be able to make this excess return every year into the future (another perpetuity) at a reinvestment level of 30, then the potential additional value this will generate over the current enterprise value is:



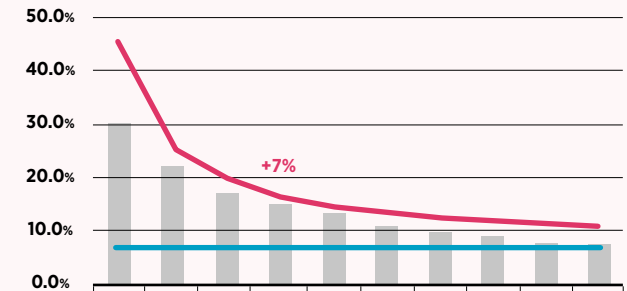
1.5 x (1/7.5%*) x (1/7.5%*) = 267 = an increase in EV of 13%

*7.5% being firm A's WACC

Firm B (see figure 2, above) has an identical EV, PAT (capital) and WACC as firm A, but it has a problem – it is unable to beat its MWACC at any level of capital reinvestment, even though it can make investments that beat WACC.

FIGURE 2: Return on investment: firm B

EV = 2,000 **PAT** = 100 (capital) **WACC** = 7.5%



	10	20	30	40	50	60	70	80	90	100
Expected ROI	30.0%	22.0%	17.0%	15.0%	13.0%	11.0%	10.0%	9.0%	8.0%	7.5%
WACC	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%	7.5%
MWACC	45.0%	26.3%	20.0%	16.9%	15.0%	13.8%	12.9%	12.2%	11.7%	11.25%

Expected ROI WACC MWACC

Firm B is overvalued, but it can minimise the impact by reinvesting 40 of its available capital and returning the remaining 60 to investors

Firm B has investments across the spectrum of its capital available that are net present value positive (when discounted against WACC), but are negative versus MWACC. Firm B is overvalued because wherever it pitches its reinvestment level, it cannot generate enough value to justify its current EV of 2,000. However, the firm can minimise the loss to its investors by setting a reinvestment level of 40 and paying out the remaining 60 of capital to its investors.

Of course, no one is suggesting that you can be this precise in real life, but firm B's management has the information available to it, if it knows where to look, to set an optimum reinvestment level and minimise the loss of value to its investors.

Building the ROI profile

Firms rarely build an ROI profile across the spectrum of their available capital for reinvestment. This analysis though is critical to optimising the value of the firm. Although subjective and hard to measure (not least because it is a concept not likely to have been adopted before), any planning cycle should incorporate this analysis in order to support the payout and reinvestment decision. Overlay MWACC onto this profile and this type of analysis immediately adds insight into the optimal level of reinvestment, maximising investor returns and the value of the firm.

As with many applications of corporate finance theory to business decision-making, it is often not the detailed

calculations that drive out value, but the thought process that following these principles enforces. In this situation, aligning the budget and planning cycle to a consideration of how much the cash flows from the business would be expected to change at varying levels and helps to define the level of reinvestment and investor payout that maximises firm value.

In a world where constraints on investments exist and the firm is considered to have a strategic position of value, MWACC is always higher than WACC. MWACC should be used for all investment-appraisal decisions. In addition, considering MWACC against the ROI profile across the range of reinvest levels informs the firm of its optimal level of reinvestment and, by consequence, payout. This analysis is a critical element in maximising the value of the firm.

In the next article, we'll place MWACC at the heart of the way the firm measures internal performance, and in so doing align this to the value created or destroyed by management actions.

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