

ECONOMIC PROFIT

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Synopsis

Most firms report accounting profit as both an internal and external performance measure. However it suffers from the serious defect that it only partially recognises the cost of capital. It recognises the cost of debt but does not recognise the cost of equity. Consequently it does not tell us whether the profit earned is enough to cover all costs.

Further, many firms estimate operating free cash flow for assessing projects and/or for valuing a business using Discounted Cash Flow ("DCF") techniques. However this measure is neither used to set as a target for performance assessment and rarely report upon.

Use of Economic Profit overcomes these flaws and is easy to measure, use and understand. It is an extremely intuitive and powerful metric. A positive economic profit stream signals that the business has a competitive advantage and/or is operating in an attractive market. In this way it establishes a like between the market for products / services and the capital market.

It is surprising that it is not used as the standard metric for internal and external use.

The Measure

Economic Profit¹ ["EP"] is a performance measure that links internal business performance with the requirement of investors in the capital market. The measure is most useful in the context of management focussing on creating and delivering value for shareholders and for informing Boards on how well the business is meeting the Board's legal obligations to shareholders.

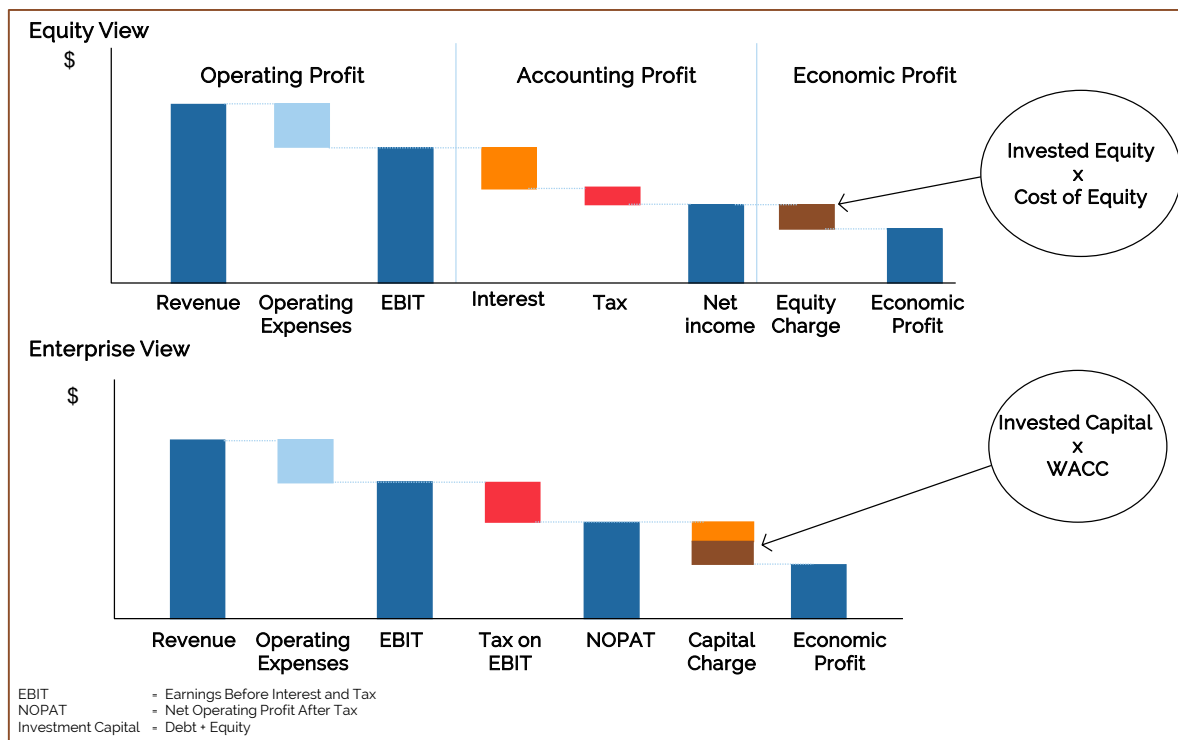
The link to the capital market is achieved by incorporating investor's required rate of return explicitly as an expense of the business. If the business earns a positive Economic Profit in a year then it has met the required return of all investors for that year. Further it signals that the business is winning in its chosen markets as a positive economic profit stream is consistent with achieving a competitive advantage (and/ or operating in an attractive market).

The measure differs from traditional accounting profit because it includes an expense for the required return of shareholders. While accounting profit does include an expense for the required return of debt investors by way of interest it does not include a similar expense for the required return of shareholders i.e. accounting profit treats equity as 'free', which, of course it isn't! In fact shareholder will require a higher 'interest' rate, or required rate of return than debt investors because they bear more risk.

The top half of Figure 1 depicts the essential difference between accounting profit and Economic Profit. The difference is the inclusion in Economic Profit of the 'interest' charge for equity calculated as shareholders' funds multiplied by the required rate of return on equity. Here shareholders' funds represent the amount shareholders have 'lent' to the company.

¹ The use of the term here is different from that used by economists. Typically economists will include the change in value as well as the in period flow in economic profit. The usage here focussed on the flow alone. Unfortunately the common usage nomenclature is poor. I think the terms Residual Income and /or Residual Operating Income are better however I've stuck with more common usage here.

Figure 1: Economic Profit Defined



The more common usage and definition of Economic Profit is presented in the bottom half of Figure 1. In this case the interest charge on debt and the equity charge are combined into one capital charge. The weighted average cost of capital captures the required return of debt and equity investors. This is multiplied by invested capital to determine the capital charge. Here invested capital is the sum of debt and equity capital and represents the capital these investors have directly 'lent' or invested in the company.

This more common usage of EP is calculated as:

$$\text{Economic Profit} = \text{NOPAT} \text{ less Capital Charge}$$

Where:

NOPAT = $\text{EBIT} (1 - \text{tax rate})$ i.e. the tax is based on EBIT and doesn't recognise the effect of interest on tax

EBIT = Earnings Before Interest and Taxes

Capital Charge = $\text{Invested Capital} \times \text{WACC}$

Invested Capital = Debt + Equity (also Total Assets – non interest bearing liabilities)

WACC = weighted average cost of debt and equity (after corporate tax).

Equally it can be expressed as:

$$\text{Economic Profit} = \text{Invested Capital} \times (\text{ROI} - \text{WACC})$$

Where

$$\text{ROI} = \text{Return on Invested Capital} = \text{NOPAT} / \text{Invested Capital}$$

$$\text{NOPAT} = \text{ROI} \times \text{Invested Capital}$$

Economic Profit therefore measures, in dollar terms, internal business performance relative to external capital market required performance. It answers the question:

"does the investment provide a return greater than that required by investors?"

If the EP number is positive then the business exceeded capital market requirements and value was created in that year. The converse holds for a negative Economic Profit.

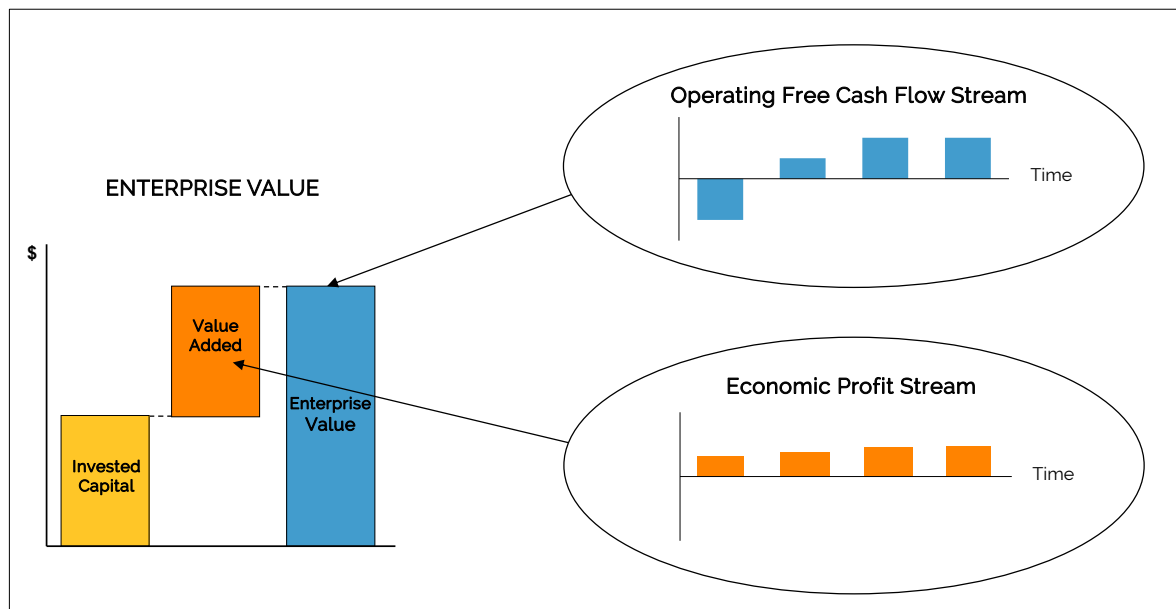
While it can be used as a single year measure of the value created or eroded, the measure can be directly linked to a view of long term value.

Link to Business Value

Long term value is defined in terms of discounted cash flows ["DCF"]. Typically business value is the present value of a profile of expected operating free cash flow over time. Enterprise value is depicted as the height of the so-named bar in Figure 2.

Also shown in Figure 2 is value created. Value created here is the difference between enterprise value and the capital invested to generate the cash flow stream over time. This captures, at a point of time, the amount of value the business expects to generate over and above the cost of capital given the cash invested to generate the cash flow stream.

Figure 2: Using EP to derive Enterprise Value



Value created can also be estimated as the present value of the projected Economic Profit stream over time. Thus enterprise value is simply the sum of capital invested and value created.

Value created as used here is the same concept as the Net Present Value ["NPV"] concept used in evaluating investment opportunities i.e. the present value of expected cash flows less the initial investment. Initial investment is the cash required to get the project off the ground!

This is a powerful feature of EP. It can be used to assess whether a project or strategy is expected to create value (as is the case with typical NPV analysis) then the same numbers can be used in performance assessment. Used in this way EP avoids the confusion of using Operating Free Cash Flow for assessing projects and strategies but using Accounting Profit for assessing actual performance.

Alignment of these to process with one measure avoids confusion, easily encourages a focus on value creation and makes enormous sense.

Benefits of Using Economic Profit

Estimating business value by the Economic Profit approach provides an effective bridge between techniques used for decision making and techniques used for performance management – one that is missing in most organisations that use 'traditional' cash flow based approaches. EP can be used for investment decision analysis as well as performance management purposes. This effective bridge is summarised in Figure 3.

Figure 3: Overcoming the "great mismatch" by providing an effective bridge

- **Creating and delivering shareholder value** is the primary objective for decision processes
 - shareholder value is forward looking and is based on expected operating free cash flow ["OFCF"]
 - some **decision management** processes (not all) look at DCF and OFCF (e.g. capital budgeting)
- However few **performance management** systems are based around free cash flow – they tend to be based around accounting systems (e.g. EBIT, NPAT), thus
 - there is often misalignment between decision management processes and decision control processes - **"the great mismatch"**
 - they can reinforce decision making that is not consistent with increasing shareholder value
- There are ways of drawing these two strands together and these are receiving closer attention e.g. **economic profit** type measures
 - these provide a consistent framework to align decision management and performance management throughout an organisation with the goal of creating and delivering value
- Absolute return on invested capital type measures provide an **effective bridge** between accounting and cash flow approaches - they
 - are consistent with the finance cash flow based decision focus
 - are relatively easy to "adapt" from accounting numbers
 - can be used as both a forward looking (decision making) tool and a backward looking (performance measurement) tool thereby providing a consistent framework to align decision making and motivation throughout an organisation focused on improving the company's value.

A business with an explicit focus on creating and delivering value for investors, will value its strategic or business plans. This requires forecast financial statements which, in turn, provide the EP profile for valuation purposes and therefore the output captured in Figure 2. Note that the output can include a value per share which can be contrasted with the markets view to identify and inform any value gap.

This profile provides a number of benefits. Two are:

- There will now be a set of target annual EP's that if delivered will deliver the plan. This can feed the budget, reporting and remuneration processes;
- There is a basis to assist in testing the logic of the strategy underlying the plan. A positive EP profile implies some combination of an attractive market and sustainable competitive advantage. Is it reasonable? The strategic assessment of market economics and relative competitive position of the business should link to this outcome. Note that a zero EP profile would be expected in a competitive market so a competitive advantage is required to do better than this.

Comparison with Other Performance Measures

Figure 4 summarises a set of criteria for evaluating performance measures as well as an assessment of Economic Profit against a number of alternatives or supplements.² Using this set of criteria it is clear the Economic Profit jumps the most hurdles.

One criterion may require explanation, particularly with reference to the contrast of return measures (e.g. ROI, ROE, ROA) with Economic Profit. The fourth row in Figure 4 asks whether the measure induces behaviour conducive to value maximising behaviour.

Consider a business that is currently earning an ROI of 15% and its cost of capital is 8%. It is clearly doing well. Suppose there is large investment opportunity costing \$100m that has an ROI of 11% pa (for simplicity assume this is a perpetuity or an IRR). Undertaking the project will therefore dilute the overall business ROI (11% being lower than 15%). If the business is rewarded by ROI performance then management will reject the investment opportunity even though it is value creating.

However the opportunity has a positive Economic Profit profile and a positive NPV:

$$\$100\text{m} \times (0.11 - 0.08) = \$3\text{m}$$

i.e. it creates value and should be accepted.

A clear challenge with return measures as performance measures is that they encourage performance to increase the return. This is not the best objective. It should be to increase the spread between the return and the cost of capital.

If the business is not earning its cost of capital surely increasing the rate of return is appropriate? Well yes but only if the projects undertaken are earning above the cost of capital. Suppose the current ROI is 5%, the cost of capital is 8%. Taking on a project with a 7% ROI for example will increase the overall firm ROI but destroy even more value.

A performance focus on increasing the EP profile will encourage acceptance of the project in contrast to a focus on a return measure like ROI or ROA which will encourage rejection.

² See a separate paper on Performance Measures

Figure 4: Single period performance measure assessment

Criteria	Explanation	Performance Measures				
		Profit	ROI, ROE	ROA	Economic Profit	EVA type
Linked upstream to value and product market position	<i>Decisions are taken in the context of their impact on value and competitive position</i>	✗	✓	✗	✓	✓
Linkable downstream to operations	<i>Overall value targets and performance can be disaggregated into operational measures</i>	✗	✓	✗	✓	✓
Linked to required rate of return (capital market's 'needs')	<i>Cost of capital is factored into all key decisions</i>	✗	✓	✗	✓	✓
Induces behaviour conducive to maximising value	<i>People are motivated to maximise value (as opposed to maximising revenue, profit etc)</i>	✗	✗	✗	✓	✓
Considers both P&L & Balance Sheet	<i>Ensures that no key decision is made with out understanding both P&L and Balance sheet implications</i>	✗	✓	✓	✓	✓
Easy to understand and communicate	<i>Ensures widespread take up and acceptance</i>	✓	✓	✓	✓	✓
Low cost in preparation	<i>Avoids unnecessary work and adjustments that do not have a material impact on decisions and performance</i>	✓	✓	✓	✓	✗

It is important to remember that all single year measures will have deficiencies from a value perspective because value is long term. In this context it is the overall **profile of performance** that becomes important to examine, not any year on a stand-alone basis.

By way of example, a start-up new route may produce a negative EP in the early years however as customer awareness, behaviour and usage rises, the early stage negative profile will change to positive. It is whether the overall present value of the EP profile is positive is the important question, not that the EP may be negative or positive in a particular year.

Definition of Invested Capital

One question that often arises is around what the appropriate definition or source of 'Invested Capital.' In the outline so far it has been discussed in terms of capital provided to the company by debt and equity investors. With no marking to market of asset values, this will usually be equal to the sum of book value of debt and equity.

However there can be other bases e.g.

1. adjusted book value (adjusted by capitalising leases, adjusting items which may have been fully expensed in a particular year when they may be more of an investment nature e.g. R&D, corporate advertising);
2. replacement cost of assets;
3. market value of the business (if listed).

1. Adjusted Book Value: Some argue that an adjusted book value is the appropriate base for estimating Economic Profit – as noted, it is argued that all leases should be capitalised and added to the invested capital base while the financing component is removed from the lease charge; that there are a number of items of expenditure that are usually expensed but are really of a capital nature which should be capitalised and subsequently amortised e.g., R&D.

While this is conceptually sound (given cash invested by shareholders is viewed as the appropriate base) there is a trade-off between complexity and benefit. An important question to ask is whether the adjustments give directionally different signals. This is a matter for

assessment in the particular circumstances. We usually make a small number of adjustments and these will vary by industry.

2. Replacement cost of assets: This may be useful for evaluating whether the investment would warrant 'refreshing' given forecast performance. This was the original based used in regulatory hearings that set prices for monopoly assets e.g. utility distribution and transmission assets, airport landing charges.

3. Market Value of business or asset: This is not particularly meaningful for evaluating investment opportunities. The present value of the EP stream would be zero in this case if the market value reflects the present value of an expected cash flow stream.

Changing the definition and therefore the size of the investment base will change the size of the EP stream but not the value of the stream. In Figure 2 for example, changing the definition of capital invested will change the sizes of the value created 'bar' and the size of the invested capital 'bar' in Figure 2 but not the height of the Enterprise Value 'bar'.

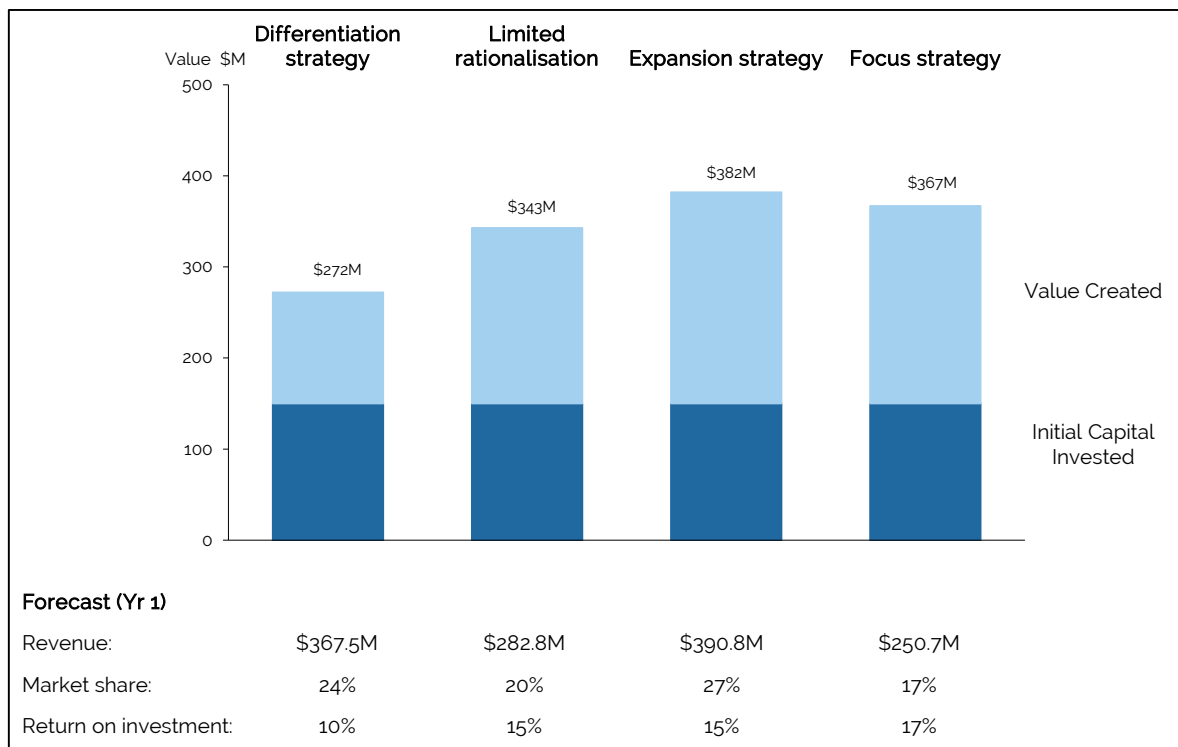
It is the height of the relative Enterprise Value bar under different strategies that is important for strategic decision making. The 'best' strategy for choosing from alternative is the one that gives the highest value. The height of the 'Invested Capital' bar, however measured, will be the same for each alternative so, from this perspective. The definition of "capital invested" is not critical provided it is used consistently across the alternatives.

This concept is captured in Figure 5.

Figure 5 shows the value of the current strategy as \$272 m. This was derived from a DCF model reflecting the expected financial outcomes of the strategy. It also shows the value of 3 alternative strategies. The 'best' from a financial perspective is the third.

The opening capital base is represented as the dark area in each 'value bar'. Note that it is the same for each alternative. A different definition of the capital base will not affect the choice of the best strategy, just the division of the value between value and value creation.

Figure 5: Capital Base and Strategy Selection



There will be an EP profile derived from the definition of the capital base and this will be used for subsequent performance assessment i.e. how are we progressing relative the plan? The important consideration here is consistency in the way the performance measure is used for planning and subsequently used for performance assessment rather than what definition of the base is used.

Establishing Performance Targets

One use of the EP concept is to inform target setting – i.e. given the invested capital base, what EBIT targets have to be met to, at a minimum, earn the required return of investors (WACC)?

The minimum target will be an EBIT that provides a zero Economic Profit. This is a break even target. Creating value means doing better than this minimum.

The definition of invested capital does become important in this use:

- If cash invested (book value) is used as invested capital then the EBIT target, derived from assuming zero EP, will only return the cost of capital. Here 'market value' will equal book value i.e. zero value created;
- If market value is used in the invested capital base (e.g. the equity component is share price times number of shares) then the derived EBIT stream that sets EP to zero each year (or in overall profile) will be sufficient to support the current market value. An increase in share price will require a performance profile above this derived EP = 0 profile.

Naturally the relative size of the EBIT targets in the two cases above will depend upon market value versus book value.

If market value is below book value then the target is 'softer' than a book value based target. Just meeting the market value based target will 'lock in' the value erosion that has led to market value being less than book. This sends a poor message to the capital market in the sense that the business has not been an effective 'guardian' of investment capital.

If market value is above book value then use of an EBIT target that provide a zero EP profile based on book value will be too 'soft'. In this case subsequent achievement of the target EBIT profile will lead to a fall in market price.

Our preferred approach is to use invested capital as the capital base but to derive any target EBIT stream in two ways:

1. based on outperforming the EBIT stream the supports the current share price – a minimum;
2. based on a stretch target, for example doubling the share price every four years – a target set by Lloyds TSB for a period and was regularly beaten.

The former requires starting with a financial model that captures the expected outcomes of the current business strategy, most likely calibrated to the strategic environment and current share price e.g. Qantas appears to have a competitive advantage in a poorly performing industry.

The EP profile assists in calibrating the valuation model and the strategic position as stated earlier e.g. a positive EP profile is consistent with a competitive advantage or an attractive market. The EBIT stream in this financial model becomes the minimal target to outperform.

Summary

Economic Profit is a useful performance measure that provides many benefits:

- it captures an explicit linkage between the P & L and Balance Sheet – it not only considers profit but also explicitly considers the capital invested to generate the profit;
- it recognised that equity capital is not 'free' but is a business cost;
- it promotes a value language and focus in businesses;
- it is relatively easy to measure from accounting systems with BU P&L's and Balance sheets;
- it provides a bridge between the traditional free cash flow approach to strategic and investment decision making on the one hand and accounting based performance measurement on the other;
- a focus on EP as a performance measure, relative to long term targets, will engender value maximising behaviour in management;
- it can serve as a basis for performance based remuneration at corporate and business unit level.

Just do it! It's not hard and it is powerful!! Call me if you would like to discuss.