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Valuing IP and determining the cost of capital

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For some time now, two crucially important business and financial tools have been developing on largely independent paths. These two tools – the cost of capital and the methodology for valuing intellectual property – are, in fact, very closely connected. In order to value any asset that is expected to generate a return over time (be it an intellectual asset or otherwise), a cost of capital is usually required to discount the future returns.

Considerable research has been conducted to date into the cost of capital in the context of valuing companies. But IP valuations are highly specialised and quite different to the standard discounted cash flow valuations that are typically used to value corporate companies. This is because standard corporate valuations discount cash flows at the aggregate corporate level – in other words, all the cash that is generated from operations. And cost of capital theory has developed over time to address the issue of the correct discount rate to apply to these aggregate cash flows (rather than taking into account specialised IP valuation methodologies).

At the aggregate level, cost of capital theory is clear that systematically risky cash flows should be discounted at a higher rate than safer, less systematically variable cash flows. And at this aggregate corporate level, life is made easier by the fact that it is possible to assess the aggregate degree of risk associated with different companies from information gathered about the aggregate company in the capital markets. So, in short, the theory is bespoke and the capital market information needed to populate the models is in the required form.

IP valuations are different. As we shall show later, several of the valuation methodologies involve discounting future income or expected cost savings to be generated by the exploitation of particular assets. This is different to discounting aggregate corporate cash flows. The risk profiles of these streams through time are likely to be different from the risk profile of the aggregate corporate cash flows. This makes the determination of an appropriate cost of capital (discount rate) for IP valuations difficult.

At the same time, the increasing importance of IP valuation is underlined by recent PricewaterhouseCoopers research showing that intangible assets and goodwill constituted up to 74 per cent of the average purchase price of companies in 2003. And the requirement to apportion the purchase price of acquisitions in terms of intangibles and other assets is leading to much more thinking in this area. In their drive for increased transparency and comparability, standard setters are pushing companies to report on the value of acquired intangibles under IFRS 3 and FASB Standards 141 and 142. At the same time, the investment community is now alert to the importance of intangible assets and the need for companies to manage value in this area and

communicate their efforts to the market.

As IP valuation methodologies increase in sophistication, greater convergence with established cost of capital methodologies appears inevitable. This chapter highlights some of the key issues that will shape this process.

Using the WACC

Most people who use the cost of capital in the real world are interested in valuing a business, or shares in a business. By far the most robust and frequently used technique for assessing value is the discounted cash flow (DCF) approach. This is capable of incorporating a far richer and greater amount of information than the majority of other techniques and its intuitive appeal has led to widespread adoption within the business community. Based on assessments of relative risk inherent in the company being valued, the most frequently used DCF technique involves discounting the operational cash flows of a business at the weighted average cost of capital or WACC (the blended return required to remunerate all providers of finance).

The principal, if not the only, focus for shareholders and debt holders is on achieving the best possible return on invested capital. Whether that capital has been invested in fixed or intangible assets has, until now, been considered unimportant. For that reason, the WACC approach gives a value for the whole business (both tangible and intangible assets).

The WACC approach estimates the operating cash flows that would be available to the providers of capital to the business after corporate taxes are paid, but without taking into account any reductions accruing from the presence of tax shields from interest payments. We refer to this amount of tax payable as unlevered tax because the tax is estimated on the same basis as if the business was unlevered, in which case any tax relief on interest payments would not reduce corporate tax.

It is necessary to assess the cash flows on this unlevered tax basis because the standard WACC formula already includes an adjustment to the cost of debt component, taking into account the impact of the tax deductibility of interest payments. To model this impact twice (in the cash flows as well as the discount rate) would therefore constitute double counting. The unlevered tax is then deducted from the pre-interest cash flows to calculate post-tax, pre-interest cash flows.

The approach assumes that the business adopts a single target capital structure for the projection period and for the calculation of terminal value. This assumption on current and longer-term capital structure is made normally with reference to actual data on both the

Figure 1 Calculating the weighted cost of capital

$$WACC = K_e \times \frac{E}{V} + K_d \times (1 - T) \times \frac{D}{V}$$

Where:

- K_e = Cost of equity
- K_d = Cost of debt
- E = Market value of equity
- D = Market value of debt
- T = Corporate tax rate
- V = Market value of equity plus market value of debt

company and/or a peer group of companies in the same industry, and factors such as interest cover. The approach therefore implies that the management of the business will strive to achieve a constant target gearing over time. It works on the assumption that debt is rebalanced over time as the market value of equity changes to maintain a given gearing ratio.

The WACC is calculated using the formula set out in figure 1.

WACC and IP valuation methodologies – out of sync?

So, it should be clear that current cost of capital methodologies and practices have been developed to discount aggregate corporate cash flows – arising from both tangible and intangible assets. By implication, they therefore require skilful interpretation and extrapolation to drill down to the disaggregated level of cash flows associated with individual intangible assets and valuation methodologies (more on this later).

Intangible and IP valuation approaches take investors and analysts into non-standard cost of capital territory. Therefore, blindly applying standard cost of capital techniques in all IP valuation circumstances is unlikely to lead to the right result every time. And the consequences could be far-reaching. Misleading cost of capital assessments could, for example, lead to intangible assets being incorrectly valued. The latter could have a significant impact on amortisation charges hitting the profit and loss account, in turn affecting the bottom line and earnings per share (EPS).

Understanding IP valuation

In order to make progress regarding the correct cost of capital to apply in the context of IP valuation, it is necessary to understand the different valuation methods that exist. And, in any case, given the increasing importance attached to the valuation of intangibles and the drive towards reporting on this value by accounting bodies around the world, organisations need to be aware of the various methodologies in use for IP valuation – as well as understanding

which of these methodologies best suit their own intangible assets. There is no one size fits all solution here – not all methods make sense for all assets, and misleading results can be obtained if inappropriate methods are chosen. In selecting the appropriate methodology, valuation expertise and a clear understanding of the role of intangibles within the business, as well as their impact on business value, are essential prerequisites.

Valuation methods

Most intangible assets generate incremental returns for the business that owns them, either through an increase in revenues or through a reduction in costs. All valuation methods focus on capturing the value of these additional returns. The principal methods of valuation which are deemed acceptable for financial statement purposes are as follows:

- Excess operating profits or premium profits method.
- Premium pricing method.
- Cost savings method.
- Royalty savings method.
- Market approach.
- Cost approach.

Each of these methods, together with their limitations, is discussed briefly below.

Excess operating profit method

The excess operating profit method determines the value of the IP by capitalising the additional profits generated by the business owning the property over and above those generated by similar businesses, which do not have the benefit of the property. There are various ways in which the additional profits may be calculated, for example by reference to a margin differential or comparing the return on capital employed earned by the business owning the property with that earned by companies without such benefit. The calculated additional operating profits expected to be earned over the life of the asset in question are then discounted to the present day to arrive at a value for the asset.

It is important, if using this method, to ensure that the additional profits identified are specifically attributable to the intangible asset in question and not to some other factor such as a relatively more efficient production facility or distribution network that relates to the business as a whole.

A further drawback of this method is that the business with which you seek to compare the subject's margins or return on assets is likely to have some intangible assets of its own which

generate an additional return. It may even have a more efficient production facility. These factors will make it more difficult to calculate the additional profits that the subject business is earning and should be taken into account in the valuation.

Premium pricing method

A variation on the excess profits method, this is often used to value brands in the consumer products sector where it is common for a branded product to be more expensive than an unbranded equivalent. The value of this additional revenue projected over the life of the brand, net of the marketing and other brand support costs incurred to achieve this revenue, and discounted to the present day, provides a value for the brand.

A drawback of this method is that it is often very difficult to find a truly unbranded product. In the food sector, where stores can sell both branded and own-label products, the store's own brand itself has a certain value.

Cost savings method

This is fairly self-explanatory and values the asset by calculating the present value of the cost savings that the business expects to make as a result of owning the asset. This is usually as a result of an efficient process or secret technology. While a business can usually calculate the costs it has saved since it introduced the new process, it can be more difficult to estimate whether a third party would save more or less costs if they introduced the same technology to their own business.

Royalty savings method

This is based on the principle that, if the business did not own the asset, it would have to in-license it in order to earn the returns that it is earning. Alternatively, the business could out-license the asset if it did not wish to use it. The value of the asset is calculated based on the present value of the royalty stream that the business is saving/foregoing by owning the asset. Determining an appropriate royalty rate (reflecting a hypothetical licensing agreement) is therefore a key part of a valuation using this approach. While this method is popular, its major drawback is the difficulty in identifying truly comparable licensing agreements in the market, as details of licensing agreements, including royalty rates, are rarely made public. An appropriate rate can, however, be estimated by considering the effective additional profits that are earned by exploiting the asset in question and remembering that each party to a licensing agreement needs to earn a commercial return on their investment.

Market approach

This values the asset based on comparison with sales of similar assets. This is by far the preferred approach of the accounting standard setters. Market multiples are derived using the price at which a similar asset has been sold and attributes of this similar asset (eg, sales). These are then applied to the attribute of the asset being valued to indicate the value of the subject asset. As many multiples as possible should be derived – for example: sales, EBITDA, EBIT. In an ideal world this is the best method, as it gives an estimate based on a true market value.

In practice, however, the world is not ideal and it is very rare to find sufficiently detailed publicly available information on sales of truly similar intangible assets.

Cost approach

This values an intangible asset by accumulating the costs that would currently be required to replace the asset. The premise of the cost approach is that an investor would pay no more to purchase the asset than would be paid to reproduce the asset.

While this approach is suitable for some assets, particularly those which are not directly generating income, care should be exercised in choosing this approach as cost is not always a reliable guide to value – think of the vast amounts of money spent on pharmaceutical research projects which come to nothing.

Dealing with risk

One of the reasons why some people are cautious about placing a value on IP is that there is usually a greater commercial risk associated with the potential revenues from the exploitation of an intangible asset than from a business or tangible asset. This adds to the difficulties involved in reconciling IP valuation methodologies to cost of capital theory, because standard cost of capital theory distinguishes between commercial risks that are specific (and can be diversified away by investors), and commercial risks that are systematic and cannot be diversified. One therefore needs to be clear that these greater commercial risks associated with intangible assets are greater systematic risks if higher discount rates are to be deployed in the valuation.

A typical company operates with a portfolio of assets, each of which carries different systematic and specific risks. The convention is that both the systematic and specific risks should be captured in the cash flows associated with the asset (so that these become truly expected cash flows), but only systematic risks (that cannot be diversified) are captured in the weighted average cost of capital (discount rate). The difficulty with IP valuation is therefore that the judgements required in arriving a discount rate are twofold: in

addition to making judgements about the distinction between specific and systematic risks, it is also necessary to form judgements about the risk profile of disaggregated cash and income streams of the asset relative to the overall aggregate cash generation of the business. For example, costs are likely to be far more systematically stable than overall aggregate cash flows and should therefore be discounted at a relatively low discount rate. Revenues might be expected to be more systemically risky and should be discounted at a higher figure. But without capital market benchmarks to benchmark the risk of individual intangible assets, it is often difficult to be precise about the right discount rate to adopt.

In arriving at appropriate discount rates for intangible assets, one therefore needs to consider a range of factors including the relative systematic risk of each asset and the particular circumstances surrounding the use of that asset in the underlying business. Riskier assets (eg, new technologies in economically sensitive markets) may require higher discount rates – while less systematically risky assets may need to be discounted at a lower rate. When undertaking this process, it is important to keep the business's overall WACC in mind. The various discount rates arrived at for each asset should be such that the overall discount rate can be reconciled to the WACC.

In addition, as a cross-check, it is important that the reasonableness of the value derived for an intangible asset is assessed in light of the values of other assets within the same business and their relative importance to the business and, importantly, the value derived for the entire business (which is primarily based on the established method of discounting the overall operating cash flows of the business at the WACC).

Planning ahead

This chapter suggests that the valuation of intangible assets needs to be entrusted to valuation specialists who are able to reflect appropriately the risks and rewards attached to these assets through correctly applying the right valuation methods and selecting the right discount rate.

IP valuation is an important, but complex, undertaking – not a box-ticking exercise – and companies need to be aware of the pressures that this may impose on their own management teams (the US standard setters have already said that they expect that most companies will require expert assistance in this area). Advance preparation will ensure trouble spots are identified and dealt with at an early stage and help avoid the difficulties associated with reaching unsound conclusions.

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John Rugman leads the PricewaterhouseCoopers LLP Financial Economics team. He has a background in investment management and equity research, and has been with PwC for over eight years. Mr Rugman is one of the UK's leading practitioners on cost of capital analysis, and specialises in international project appraisal, corporate valuation, the rates of return required by investors in global capital markets and the application of the cost of capital in regulation and competition inquiries. He manages PwC's country risk service, and has developed PwC's internal research into models used to assess optimal capital structure. He has recently co-authored a book, *The Real Cost of Capital*.

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Mr Hadjiloucas recently provided a valuation opinion and testified as an expert witness in a case involving a leading global consumer goods brand. He has also assisted many blue-chip clients in developing strategies in connection with exploiting their IP, as well as directed numerous valuations of intangible assets for financial reporting purposes, under both US GAAP and International Financial Reporting Standards. A chartered accountant by profession, he frequently presents on the topic of intangible asset valuation at conferences in the UK and other countries, and has published a number of articles.

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