



Management Accounting – Financial Strategy

Most P9 students find company valuations a challenge, writes **Sarah Mc Henry**, but they needn't be so hard if you use basic business sense and remember key principles.

I'm sure that many of you have been watching the popular BBC television series *Dragons' Den*. For those who haven't, its basic premise is as follows: every programme a number of entrepreneurs present their respective cases to the "dragons" – five potential investors – seeking a sum of money in return for a stake in their business. An entrepreneur might ask for, say, £150,000 in return for a ten per cent share, whereupon a dragon will usually reply: "Why do you think your business is worth £1.5m?" All too often the entrepreneur appears at a loss as they struggle to work out the connection between the stake, the investment they want and the prospects of their business.

At the other end of the scale, the business press is full of stories about takeovers and how much one company has paid for another, resulting in a valuation for the target that usually exceeds its share price before the acquisition was announced. There is at least one such example every day. The businesses that make these headlines are large, well-established companies listed on a main stock market whose shares are actively traded. You may be aware of the recent takeover of BAA by Spanish company Ferrovial, which valued it at £10.3bn or 950.25 pence per share – 49 per cent higher than BAA's share price before the takeover bid emerged. This prompts the question: why did Ferrovial place such a high value on BAA?

Let's remind ourselves of why we value businesses. It could be done for M&A purposes; for flotation purposes (ie, to gain a listing on a major stock exchange); to attract a new investor; to allow an investor to sell their shareholding; or to enable the managers of a business to buy out its owners.

There are four main ways to assess the value of a business in addition to the published share price, should one be obtainable. The first of these is the net assets method. It can be based on the balance sheet values of the assets or some measure of market values, such as replacement value or second-hand market value. Any significant intellectual property should also be included where possible. The net assets valuation is calculated by taking the non-current assets figure, adding the current assets and subtracting both the current and non-current liabilities, including preference shares. Where balance sheet values are used, this will equate to the book value of the shareholders' funds.

This approach is of most use where a business is being valued for the purposes of breaking it up – ie, where a firm cannot continue as a going concern, which could be because there's no longer a market for its products or the investors wish to liquidate their investment and no buyer can be found. In such a case, the book values will need to be altered to take account of the



"You want *how* much?"
Dragons (l-r) Theo Paphitis, Peter Jones, Deborah Meaden, Duncan Bannatyne and Richard Farleigh.

second-hand market value of non-current assets, inventory and receivables. In most circumstances this valuation method will give a low figure, which probably won't be of any use except to give the owners an idea of the least they might expect for their shares. Of course, if the business is listed, the current share price will be the lowest value that the shareholders will accept.

The second technique, the dividend valuation model (DVM), calculates the present value of the future dividend stream. This is useful when considering small shareholdings, as the investor will have no control over the total cash flows of the company. The model assumes that the value of the investment comes from the future dividend stream, discounted at the cost of equity, being the return required by the ordinary shareholders.

The price/earnings (P/E) method applies a P/E factor to profit after tax. If a listed business is being valued this way, care must be taken not to take its published P/E ratio and apply it to the latest reported profit, since this will merely derive the published share price. This method is of most use when attempting to value an unlisted company or when bootstrapping (see next page) is appropriate.

A published P/E ratio indicates the future growth prospects of a business. The higher the ratio, the greater the growth expected by the marketplace. Because it relates to share price, a P/E can be obtained only for listed companies. If the business is unlisted, the P/E ratio of a similar listed company can be obtained and applied to its future expected profit after tax figure. If a firm is being valued for merger purposes, the P/E ratio used could be from a company in a similar line of business or the purchaser's. If a listed company's P/E ratio is used to value an unlisted company, it should be scaled down to reflect the fact that there



1 EXTRACTS FROM STITCHINGS' JANUARY 31, 2007 BALANCE SHEET

Assets	£m
Non-current assets	140
Inventory and receivables	120
Bank and cash	<u>80</u>
Total assets	<u>340</u>
Equity and liabilities	
Ordinary £1 share capital (authorised £30m) issued	20
Retained earnings	180
Secured bond 8% 2005	50
Current liabilities	<u>90</u>
Total equity and liabilities	<u>340</u>

2 SUMMARY FINANCIAL STATISTICS

	Stitchings	Dresses	Jangles	Heels
Shares in issue (millions)	20	10	12	0.5
Earnings per share (pence)	103	75	85	160
Dividend per share (pence)	31	55	42	112
Share price (pence)	1,648	675	1,530	n/a
Book value of net assets (£m)	250	60	65	6
Cost of equity (%)	12.5	11.4	13.8	12
Forecast annual growth rate (%)	11	5	14	9

is no marketplace for its shares, which reduces their worth. It should also be adjusted for differences in growth prospects. This will normally be downwards, but occasionally the company being valued may have better growth potential than its comparator. The profit figure used must take into account any synergistic benefits that are expected to arise. Examples of synergies include a reduction in overheads resulting from economies of scale, savings from closing part of the business or increased revenues from the cross-selling of products.

Sometimes when a listed company with good growth prospects is buying a business that has not been as successful, the target may be valued using the purchaser's P/E ratio. This is an example of bootstrapping. The idea is that the purchaser can exercise its way of running a business on the target to bring it up to its standard. In other words, the synergies that will result from the merger are quantified through the use of the higher P/E ratio.

The fourth and, in theory, best company valuation method is to calculate the present value of future cash flows resulting from the business's operations. But it is also the most problematic, as future cash flow figures (defined as those arising before finance charges but after tax) can be inaccurate or even unknown. Certainly, if a business is being valued for acquisition purposes and the takeover is hostile, it is even more unlikely that cash flow information will be available.

Let's consider why this is theoretically the best method. If we take the market value of a company – its published share price multiplied by the number of issued shares – and imagine this company takes on a positive net present value (NPV) investment project, then theoretically the value of the company should increase by the amount of the NPV, with the NPV equalling the increase in shareholders' wealth. A company's value should, therefore, equal the sum of the present value of all its projects. If one business is considering buying another, it is merely taking on another project, which should be appraised in the same way as any other potential long-term investment. This method

applies even if the valuation is being performed for purposes other than a merger.

So, if cash flow information is available, these cash flows could be discounted at some appropriate cost of capital. To do this, the period during which these cash flows are likely to be generated will have to be established. The easiest calculation is taking the cash flows to perpetuity – ie, net present value = annual net cash flows ÷ discount factor. But it will probably be more prudent to calculate the cash flows over a defined period of, say, ten or 20 years using an annuity approach, because cash flows are not guaranteed to arise indefinitely.

The NPV generated is the value of the whole business, so, if it's being used for merger purposes, the value of debt needs to be deducted from this total to give a value for the equity capital.

This method gives the acquirer an idea of the maximum they should offer, in that if they pay more than the NPV (less any debt), then the cost will exceed the maximum predicted benefit.

To some degree you can almost see this method being applied in the *Dragons' Den*. When they are questioning an entrepreneur about future sales contracts and operating costs, you can imagine that they are trying to ascertain a basic NPV and that they will be comparing this to the implied value of the business (calculated by dividing the investment sought by the percentage ownership offered – eg, £150,000 ÷ 0.1 = £1.5m).

By understanding business valuations you'll not only be able to tackle exam questions on this topic; you'll also understand why the dragons give the entrepreneurs such a hard time. So let's consider the fictional example of Stitchings plc to put the theory into practice. The company is a textile manufacturer whose shares are quoted on a major stock exchange. It is currently examining its future strategy. The following three options are under consideration, all of which involve acquiring other firms and diversifying away from the core business:

- Option 1. Dresses plc owns 50 department stores. These sell items at the "value" end of the market and so have a poor image. Stitchings believes that it could improve their image by selling its own, higher-quality products through them. The shareholders of Dresses have indicated that they will be willing to sell given the right offer.
- Option 2. Jangles plc is a jewellery manufacturer. A bid for Jangles would almost certainly be seen as hostile, so a successful takeover is far from guaranteed.



3 VALUATIONS COMPARED

	Market cap	Net assets	DVM	P/E	NPV
Dresses	£67.5m	£60m	£90.2m	£96m	£182.4m
Jangles	£183.6m	£65m	n/a	£163.2m	£265.4m
Heels	n/a	£6m	£20.3m	£7.68m	£38.4m

- Option 3. Heels Ltd, a well-established family business, owns 20 shoe shops in good high-street locations, as well as a shoe manufacturing business. Its managing director – the main shareholder – wants to retire shortly and has approached Stitchings to ask if it's interested in buying his business.

Stitchings' accountants have produced estimates of the expected NPV of future cash flows of Stitchings with each of the three acquisition options:

- Stitchings plus Dresses: £512m.
- Stitchings plus Jangles: £595m.
- Stitchings plus Heels: £368m.

The forecast growth rates in panel 2 on the previous page are based on publicly available information. They assume that each firm continues operating independently and that dividend policies, capital structure and risk characteristics remain unchanged.

Using as many techniques as possible, value each option and advise Stitchings on an appropriate cash offer in each case.

Market capitalisation method

Dresses and Jangles are listed, so they have a published share price. This will be the minimum that they will accept. In the case of Jangles, the bid will be hostile, so Stitchings can expect to pay an even bigger premium to buy out the shareholders.

- Dresses: 10m shares \times £6.75 = £67.5m.
- Jangles: 12m shares \times £15.30 = £183.6m.

Dividend valuation model

DVM values can be calculated for Dresses and Jangles and compared with their market caps to see whether the companies' estimations of growth match those of the market. But remember that the DVM is better suited to buying a packet of shares in a company rather than the whole company. This is because if you own the whole company you can do whatever you want with the cash it generates – ie, you can change the dividend policy.

- Dresses: $\text{£}0.55 \times 1.05 \div (0.114 - 0.05) = \text{£}9.02$. This gives a total value of $\text{£}9.02 \times 10\text{m shares} = \text{£}90.2\text{m}$.
- Jangles: $\text{£}0.42 \times 1.14 \div (0.138 - 0.14) = -\text{£}239.4$, which is a very odd result, illustrating how the DVM breaks down where the estimation of growth exceeds the cost of equity.
- Heels: $\text{£}1.12 \times 1.09 \div (0.12 - 0.09) = \text{£}40.69$. This gives a total value of $\text{£}40.69 \times 500,000 \text{ shares} = \text{£}20.3\text{m}$.

Price/earnings ratio

We can calculate a P/E for Stitchings ($16.48 \div 1.03 = 16$) and apply it to the profit after tax for each of the three firms – in

effect, bootstrapping. This would be an appropriate approach if the companies are in the same industry as Stitchings.

Stitchings' P/E needs to be factored down in Dress's case, as Dresses' forecast growth is lower – say $16 \times 80\% = 12.8$.

Dresses' profit after tax is $\text{£}0.75 \times 10\text{m} = \text{£}7.5\text{m}$. Therefore its value is $12.8 \times \text{£}7.5\text{m} = \text{£}96\text{m}$.

Jangles' forecast growth is greater than that of Stitchings, so no factor needs to be applied to the P/E. In fact, Jangles' own P/E is 18, so there is no bootstrapping in this case.

Jangles' profit after tax is $\text{£}0.85 \times 12\text{m} = \text{£}10.2\text{m}$. Therefore its value is $16 \times \text{£}10.2\text{m} = \text{£}163.2\text{m}$.

Stitchings' P/E needs to be factored down for both the lower growth potential of Heels as well as the fact that the company is unlisted – say $16 \times 60\% = 9.6$.

Heels' profit after tax is $\text{£}1.60 \times 500,000 = \text{£}800,000$. Therefore its value = $9.6 \times \text{£}800,000 = \text{£}7.68\text{m}$.

Present values

Stitchings' combined NVPs with each of the three firms have already been calculated. No information has been given on how the figures were obtained. Cash flow figures are hard enough to predict when the business is known, but if the valuer is external to the business they can be almost impossible to obtain. There must be some doubt as to where Jangles' NPV figures came from, as the firm is unlikely to give them to a hostile bidder.

If we accept this information as accurate, we can calculate the most that Stitchings should offer for each firm, because in theory the addition of a positive NPV activity to the existing business will enhance the company's value by the NPV amount.

Stitchings' market capitalisation is $20\text{m} \times \text{£}16.48 = \text{£}329.6\text{m}$. This can be deducted from the NPVs as follows:

- Stitchings plus Dresses: $\text{£}512\text{m} - \text{£}329.6\text{m} = \text{£}182.4\text{m}$.
- Stitchings plus Jangles: $\text{£}595\text{m} - \text{£}329.6\text{m} = \text{£}265.4\text{m}$.
- Stitchings plus Heels: $\text{£}368\text{m} - \text{£}329.6\text{m} = \text{£}38.4\text{m}$.

So the NPV method gives the highest set of valuations. These are the maximum sums that Stitchings should pay for each of the companies. If more is paid, the costs will exceed the benefits – ie, the investment will have a negative NPV.

Looking at how the market views the companies, it seems that Dresses is undervalued, since both the DVM and P/E ratio methods produce higher values for it than the market cap. An alternative interpretation is that the growth estimates used in DVM and the P/E approaches are too high for this firm.

The opposite is true for Jangles in that its market cap is higher than the value calculated using the P/E ratio, meaning



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that it is either overvalued by the market or the P/E ratio used was too low.

We can ignore the net assets valuations, because they are all lower than those derived by the other methods. Also, Stitchings is looking to buy a company as a going concern, whereas the net assets method is of most use if a target is to be asset-stripped.

If the shareholders of Dresses and Jangles are seeking a premium of, say, 40 per cent above the market value, this would give us:

- Dresses: $1.4 \times £67.5\text{m} = £94.5\text{m}$.
- Jangles: $1.4 \times £183.6\text{m} = £257.04\text{m}$.

So what should Stitchings offer for each of the three companies?

An offer of £80m could be made for Dresses, with scope to increase this to, say, £95m. That would still leave a large margin between the offer price and the NPV, which should keep Stitchings' shareholders happy.

There is no big gap between Jangles' market cap plus 40 per cent and its NPV value. Given that Stitchings' bid is likely to be hostile, it doesn't seem a worthwhile option.

For Heels, we can ignore the DVM value, because it's not really suited to valuing an entire company. An initial offer of £10m could appeal to its owners. As this is below the NPV, it would give scope for benefits to accrue to Stitchings' shareholders.

With valuations you need to be flexible and not assume that there's only one right answer. As the above demonstrates, there are many different valuation methods. The most important thing is not to overpay for a firm – ie, don't offer more than the NPV.

This answer has focused on the numbers side of takeovers. Note that a real exam question may require you to discuss important non-financial issues such as the ease of integrating businesses or how an acquisition fits with a company's strategy. **FM**

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■ November 2006 exam results

Results were e-mailed on January 25 to students who registered for this service. They were posted – by first-class post or airmail – on January 26.

We cannot give out results on the telephone or to callers at any CIMA office.

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Post-exam guides for each of the professional qualification subjects will be available three to four months after the exams. These are essential reading for unsuccessful candidates and for those studying a new subject. They contain:

- The exam questions.
- The rationale for each question.
- The suggested approach to answering each question.
- The outline marking scheme.
- The examiners' comments.

■ Strategic level and TOPCIMA script review service

A script review service will be available for the strategic level papers and TOPCIMA once the November results are released. It is available only to those who scored between 40 and 49 marks. For full details visit www.cimaglobal.com/scriptreview.

■ May 2007 exam entry

The exams will take place on May 22, 23 and 24. Online entry will be available at www.cimaglobal.com/examentry from February 1. The standard closing date for entry is March 14. If you apply after this date it will be accepted only as a late entry and you will have to pay a late entry fee. The deadline for late entries is March 21.

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