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UK CORPORATE VALUATION METHODS: A SURVEY

This appendix presents the results of a survey of experienced corporate finance practitioners in the UK and Ireland conducted in May and June 1998. Questionnaires were sent to 452 corporate finance directors at 71 banks, stock brokers, venture capitalists and accountancy firms listed in *Crawford's Directory*. A total of 113 usable responses were returned from 41 different firms by the 14 July 1998 cut-off date. This represents a response rate of 25.0% of individuals and 57.7% of firms surveyed.

Although the survey was conducted a number of years ago, its results continue to be broadly valid, with the possible exceptions of the current perceived equity risk premium and the usage of the Internet to research companies.

Scoring and tables

Most questions required a response regarding the frequency of use of a method or source of information. The scale used is as follows:

1	2	3	4	5
Almost never	Seldom	Some-times	Usually	Almost always
0–5%	6–35%	36–65%	66–95%	96–100%

The tables in this report contain the mean score, standard deviation and the percentage of each respondent selecting 1, 2, 3, 4 or 5. Percentages may not add to

100% because of rounding and, in some cases, multiple responses.

A.1 VALUATION METHODOLOGY

There are two main approaches to determining the value of a company:

- relative valuation techniques; *and*
- determination of intrinsic or 'true' value.

UK corporate finance professionals use relative valuation techniques most often. This may reflect the ease with which, in most cases, comparable companies can be found. However, numerous limitations affect the reliability of sole reliance on comparable methods. These include differences in accounting policies; identification of suitable companies; hidden assets and liabilities; and non-overlapping ranges; but ignores synergies in the case of an acquisition.

Possibly the most important concern relating to relative valuation methods is when most or all companies are trading at levels above their intrinsic value (a speculative bubble). Certain acquisitions or flotations may be attractive on a relative basis, but cannot be justified on the basis of intrinsic value.

Determination of 'intrinsic' value is generally accomplished through the application of Discounted Cash Flow (*DCF*) techniques. This method was ranked sixth

in terms of frequency of use, but as one of the two most important methods as detailed in Table A.2.

DCF approaches also suffer from limitations: identification of forecast cash flows can be difficult if the corporate financier does not have access to management forecasts and the calculation of an appropriate discount rate is subject to debate. The ability to achieve arithmetically precise valuations using computer spreadsheets can also seduce the inexperienced into believing that DCF valuations are more accurate. As many financiers noted: 'valuation is as much an art as it is a science'.

A.1.1   Frequency of use

The full results are presented in Table A.1. One limitation of this table is that it does not recognise that certain valuation methodologies are more appropriate to companies in certain sectors. For example, several respondents pointed out that property companies are valued primarily on the basis of appraised net asset value.

The most frequently cited 'other' valuation method was an enterprise value/Earnings Before Interest, Tax, Depreciation and Amortisation (*EBITDA*) or enterprise value/Earnings Before Interest and Tax (*EBIT*) ratio. Over 10% of respondents mentioned it.

Table A.1 Valuation methodology.

Rank	Method	Mean score	Standard deviation	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
1	Trading multiples of companies in the industry	4.59	0.69	0	2	6	23	69
2	Capitalisation of forecast earnings	4.34	1.02	4	4	8	25	60
3	Trading multiples of companies taken over (exit multiples)	4.21	1.04	2	8	10	28	53
4	Price/EBIT	4.12	1.12	4	5	18	21	52
5	Capitalisation of historic earnings	4.03	1.16	4	10	14	26	47
6	DCF	3.85	1.08	2	11	24	28	35
7	Acquisition premia	3.52	1.24	7	15	23	28	26
8	Industry 'rule of thumb'	3.07	1.12	11	14	43	20	12
9	Internal Rate of Return (*IRR*)	3.01	1.24	14	19	33	20	14
10	Dividend yield	2.87	1.22	14	27	29	19	12
11	Other	2.59	1.74	50	0	14	14	22
12	Historic book value	2.07	1.27	46	24	14	9	7
13	Liquidation value	1.93	0.89	36	41	17	5	1
14	Replacement cost asset value	1.72	0.81	47	37	14	1	1
15	Real options	1.58	0.81	57	32	7	2	1

A.1.2   Calculation of final valuation or value range

The second set of questions dealt with the way in which the respondents weighted the results of different methods. Over 70% of respondents usually or almost always placed the greatest weight on one method and used others as a check.

A number of respondents indicated that their reliance on different methods depended on the nature of the assignment. For example, one suggested that relative valuation methods were more important in flotations and other capital markets transactions, while DCFs were more important in the case of acquisitions.

Finally, a number of respondents stated that 'gut feel',

Table A.2   Importance of methods.

Method	First choice ($n = 86$) (%)	Second choice ($n = 34$) (%)	Third choice ($n = 16$) (%)	Total top 3 picks (%)
DCF	29.1	23.5	25.0	27.2
Trading multiples	25.6	26.5	18.8	25.0
Price/EBIT	17.4	2.9	—	11.8
Capitalisation of forecast earnings	14.0	14.7	18.8	14.7
Capitalisation of historic earnings	8.1	11.8	6.3	8.8

$n =$ Number of respondents.

'market feel' or 'a sense of what was reasonable' were important influences on the final valuation or valuation range.

We attempted to determine which methods financiers most relied upon. Not all respondents provided an answer to this question, nor did they all provide three responses. The DCF method was highly ranked despite its rank of sixth in the frequency of use table. The question asked was: 'On which of the methodologies listed above in Section A do you typically place the most weight?'

A.2   DISCOUNTED CASH FLOWS

There are a number of DCF approaches which vary in their ease of calculation and applicability. The survey asked respondents which of four possible approaches they used.

A.2.1   DCF approaches

The first alternative discounts the pre-interest after-tax cash flows at the Weighted Average Cost of Capital ($WACC$) assuming a constant debt–equity ratio (the WACC method). This is the most frequently used approach in the UK with 63% of respondents using it usually or almost always.

The second approach discounts the cash flows available to shareholders (i.e., after interest and principal

repayments) using the cost of equity as the discount rate
– the *Equity Cash Flow* (*ECF*) method. This is typically
used in situations where the company's initial gearing is
very high. The cost of equity is recalculated each year as
the gearing level decreases.

Economic profit – also referred to as residual income,
Economic Value Added (*EVA*) or Shareholder Value
Added (*SVA*) – is forecast and discounted at the WACC
(Shareholder Value Method). There is no benefit to be
gained in using this method for valuation – its greatest
use is in providing an annual snapshot of corporate eco-
nomic performance.

Finally, Adjusted Present Value (*APV*) separately values
operating cash flows and the tax shields provided by
interest payments using different discount rates. APV
probably provides the most useful approach in complex
valuation situations as it disaggregates the sources of
value.

A.2.2   Forecast period

The length of the cash flow forecast was also investi-
gated. A wide range of responses was recorded (from
2.5 to 20 years). Some of the variance can be explained
by the industry specialities of the respondent. Those
covering utilities and other relatively stable industries
indicated a longer cash flow forecast than others. The
most frequent response was 5 years, although the
average was 7.14 years and the median 7.0 years.

Table A.3   DCF method.

Rank	Method	Mean score	Standard deviation	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
1	WACC	3.71	1.38	11	11	15	23	40
2	ECF	2.59	1.42	33	19	15	22	11
3	Shareholder value	2.34	1.29	37	20	20	17	6
4	Adjusted Present Value (*APV*)	2.04	1.18	44	25	18	8	4

A.2.3   Terminal value

An extremely important component of any cash flow based valuation is the calculation of the terminal value at the end of the explicit cash flow forecast. Depending on the length of the forecast period, the terminal value estimate can often provide more than half of the total value ascribed to the company.

The most frequent response – multiple of earnings or EBIT in the final year – is unfortunately not theoretically correct. It mixes an accounting measure (with its limitations) with an economic measure of cash flow. The corporate financier is making assumptions about the multiple which is achievable in the future.

Interestingly, the method currently favoured by many strategy consultants – the 'hold and fade' method – was cited very infrequently. 'Hold and fade' is a refinement of the perpetuity calculation. The method recognises that a company's cash flows are highly unlikely to increase in perpetuity or that it will be able to continue

Table A.4   Terminal value calculation.

Rank	Method	Mean score	Standard deviation	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
1	Multiple of final year earnings or EBIT	3.45	1.27	13	8	21	37	21
2	Value of perpetuity	2.95	1.33	23	11	27	27	12
3	Value of a growing perpetuity	2.78	1.48	29	16	20	18	18
4	Hold and fade	2.16	1.25	43	20	19	12	5

to earn a return greater than its cost of capital indefinitely. Therefore, it suggests a period of time when the company continues to earn a return in excess of its cost of capital (typically up to 7 years), then gradually reducing (fading) its return on invested capital to equal its cost of capital.

A.3   COST OF CAPITAL

One of the most important contributors to 'value' is the choice of the discount rate used in determining the present value of cash flows. Most debate is generated by the calculation of the cost of equity as the calculation of the cost of debt is relatively straightforward.

A.3.1   Determining the cost of equity

Several methods are available for calculating the cost of equity. The dividend discount model, Capital Asset

Table A.5 Determining the cost of equity.

Rank	Method	Mean score	Standard deviation	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)
1	CAPM	3.67	1.43	14	7	15	23	40
2	Risk free rate + Assumed risk premium for the particular stock	3.01	1.42	21	18	19	23	19
3	Dividend discount model	1.99	1.03	39	34	19	6	3
4	Other	1.42	1.12	86	3	3	2	7

Pricing Model (*CAPM*), Arbitrage Pricing Model (*APM*) and option approaches are the most commonly taught in business schools. The CAPM continues to be the most used in practice. Each has limitations either with respect to the ease of calculation (APM) or the inability of empirical testing to validate the theory (CAPM).

A.3.2 Capital asset pricing model

Several questions were asked regarding the components of the formula: the risk-free rate of interest, the company's beta, and the equity risk premium (the return on the equity market in excess of the risk-free return that is required by equity investors)

$$K_e = r_f + \beta(r_m - r_f)$$

The CAPM has been subject to extensive theoretical and empirical examination. These studies indicate that

CAPM (and specifically the beta factor) may not be the best measure of calculating the cost of equity and that other factors such as book to market values and firm size may be better indicators of expected equity returns. However, CAPM remains in widespread use, partly because of the wide availability of published betas (see Table A.8) and its continued acceptance by practitioners as noted above. In addition, none of the alternatives has proven to be without limitations.

A.3.2.1   Risk-free rate of return

Responses to the question of the source of the risk-free rate of return overwhelmingly favoured medium-/long-term government bonds.

Table A.6   Risk-free rate.

Rank	Rate used	Respondents (%)
1	Medium-/long-term government bonds	80.5
2	Short-term government bills	13.9
3	Other	5.5

A.3.2.2   Beta

One of the main reasons for the continued widespread use of the CAPM is the wide range of sources that publish betas for individual companies. This is illustrated by the almost equal reliance on the top three beta sources: London Business School, Datastream and Bloomberg.

Table A.7   Sources of beta.

Rank	Source	Respondents using (%)
1	London Business School Risk Measurement Service	26.8
2	Datastream	25.3
3	Bloomberg	22.1
4	Barra	10.5
5	Internal calculation	9.5
6	Other	3.7
7	Use beta of 1.0 for all	2.1

A.3.2.3   Equity Risk Premium

The Equity Risk Premium (*ERP*) has been the subject of significant academic and practitioner debate in recent years. Traditionally, bankers and analysts had relied upon historic excess returns as a proxy for future returns. It was believed that accurate forecasts of equity market returns were impossible to obtain, therefore a long-run average of excess returns was an appropriate proxy for future expected returns.

Studies in both the UK and the US found that, over the long run (1920–1994), equities provided a return of approximately 8.3% above the risk-free rate (as calculated using an arithmetic mean). When the returns were calculated on the basis of a geometric mean (i.e., to take account of compounding) the historic equity risk premium dropped to between 5.0% and 5.50% leading to

a debate over whether the returns should be calculated on an arithmetic or geometric basis.

Corporate finance texts line up on both sides of the issue. Brealey & Myers' *Principles of Corporate Finance* advocates the use of the arithmetic mean, while others (including Copeland *et al.*, 2000) recommend the geometric mean. Table A.8 indicates the methods used by practitioners to calculate the ERP. The final column indicates the UK risk premium as calculated by each method.

Table A.8   Calculation of Equity Risk Premium.

Rank	Method	Respondents (%)	UK Equity Risk Premium
1	Forward looking	52.0	5.05
2	Historic average (arithmetic mean)	26.5	5.46
3	Historic average (geometric mean)	18.6	4.59
4	Other	14.7	NA

Note: The total sums to more than 100 because 12 respondents gave multiple answers.

Table A.9 summarises the results of the current ERP in use in the UK. Many respondents entered a range rather than a single number. When this occurred, we used the midpoint of the range in calculating the mean and standard deviation.

Table A.9   UK Equity Risk Premium.

Country	n	Mean	Mode	Standard deviation	Minimum (%)	Maximum (%)
UK	52	4.87	4.0	1.68	2	10

n = Number of responses; Mode = Most frequent response.

SOURCES OF INFORMATION

The survey also requested respondents to indicate the publicly available sources of information used while undertaking valuations. Clearly, management forecasts and interviews would be very highly ranked if they had been included in the question. Published financial statements and brokers' reports were viewed as the most valuable sources of information (see Table A.10).

Table A.10   Sources of information.

Rank	Source	Median score	Standard deviation
1	Annual report and accounts	4.77	0.65
2	Interim reports	4.40	0.96
3	Brokers' reports (other firms')	4.21	1.01
4	Consensus earnings estimates	4.17	1.04
5	Brokers' reports (own firm)	3.97	1.47
6	Other	3.71	1.72
7	Financial press	3.40	1.28
8	Trade journals	2.96	1.27
9	Consultants' reports	2.83	1.12
10	Government statistics	2.77	1.11
11	Internet (World Wide Web)	2.75	1.33

Two categories of brokers' reports were included: own firm and other firms. The reason that other firms' reports ranks higher than own firm is a consequence of the number of respondents working for merchant banks, corporate finance boutiques or accounting firms with no research or broking capacity.

Within the financial statements, the numeric presentation of the results was deemed to be more important than the descriptive, narrative sections.

Table A.11   Content of annual report and accounts.

Rank	Source	Median score	Standard deviation
1	Income statement/profit and loss	4.84	0.46
2	Balance sheet	4.76	0.62
3	Cash flow statement	4.62	0.79
4	Operating and financial review	3.91	1.10
5	Chairman's statement	3.41	1.38
6	Directors' report	3.30	1.42