Valuing Unlisted Shares: A Dual Approach to the Major Information Determinants

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Little is known about how professional valuation experts actually form judgements on the value of unlisted shares. This study examines the valuation process among Canadian valuators and the relative importance of each of the main information variables used in that process. A dual approach to the problem is adopted: (1) a major survey of 231 valuation experts and (2) a conjoint analysis experiment on 82 valuators using fabricated cases representative of realistic relationships. Both approaches conclude that while earnings prospects is the single most important factor in determining unlisted share values, the determination of value in the absence of a capital market is a highly complex process involving a host of information variables, many of which do not easily lend themselves to objective judgement.

Financial reporting has undergone such dramatic changes over the past decade as to be regarded by some to constitute an 'accounting revolution' [Beaver, 1981]. Much of the literature which has revolutionized thinking in financial reporting stems from developments in finance concerning capital market efficiency. New insights have been gained into the speed and effectiveness of capital markets in responding to information, the appropriate definition of risk and the methodologies for testing hypotheses concerning the information content of accounting numbers and risk–return relationships in capital markets (Kaplan, 1978).

In stark contrast to the above, very little of the work in efficient capital markets has yet been translated to the valuation of unquoted companies whose ordinary shares neither trade on an exchange nor over the counter. The observation of Rice (1955) concerning unlisted share valuation still holds true today: 'The importance of the problem... has been exceeded only by its neglect' (p. 367).

Why has this field of research become a 'no-go' area for managerial economists? It is surely not because it lacks relevance. Of the 700 000 or so companies incorporated within the United Kingdom, only approximately 2500 (0.35%) have their ordinary shares listed on a Stock Exchange. Much the same picture emerges in Canada, where approximately 98% of companies are unlisted.

Academic neglect is, we suggest, the consequence of an inadequate methodology and the absence of a reliable data base. Lawson (1980) sums up the position well: 'There is no escape from the fact that financial theory is not yet able to boast of a fundamentalist multi-period model that can generate tolerable valuations for unquoted companies' (p. 99). In short, it is far easier to concentrate on the relatively small proportion of companies which have listing status, using well-tested methodologies and readily available published data sources.

This paper reports the findings of a study which employs two distinct approaches in measuring the importance of accounting and other information variables to professional experts in the valuation of unlisted shares.

LITERATURE

Considerable research has been reported in the capital market literature on the development and testing of valuation models. A summary of the earlier models is found in Keenan (1970).

The fundamental share valuation model is the dividend model (Gordon and Shapiro, 1956), which is simply an extension of the valuation model for individual capital projects. However, there is one important difference: the quality of information in share valuations is typically inferior, being based on highly aggregated, publicly available data. In practice, this approach concentrates on estimating the future dividend stream (often in terms of a constant growth rate) and the riskiness of that dividend stream as reflected in the cost of equity. Such estimates are commonly made by reference to 'comparable' quoted companies using

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dividend yields or price–earnings ratios.

More recently, the capital asset pricing framework has enabled the researcher to view equity value as a function of:

(1) A riskless stream of expected permanent earnings; less
(2) A measure of the cost of earnings risk; plus
(3) A measure of growth opportunities (Litzenberger and Rao, 1971; Fama and Miller, 1972; Foster, 1977; Bowen, 1981).

The 'comparable' approach can also be employed within this framework. The cost of equity, which is the key determinant of share value, is found by reference to the market risk (or beta) of comparable listed companies engaged in similar types of business, having similar mix of trading and adjusted for differences in capital structure (see Sharpe, 1963; Gordon and Halpern, 1974; Fuller and Kerr, 1981; Gup and Norwood, 1982; Boatsman and Baskin, 1981).

In a recent survey of methods used by UK investment analysts to appraise equity investments Arnold and Moizer (1984) found fundamental analysis to predominate with technical analysis a poor second and beta analysis hardly used at all.[1] Within fundamental analysis the earnings-based approach, using the estimate of the 'true' PE ratio, was the primary method. Consequently, the profit and loss account was regarded as the most influential source of information for share valuation purposes.

A share possesses value because it represents a claim to future uncertain cash flows. Any information which alters investors' beliefs concerning the size and uncertainty of such cash flows must, therefore, be regarded as relevant information for share valuation purposes, although the costs of such information must also be considered. Reference has already been made to the considerable body of literature in efficient markets on the information content of accounting messages.[2] Where investors act rationally and prices respond to all available information, there can be little justification for valuing shares at anything other than market value. However, where markets do not exist or are far from 'efficient' it is necessary to determine the relevant information which shapes the perceptions and beliefs of investors regarding the earnings prospects and dividend-paying ability of the firm.

RESEARCH QUESTIONS

This study seeks to identify and measure the important variables, as perceived by Canadian valuation experts, in the valuation of unlisted shares. Three primary questions are examined:

(1) What information is generally required in such valuations?
(2) What is the relative importance of each variable?
(3) Is the valuation process for open-market valuations the same as for notional valuations based on court case data, upon which all previous studies are based? Notional valuations include those for taxation and estate planning purposes. Open valuations are for actual or potential share transactions.

VARIABLE SELECTION

In selecting variables which may be considered important by valuators we follow the advice of Whittington and Whittenburg (1980) who, in a not unrelated study, argue that selection of variables should be based upon

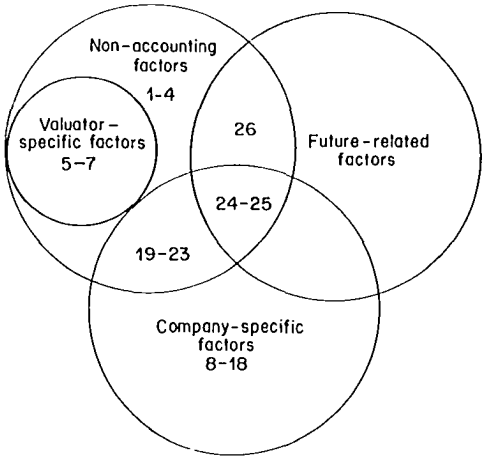

Figure 1. Variable categorization

Key to variables:

1 General economic conditions
2 Industry background
3 Market value of shares of comparable companies
4 Position of company in industry
5 Valuator ability
6 Valuator experience
7 Valuator judgement
8 Book value of net assets
9 Fair market value of net assets
10 Historical dividends
11 Historical earnings
12 Leverage
13 Liquidity
14 Presence of goodwill
15 Controlling interest
16 Minority interest
17 Size
18 Tax implications
19 Company background
20 Management
21 Presence of restrictive agreement
22 Prior recent sales of shares
23 Purpose of valuation
24 Future dividends prospects
25 Future earnings prospects
26 Future industry prospects

a review of the cases in the area and an examination of the literature.

Following earlier studies by Gill (1960) and Martin (1975), Kantor (1984) conducted a comprehensive analysis of the variables cited in 408 US tax court cases between 1946 and 1982 in valuing closely held companies (reference to be provided later). The results of this study revealed that the judiciary relies heavily on objective, historical data (for example, previous sales of shares, historical earnings and book value of assets) and on the testimonies by expert witnesses working either for the tax authority or the defendant.

Empirical studies, based on court case data, have used a variety of variables (see Rice, 1950; Johnson *et al.*, 1951; Grunewald, 1961; Bosland, 1964; Englebrecht, 1976; Jensen, 1978; Lathen, 1982). Most relevant to this study is the work by Englebrecht, who constructed a multiple regression model containing nineteen independent variables which collectively explained 86.5% of the variation in court case valuations. Statistically significant variables were book value, dividend-paying capacity, expert testimony, background of business, general economic conditions, market value of stock in comparable industries, minority interest and restrictive agreements.

Based on these prior empirical studies, the analysis of US court cases, and standard texts,[3] an information set consisting of twenty-six variables was constructed for use in the structured interviews and questionnaire, employing the same definitions as Englebrecht (1976, pp. 39-57). These variables are listed in Fig. 1.

SURVEY METHOD

A seven-point Likert-scaled questionnaire was designed and tested on a cross-section of twenty valuators. From the feedback obtained a final questionnaire was designed, asking respondents to indicate the perceived importance of the twenty-six variables given in the determination of the value of an unlisted share.

The population of valuators in Canada are, for the most part, members, associates or candidates of the Canadian Institute of Chartered Business Valuators (CICBV). Revenue Canada, employing 63 valuators, deals only in fiscal (notional) valuations. Questionnaires were distributed to these valuators. Usable responses were obtained from 36 of them, representing a 57.14% response rate for 'notional' valuators.

The CICBV distributed the questionnaire to all its 559 members actively involved in 'open' valuations. A total of 231 members completed the questionnaires representing a response rate of 41.32%. Overall, therefore, responses were received from 267 valuators out of a total population of 622, a response rate of 42.93%. In addition, in-depth interviews were conducted with 44 valuators to ascertain the reliability and validity of responses.

SURVEY RESULTS

Aggregated results of the questionnaire responses are reported in Tables 1 and 2. Table 1 provides statistics concerning the perceived importance of the selected variables by the 231 'open' valuators and Table 2 provides the responses of the 36 Revenue Canada valuators involved solely in 'notional' valuations.

A review of these tables leads to certain observations.

First, future earnings is the most important variable in forming an opinion on share values. Both parametric and non-parametric statistical tests found future earnings to be significantly more important than any other variable. The next most important variable for both groups is the fair market value of net assets. These findings support the impression gained from interviews, that while valuation experts generally favour an earnings-based approach to share valuation they also seek to support the outcome by reference to the asset-based valuation method, particularly where there is insufficient information to forecast the future earnings stream with any degree of confidence.

Second, the determination of value is a highly complex process, involving a host of information variables which are useful in forecasting the future earnings stream. Almost all the survey variables are perceived to be of some importance. The low importance attached to the valuation purpose given by notional valuators is to be expected, as they only conduct fiscal valuations. However, the position is little better for open valuators; it appears that they are not particularly influenced by whether the shares are to be valued for merger, transfer, prospectus, insurance, stock options, taxation or other purposes. Little attention is also given to dividends. It would be incorrect to assume from this that the dividend models in the early valuation literature (see Williams, 1938; Molodovsky, 1959; Gordon, 1962; Solomon, 1963) are ignored. Dividend and earnings-based models are fully reconcilable, so it matters little whether earnings or dividends are the main focus of attention.

The third observation concerns the level of agreement between 'open' and 'notional' valuators as to the importance of information variables. The authors are not aware of any other studies in the non-court case area. Madeo (1979) acknowledges that use of court case data introduces a sample bias since those valuations that go to court are in some respects different from those where decisions are reached without litigation. A high degree of association was found between the two groups.[4] As might be expected, notional valuators place greater emphasis on objectivity, as witnessed in the higher importance attaching to prior recent sales of stock and historical earnings and the lower weighting given to management ability.

Fourth, the low standard deviations for most variables indicate a strong level of agreement in responses. This, in turn, suggests that valuators are reasonably

Table 1. Degree of Importance: Open Valuators

Variable	Rank	Mean[a] importance	Standard deviation	Sample size
Future earnings prospects	1	1.087	0.325	231
Fair market value of net assets	2	1.381	0.753	231
Future prospects of industry	3	1.403	0.595	231
Management	4	1.478	0.718	228
Valuator judgement	5	1.526	0.945	228
Controlling interest valuation	6	1.648	0.986	230
Minority interest valuation	7	1.677	1.047	229
Valuator ability	8	1.689	1.013	228
Valuator experience	9	1.707	0.972	229
Presence of restrictive agreement	10	1.806	0.981	222
Tax implications	11	1.908	0.967	229
General economic conditions	12	1.961	0.782	231
Historical earnings	13	1.991	0.978	231
Company background	14	2.013	0.941	230
Prior recent sale of shares	15	2.108	1.088	231
Liquidity	16	2.130	0.906	230
Presence of goodwill (intangible value)	17	2.138	1.197	225
Position of the company in the industry	18	2.165	1.010	230
Leverage	19	2.188	0.891	229
Industry background	20	2.352	0.940	230
Market value of comparable companies	21	2.370	1.196	230
Purpose of the valuation	22	2.613	1.443	230
Size	23	2.800	1.047	230
Future dividends prospects	24	3.124	1.726	226
Book value of net assets	25	3.529	1.652	227
Historical dividends	26	3.896	1.660	231
OVERALL MEAN		2.103		

[a]Importance was scaled from very important (1) to very unimportant (5).

Table 2. Degree of Importance: Notional Valuators

Variable	Rank	Mean[a] importance	Standard deviation	Sample size
Future earnings prospects	1	1.111	0.319	36
Fair market value of net assets	2	1.333	0.478	36
Valuator ability	3	1.389	0.688	36
Prior recent sale of shares	4	1.472	0.609	36
Historical earnings	5	1.528	0.878	36
Future prospects of industry	6	1.556	0.809	36
Valuator judgement	7	1.583	1.131	36
Minority interest valuation	8	1.611	1.202	36
Presence of goodwill	9	1.639	0.762	36
Controlling interest valuation	10	1.694	1.215	36
Valuator experience	11	1.694	1.091	36
General economic conditions	12	1.771	0.843	35
Management	13	1.778	0.898	36
Liquidity	14	1.917	0.841	36
Presence of restrictive agreement	15	1.943	0.938	35
Position o' the company in the industry	16	2.200	0.901	35
Leverage	17	2.222	0.898	36
Size	18	2.257	0.852	35
Company background	19	2.333	1.095	36
Industry background	20	2.361	1.046	36
Book value of net assets	21	2.667	1.287	36
Market value of comparable companies	22	2.806	1.238	36
Future dividends prospects	23	3.500	1.595	36
Tax implications	24	3.611	1.761	36
Historical dividends	25	3.778	1.853	36
Purpose of the valuation	26	4.306	1.895	36
OVERALL MEAN		2.156		

homogeneous in their beliefs and perceptions concerning the variables influencing share value.

The final observation concerns the role of accounting messages in private valuations. Historic accounting numbers barely feature in the top half of Table 1, historic earnings being ranked a lowly thirteenth. An analysis of the means of accounting versus non-accounting variables is provided in Table 3. It will be seen from this table that for open valuators the non-accounting variable group is a significantly more important information set.

CONJOINT EXPERIMENT

The insights gained from the survey discussed in the foregoing section were then validated by conducting experiments on a smaller sample of the same population of valuation experts.

Following discussions with executives of the Canadian Institute of Chartered Business Valuators and Revenue Canada, a sample of 82 valuers was selected for purposes of the study. Of these, 38 were employed within Revenue Canada involved exclusively in 'notional' valuations for tax purposes. The remaining 44 participants were drawn from seven of the practising firms regarded as being most heavily involved in valuation work. The latter group was specifically requested to consider the experiment in terms of 'open valuations'. A typical data collection exercise involved three steps: an open interview of the valuation process adopted, examination of the documentary evidence supporting recent unlisted share valuations and the card-ranking (conjoint) exercise. Meetings lasted, on average, approximately 2 hours.

Several of the 26 variables used in the original survey could be eliminated because of the form of the specific task presented to valuators. For example, the valuations to be performed were for all shares (not minority or controlling interests), and for either tax purposes (if a court case valuation) or for buy–sell purposes (if a non-court case valuation). This reduced the number of variables to 17.

Conjoint analysis is a powerful analytical tool used in measuring judgements of rank-order quality. The basic task required valuators to rank, according to value, a number of cards conveying data representing fictitious companies. Conjoint analysis then decomposed the overall responses so that the relative importance (or utility) of each information variable could be inferred.

1. Book value of assets 30% above industry average
2. Company background favourable
3. Fair market value of net assets 30% above industry average
4. Future dividends prospects favourable
5. Future earnings prospects favourable
6. Future prospects for the industry favourable
7. General economic conditions favourable

Figure 2. Card example

In this particular valuation experiment each variable had two possible levels, as shown in the Appendix. Participants were presented with three decks of cards, each deck consisting of eight cards, and each card representing a fictitious company for valuation. Their task was to rank the cards within each deck according to value. Each card described a company in terms of seven of the 17 variables, using one of the levels specified for each variable. An example of one such card is given in Fig. 2. Cards within a particular deck had the same seven variables with varying levels. Of the 17 variables, three were repeated in more than one deck of cards.[5]

CONJOINT RESULTS

The LINMAP package (see Srinivasan and Shocker, 1981) was used to analyse the data. Aggregated results of the conjoint experiment are presented in Table 4. For both notional and open valuers, future earnings prospects was the single most important factor, accounting for, on average, approximately 22% of the variation in valuations. Its overriding importance in valuation terms is evidenced by the observation that it has a percentage three times greater than its closest competitor.

It will be seen that while historic accounting information (such as historic earnings, dividends and book value of net assets) do have a bearing on share valuations, even their collective importance is less than that of the highest-ranked variable.

Comparison of importance weightings for open and notional valuator groups (using the *t*-test for sample proportions) revealed a considerable level of agreement. Only two variables produced significant differences (future earnings prospects and industry background), suggesting that open valuations generally involve greater investigation into softer information sources (e.g. profits forecasts) and the wider environment in which companies operate.

In general, the results of the conjoint experiment support those of the wider survey. Comparison of rankings reveals rank correlation coefficients of 0.75 for notional and 0.47 for open valuation, both significant at the 0.05 level.

Table 3. Mean Importance of Accounting and Other Variables

Variable categorization	Open Sample	Notional Sample	Full Sample
Accounting data	2.302	2.216	2.290
Non-accounting data	1.950	2.141	1.977
Wilcoxon matched-pairs signed-rank test	0	0.299	0

Table 4. Relative Importance of Attributes

Attribute	Total Mean (%)	Total Ranking[a]	Notional Mean (%)	Notional Ranking[a]	Open Mean (%)	Open Ranking[a]
Future earnings prospects	21.57	1	18.15	1	24.70	1
Position of the company in the industry	7.13	2	7.61	2	6.71	2
Management	6.56	3	6.83	3	6.30	3
Future industry prospects	6.04	4	6.66	4	5.51	7
Historical earnings	5.92	5	5.75	6	6.06	4
Presence of goodwill (intangible value)	5.88	6	6.36	5	5.47	8
Fair market value of net assets	5.67	7	5.49	8	5.80	5
General economic conditions	5.37	8	5.66	7	5.12	9
Leverage	4.96	9	5.09	10	4.82	11
Book value of net assets	4.73	10	4.38	12	4.99	10
Industry background	4.66	11	3.56	14	5.56	6
Company background	4.21	12	3.49	16	4.80	12
Presence of a restrictive agreement	3.89	13	5.16	9	2.82	16
Size	3.78	14	4.59	11	3.08	14
Historical dividends	3.74	15	4.36	13	3.20	13
Future dividends prospects	3.10	16	3.34	17	2.90	15
Liquidity	2.79	17	3.52	15	2.16	17

[a]1 is most important.

SUMMARY

The findings of the main survey and conjoint experiment broadly support the variables considered important in prior empirical work and court cases. Earnings prospects is the single most important factor in the determination of the value of an unlisted share. This should not seem particularly surprising; Beaver (1981) points out that under perfect market conditions, earnings and value are really two sides of the same coin. However, the determination of value in the absence of a capital market appears to be a highly complex process involving evaluation of a host of information variables, many of which do not easily lend themselves to objective measurement.

Business valuators, as information intermediaries, hold reasonably homogeneous beliefs and perceptions regarding the information content of accounting and other variables in determining unlisted share values. Only relatively minor differences in the importance of these variables appear to occur between open and notional valuations.

It is hoped that the findings of this paper offer a basis for future work in an important but neglected area of finance. We do not pretend that such research will be easy, particularly in view of the finding that accounting numbers seem to have only limited importance in the valuation process.

APPENDIX: SCHEDULE OF ATTRIBUTES AND LEVELS

Attributes	Levels 1	2
Book value of net assets	30%[a]	30%[b]
Company background	F	U
Fair market value of net assets	30%[a]	30%[b]
Future dividends prospects	F	U
Future earnings prospects	F	U
Future prospects of industry	F	U
General economic conditions	F	U
Historical dividends	30%[a]	30%[b]
Historical earnings	30%[a]	30%[b]
Industry background	F	U
Leverage (total debt ÷ total assets)	F	U
Liquidity (Current assets ÷ current liabilities)	F	U
Management	Strong	Weak
Position of the company in the industry	F	U
Presence of a restrictive agreement	No	Yes
Presence of goodwill (intangible value)	Yes	No
Size	30%[a]	30%[b]

[a]30% above industry average.
[b]30% below industry average.
F: Favourable.
U: Unfavourable.

NOTES

1. For a description of these approaches see Glover (1983).
2. The interested reader will find useful surveys of informational content studies in Kaplan (1978) and Beaver (1981).
3. Two such standard works are Baynes (1973) and Ovens and Beach (1972).
4. A Spearman rank correlation coefficient of 0.786 was obtained.
5. A fuller description of the methodology outlined will be found in Kantor (1984). The number of trials required reduces to only eight for each deck using the fractional factorial design of Addelman (1962, Plan 1).

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