

The valuation of take-overs by companies listed on The Johannesburg Stock Exchange

INTRODUCTION

There are a multitude of activities preceding the final consummation of a take-over. Some of these are: seeking out a likely prospect, investigating the particular prospect, negotiations with the prospective acquiree company, valuation of the prospective company, as well as the preparation of documents to be released to the shareholders of the prospective company. A great deal of planning is involved in the take-over of a company. It has been shown that there is a direct relationship between the degree of planning and take-over success⁽¹⁾. The correct valuation of a take-over prospect is essential for planning a successful take-over. The objective of this paper is to determine the different methods of valuing take-overs by the Top 100 Companies listed on the JSE.

THE USE OF DISCOUNTED CASH FLOW IN CAPITAL BUDGETING

Investment literature highlights the importance and the complexity of capital budgeting techniques, such as discounted cash flow (DCF). A large percentage of companies listed on the JSE are using such techniques for decisions relating to internal expansion⁽²⁾. However, Bierman and Smidt⁽³⁾ have observed that the use of DCF and other capital budgeting techniques were strongly resisted by management when they were introduced. The valuation process for a take-over is no different than that for any other capital project and capital budgeting techniques, such as DCF analysis, are the correct methods of valuing a prospective take-over. However, a study by Newbould⁽⁴⁾ found that very few acquiring companies in his United Kingdom study used DCF and other capital budgeting techniques for valuing take-overs. A pilot study preceding the actual study revealed that none of the responding companies made consistent use of DCF and related techniques in valuing prospective

take-overs. The actual study was directed towards all companies ranked in the FM Top 100 Companies survey during the period 1966-76⁽⁵⁾.

Question 1 asked the responding companies if it was company policy to make use of DCF analysis before proceeding with a take-over. An interesting and surprising observation is that none of the responding companies indicated the use of DCF analysis as a basis to proceed with a potential take-over. Question 2 asked the responding companies if they had made occasional use of DCF analysis in valuing any of their take-overs. The implication of this question is that, even though the DCF was not the primary method of valuation, it was used as subsidiary information relating to certain take-overs. Only 14 out of a total of 92 responding companies replied positively to this question. It appears that only 15,2 per cent of the responding companies made occasional use of DCF analysis for the valuation of take-overs.

The take-overs undertaken by the 92 responding companies show a wide distribution in the rate of take-over activity. It can be expected that the frequency of take-overs would have an influence on the use of DCF analysis in valuing take-overs. Companies involved in frequent take-overs would be better organised in planning the various aspects of take-overs, and therefore these companies can be expected to make greater use of DCF analysis. An analysis was undertaken to determine if the frequency of take-overs influences the use of DCF analysis in the valuation of take-overs. With the eleven year study in mind, it was decided that up to 5 take-overs represented a low take-over rate, between 6 and 10 take-overs an average rate, and above 10 a high rate. The following hypothesis was tested:

Hypothesis 1: The use of DCF analysis varies in direct relation to the intensity of take-overs.

The results of the cross-tabulation are shown in Table 1⁽⁶⁾.

Table 1: The relationship between intensity of take-overs and the use of DCF analysis in take-over valuation

	Take-over rate					
	Low		Average		High	
	Number of companies	%	Number of companies	%	Number of companies	%
Using DCF analysis	3	7,3	2	8,3	9	33,3
Not using DCF analysis	38	92,7	22	91,7	18	66,7
Total	41	100,0	24	100,0	27	100,0

Chi-square = 9,73317 with 2 degrees of freedom
 Level of significance = 0,0077

The above table reveals that companies that are active in take-overs make greater use of DCF analysis than those that are less active. Companies which belong to the high take-over group are 29,4 per cent of all companies, yet they are 64,2 per cent of companies using DCF analysis. The results of the chi-square test indicate that there is a statistically significant direct relationship (at a 0,0077 level) between take-over intensity and the use of DCF analysis in take-over evaluation. Based on the results of

this study hypothesis 1 is accepted. In view of the small number of acquiring companies actually using DCF analysis, however, the above results are not reliable and should be viewed with caution. Further tests using larger samples should be conducted to confirm the finding of this study that there is a statistically significant direct relationship between take-over intensity and the use of DCF techniques.

METHODS OF VALUATION USED BY ACQUIRING COMPANIES

Question 3 of the questionnaire asked the responding companies the predominant basis for the valuation of take-overs. It was expected that an acquiring company uses one of five different valuation bases for individual take-overs. The responding firms were asked to indicate which of the five methods of valuation listed were used. Provision was also made for other methods of valuation. The distribution of the various methods of valuation is shown in Table 2⁽⁵⁾.

The method of valuation most used is based on the current market price of the prospective take-over. This method was used by 33,7 per cent of the responding companies. The price earnings ratio and the net asset value was used by 23,9 per cent and 22,8 per cent respectively of the responding companies. These are surprising results when one considers that the financial literature strongly recommends an analysis of the profitability, growth, and risk as a basis of valuation for both internal and external forms of expansion⁽⁶⁾. It is submitted that future earnings and profitability are the more relevant criteria for valuation. Only the last three bases of valuation shown in Table 2 satisfy this criterion, which was used by 16 companies, representing 7,4 per cent of the total response.

The fact that a large percentage of the Top 100 Companies use irrelevant methods is disturbing. This must be seen in light of the fact that an incorrect valuation can have serious effects on the future profitability of the acquiring company. The responding companies represent some of the largest companies in South Africa. Having sufficient human resources as well as financial expertise, they need not rely on such superficial methods of valuation as: the current market price, the current price earnings ratio, and the net asset value.

Table 2: Methods of valuation used by acquiring companies during the study period

Method of valuation	Number of responding companies	Percentage of total	Cumulative frequency
Current market price	31	33,7	33,7
Price earnings ratio (P/E ratio)	22	23,9	57,6
Net asset value	21	22,8	80,6
Price of similar company acquired	2	2,2	82,6
Take-over price in relation to profitability	14	5,2	97,8
*Profitability potential and related criteria	1	1,1	98,9
*Earnings and assets employed	1	1,1	100,0
*Listed as an alternative by respondents	92	100,0	

A probable reason for the use of the less relevant criteria in the valuation of take-overs is the ease of obtaining such information. Information on the current market price, price earnings ratio, and net asset value is readily available from published sources, such as stock exchange reports and company financial statements. On the other hand, the relevant valuation criteria requires information on the profitability, growth, and risk of the prospective take-over. Such information is not readily available from published sources and therefore special investigation is necessary. Such investigations are usually expensive and time consuming. The highly active acquiring companies can be expected to make greater use of the easily obtained but less relevant valuation criteria. The less active acquiring companies, with more time to make detailed investigations of take-over prospects, are in a position to make greater use of the relevant criteria.

In view of the importance of the correct method of valuing a take-over it was decided to investigate if companies having different take-over intensities show differences in the methods of valuing a prospective take-over.

The following hypothesis was tested:

Hypothesis 2: The use of relevant criteria in the valuation of take-overs is influenced by the intensity of the take-over activity. The use of relevant criteria varies inversely with the intensity of take-overs.

The results of the chi-square test to test hypothesis 2 are shown in Table 3⁽⁵⁾.

Table 3: The relationship between the intensity of take-overs and the different methods of valuation of the prospective take-over

Group	Method of valuation	Take-over rate					
		Low		Average		High	
		Number of companies	Total %	Number of companies	Total %	Number of companies	Total %
(a)	Current market price	12	29,3	7	29,2	12	44,5
	Price earnings ratio	11	26,8	4	16,7	7	25,9
	Net asset value	10	24,0	8	33,3	3	11,1
	Price of similar company acquired	0	—	0	—	2	7,4
	Sub-total	33	80,5	19	79,2	24	88,9
(b)	Price in relation to profitability	7	17,1	5	20,8	2	7,4
	Profitability and related criteria	1	2,4	0	—	0	—
	Earnings and assets employed	0	—	0	—	1	3,7
	Sub-total	8	19,5	5	20,8	3	11,1
Total		41	100,0	24	100,0	27	100,0

Chi-square = 12,16997 with 10 degrees of freedom
 Level of significance = 0,2738

In terms of our classification group (a) represents less relevant valuation methods and group (b) relevant methods. The results indicate that companies in each take-over intensity group are making greater use of the less relevant valuation methods. Companies in the low and average intensity group do, however, show a tendency towards using the relevant valuation methods. The results of the chi-square test indicate that the inverse relationship between intensity of take-over and the use of relevant valuation methods is not statistically significant. Therefore, the alternative hypothesis that the use of relevant valuation methods is not influenced by take-over activity has to be accepted.

CONCLUSION

An investment in a take-over is no different than a direct investment in a capital project. No responding company reported the use of DCF analysis as a primary method of evaluating take-overs. Only a small percentage of responding companies make use of DCF analysis as secondary information. There is an inconsistency in the use of DCF analysis for internally developed capital projects and for take-overs. It would seem that acquiring companies do not regard take-overs as an alternative to direct investment in capital projects.

A consideration of the future earnings and profitability of a prospective take-over is an important indicator of take-over success. The majority of the companies listed on the JSE are more concerned with less relevant criteria such as the current market price and price earnings ratio of the take-over candidate. An insufficient consideration of profitability-related criteria contributes towards the risk of take-over failure.

It is recommended that the companies listed on the JSE adopt a more sophisticated approach to the valuation of take-overs. This can be achieved by greater usage of DCF and other capital budgeting techniques. Furthermore, they should also devote greater attention to future earnings and profitability criteria when considering take-overs.

References and footnotes

- 1 Ansoff, H. I. and Bradenburg, R. G. and Portner, F. E. and Radosevich, R. *Twenty Years of Acquisition Behaviour in America*. London: Cassel - Associated Business Programmes, 1972.
- 2 Lambrechts, I. J. The Practice of Capital Investment decisions-making in South Africa. *The Investment Analysts Journal*, August 1976, pp. 27-31.
- 3 Bierman, H. and Smidt, S. *The Capital Budgeting Decision*. London: The MacMillan Company, 1972, 3rd edition.
- 4 Newbould, G. D. *Management and merger activity*. Liverpool: Guthstead Limited, 1970.
- 5 All listed companies that had been included in the Financial Mail Top 100 Companies survey during the period 1966-76 and had been involved in take-over activity were asked to respond to the questionnaire. Of the 124 listed companies that were approached, 16 companies did not respond to the questionnaire. Of the 108 replies received, 92 indicated that they had undertaken take-overs during the study period. All research data used in this paper have been adapted from:
 Bhana, N. *The financial and management aspects of mergers and acquisitions of selected South African companies during the period 1966-1976*.
 Unpublished Ph.D. thesis, University of Natal, Durban, 1982.
- 6 Accountants International Study Group. *Reporting by diversified companies*. Birmingham: Hopkins and Baily Ltd, 1972.