

An analysis of the behaviour of market prices during rights issues

1 INTRODUCTION

A rights issue results in a pre-emptive right to existing shareholders in order to obtain additional shares (of the same kind as the shares already being issued) pro rata to existing ownership. The subscription price of the additional shares is generally lower than the market price. The existing shares are sold cum rights from the announcement of the rights issue until the last date for registration (LDR) as a shareholder of the company and ex rights from the LDR until the closing of the offer. An investigation was carried out in order to study the behaviour of share and rights prices and to determine:

(i) The trend of the market prices of the existing shares

compared to that of the sectoral indices during the cum rights period.

(ii) The changes in market prices of the existing shares compared to those of the sectoral indices when shares become ex rights.

(iii) The extent to which changes in the market prices of the shares during the ex rights period are reflected in the market prices of the letters of allotment.

2 DISCUSSION OF METHOD OF ANALYSIS

Details of rights issues of about one hundred listed companies which made rights issues during the period 1969 to 1974 were collected. The details of each undertaking were summarised in the following way:

ROW		EXAMPLE LTD. FISHING
1	COMPANY	
2	SECTOR	
3	S	300
4	1/N	2/5
DATES: (YEAR = 197X)		
5	Two months before LDR	2/3
6	LDR	2/5
7	Just after LDR	5/5
8	Two weeks after LDR	16/5
MARKET PRICES OF SHARES		
9	Two months before LDR	440
10	LDR	600
11	Just after LDR	608
12	Two weeks after LDR	560
CUM DIVIDEND PERIODS		
13(a)	Declared on.....	5/5
(b)	LDR for dividends	2/6
14(a)	Declared on.....	15/9
(b)	LDR for dividends	19/10
DIVIDENDS DECLARED (cents)		
15	Rows 13(a) and 13(b)	8
16	Rows 14(a) and 14(b)	4
ADJUSTED MARKET PRICES OF SHARES AND PERCENTUAL CHANGES		
17	Two months before LDR	440
18	LDR	600
19	Just after LDR	600
20	Two weeks after LDR	552
21	Percentual change until LDR	+36,4
22	Percentual change after LDR (Rows 18 and 20)	-8,0
23	CHANGES IN MARKET PRICES PER LETTER OF ALLOTMENT (Row 20 - Row 19)	-48
MARKET PRICES OF LETTERS OF ALLOTMENT AND CHANGES		
24	Just after LDR	270
25	Two weeks after LDR	230
26	Row 25 - row 24	-40

1 This article is based on the following unpublished thesis: Mostert, F. J.: 'n Empiriese studie van sekere veranderinge in die gewone aandelekapitaal van genoteerde maatskappye in Suid-Afrika, 1965 tot 1974, University of Stellenbosch, 1976. The Research Fund of the University of Stellenbosch gave financial assistance for this research.

SECTORAL INDICES AND PERCENTUAL CHANGES		
27	Two months before LDR	138,8
28	LDR	210,8
29	Two weeks after LDR	198,5
30	Percentual change until LDR	+51,9
31	Percentual change after LDR	-5,8
32	THEORETICAL PERCENTUAL DECLINE IN MARKET PRICES OF SHARES AS A RESULT OF THE SHARES BECOMING EX RIGHTS	14,3
33	THE DIFFERENCE BETWEEN THE PERCENTUAL CHANGE IN THE MARKET PRICES OF SHARES AND THAT OF THE SECTORAL INDICES IN THE TWO MONTHS UNTIL THE LDR	-15,5
34	THE DIFFERENCE BETWEEN THE PERCENTUAL CHANGE IN MARKET PRICES OF SHARES FROM LDR UNTIL TWO WEEKS AFTER LDR AND THAT OF THE SECTORAL INDICES (Row 22 + Row 32 - Row 31)	+12,1
35	EX RIGHTS PERIOD: DIFFERENCE BETWEEN CHANGES IN MARKET PRICES OF SHARES AND CHANGES IN MARKET PRICES OF LETTERS OF ALLOTMENT (Row 23 - row 26)	-8
36	RESULT OF ROW 35 EXPRESSED AS A PERCENTAGE OF THE MARKET PRICES OF LETTERS OF ALLOTMENT JUST AFTER LDR (Row 24)	-3,0

The origin of some of the information contained in the above table is evident. It is however necessary to explain briefly the origin/way of calculation of certain items:

Row 3: S = subscription price (obtained from "The Johannesburg Stock Exchange Monthly Bulletin").

Row 4: N is the number of rights required to subscribe to one new share. As each existing share has only one right, $\frac{1}{N}$ equals the ratio of new shares to existing shares. This information was also obtained from The Johannesburg Stock Exchange Monthly Bulletin.

Rows 5 to 8: These rows show the various dates on which market prices were recorded, i.e. two months before LDR, LDR, just after LDR and two weeks after LDR. LDR is normally on a Friday and those in row 7 on a Monday.

Rows 9 to 12: Market prices of existing shares on the dates recorded in rows 5 to 8. Various rules were applied if a market price was not available on a specific date, but these are not relevant for the purpose of this article.

Rows 13 to 16: The cum dividend periods (between the declaration date and LDR) for the first dividends during the calendar year appear in rows 13(a) and (b) and those of the second dividends in rows 14(a) and (b). The amounts of the respective dividends appear in rows 15 and 16.

Rows 17 to 20: If the market prices in rows 9 to 12 were recorded during cum dividend periods the applicable dividend amounts were deducted from the market prices to arrive at ex dividend prices.

Row 21: This row shows the percentual change in the market prices from the announcement of the rights issue until the LDR.

Row 22: The percentual change from the LDR until two weeks after LDR.

Row 23: This row shows the change in the market prices of shares per letter of allotment (or per share). The following example illustrates the method of calculation and the justification for it. Assume that the market price per share increases from just after LDR until two weeks after LDR with 35 cents. As formulated in the discussion of row 4, N equals the number of rights required to subscribe for one new share. This should theoretically result in an increase of the market price per right of $\frac{35}{N}$ cents, because the theoretical market value of a right in the ex rights period = $\frac{M-S}{N}$, where M is market price and

the other symbols have the same meaning as above. Furthermore, N rights are combined to form one letter of allotment. The increases of the market per letter of allotment therefore equals $(\frac{35}{N} \times \frac{N}{1})$, i.e. 35 cents. A change in the market price *per share* is therefore equal to a change in the market price *per letter of allotment*. The reason why the words "per letter of allotment" are used, is to indicate that the changes in this row are comparable to the changes in the market prices of the letters of allotment as it appears in row 26.

Rows 24 and 25: These rows show the market prices of the letters of allotment on the applicable dates.

Row 26: The change in the market prices of the letters of allotment is calculated.

Rows 27 and 29: These rows show the sectoral indices (obtained from the "Rand Daily Mail").

Row 30: The percentual change of the sectoral indices during the two months before the LDR.

Row 31: The percentual change of the sectoral indices during the two weeks after LDR.

Row 32: The theoretical percentage decline in the market prices of the existing shares as a result of the shares becoming ex rights is shown in this row. The following formula was used to calculate the decline:

$$D = \frac{M-S}{M(N+1)} \times \frac{100}{1} \%$$

where:

D = theoretical percentual decline in market prices,
M = market price per share during the cum rights period,
S = subscription price of the additional shares,
N = number of rights necessary to get one additional share (each existing share has only one right).

Details of row 3 and 18 as well as the reciprocals of row 4 are used for the calculation of D.

Row 33: The difference between the percentual change in the market prices of shares and that of the sectoral indices in the two months until the LDR (row 21 - row 30).

Row 34: The difference between the percentual change in market prices of shares from LDR until two weeks after LDR and that of the sectoral indices. To calculate the change in the market price of a share the actual change and the theoretical change (as a result of shares becoming ex rights) are taken into account, i.e. row 22

plus row 32. The sum indicates the theoretical net change of a particular share excluding the effects of it becoming ex rights, e.g. row 22 = +6,0 per cent and row 32 = 2,0 per cent (please note that in the latter case the figure indicates a theoretical decline). Therefore, had it not been for the share becoming ex rights one would have expected that row 22 would have been +8,0 per cent. If the difference between this figure (row 22 + row 32) and row 31 is zero and if the assumption is made that the share prices of companies in a sector change in line with that of the sector one could conclude that the formula on which row 32 is based, is of practical use.

Row 35: The difference between the changes in the market prices of the existing shares per letter of allotment during the ex rights period and the changes in the market prices of the letters of allotment (row 23–row 26).

Row 36: The difference between the changes in the market prices of the existing shares during the ex rights period and the changes in the market prices of the letters of allotment during the same period is expressed as a

percentage of the market price of letters of allotment just after LDR.

3 RESULTS OF INVESTIGATION

A differentiation was made between rights issues which took place during the periods when the business cycle (derived from share prices) showed an upward trend and those which took place during the downward trend. To accomplish this the Rand Daily Mail industrial indices were assimilated by means of the computer in order to find the periods of upward and downward trends. This included the elimination of seasonal and accidental factors as well as the long-term trend. As expected the majority of rights issues took place during the upward phases of the business cycle.

3.1 Trend of the market prices of existing shares compared to that of the sectoral indices during the cum rights period

The figures supplying the information regarding the abovementioned trend appear in row 33 and are summarised in Table 1.

Table 1: Classification of the differences between the percentual change in the market prices of shares and those of the sectoral indices in the two months until LDR

	During upward phases of the business cycle		During downward phases of the business cycle		Total	
	Number	%	Number	%	Number	%
≥ + 20%	3	5,2	4	10,4	7	7,3
+ 15% to + 19,9%	2	3,5	2	5,3	4	4,1
+ 10% to + 14,9%	4	6,9	2	5,3	6	6,3
+ 5% to + 9,9%	8	13,8	6	15,8	14	14,6
+ 0,1% to + 4,9%	6	10,3	6	15,8	12	12,5
0%	0	0,0	0	0,0	0	0,0
- 0,1% to - 4,9%	14	24,1	4	10,5	18	18,8
- 5% to - 9,9%	6	10,3	6	15,8	12	12,5
- 10% to - 14,9%	6	10,3	4	10,5	10	10,4
- 15% to - 19,9%	2	3,5	2	5,3	4	4,1
≤ - 20%	7	12,1	2	5,3	9	9,4
	58	100,0	38	100,0	96	100,0

Note: Results were obtained for 96 companies.

This table reveals the following:

- During upward phases of the business cycle; In 39,7 per cent of the cases the changes in share prices were higher than those in sectoral indices and in 60,3 per cent of the cases they were lower. Only 34,4 per cent of the cases yielded a result varying between +4,9 per cent and -4,9 per cent.
- During downward phases of the business cycle; In 52,6 per cent of the cases the changes in share prices were higher than those in sectoral indices and in 47,4 per cent they were lower. Only 26,3 per cent of the cases yielded a result varying between +4,9 per cent and -4,9 per cent.
- Total figures. Positive results were obtained in 44,8 per cent of

the cases while the results were negative in 55,2 per cent of the cases. Only 31,3 per cent of the cases yielded a result varying between +4,9 per cent and -4,9 per cent.

It can be concluded that there is no definite evidence that the announcement of a rights issue *per se* has a favourable influence on market prices of shares. Furthermore, no important difference between the results obtained during the upward and downward phases of the business cycle were obtained.

3.2 Change in market prices of existing shares compared to those of the sectoral indices when shares become ex rights.

This information was summarised in row 34. Table 2 contains an analysis of that information.

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Table 2: Classification of the differences between the percentual change in the market prices of existing shares and those of the sectoral indices when shares become ex rights

	During upward phases of the business cycle		During downward phases of the business cycle		Total	
	Number	%	Number	%	Number	%
≥+ 20%	2	3,4	2	5,3	4	4,2
+ 15% to +19,9%	4	6,9	0	0,0	4	4,2
+ 10% to +14,9%	7	12,1	3	7,9	10	10,4
+ 5% to + 9,9%	7	12,1	4	10,5	11	11,5
+0,1% to + 4,9%	12	20,7	8	21,1	20	20,8
0%	1	1,7	1	2,6	2	2,1
- 0,1% to - 4,9%	16	27,6	7	18,4	23	23,9
- 5% to - 9,9%	5	8,6	9	23,7	14	14,6
- 10% to -14,9%	3	5,2	2	5,3	5	5,2
- 15% to -19,9%	0	0,0	1	2,6	1	1,0
≤- 20%	1	1,7	1	2,6	2	2,1
	58	100,0	38	100,0	96	100,0

Note: Results were obtained for 96 companies.

There are not important differences between the results obtained for upward phases of the business cycle and those for downward phases. In about 47 per cent of the cases differences varying between +4,9 and - 4,9 per cent were recorded. If the market prices of shares follow the same trend as the sectoral indices the formula described in row 32 gives an approximated indication of the percentual decrease in market prices as a result of shares becoming ex rights in about 50 per cent of the cases.

3.3 The extent to which changes in the market prices of the shares during the ex rights period are reflected in the market prices of the letters of allotment

The results of row 36 where the difference between the changes in the market prices of the existing shares during the ex rights period and the changes in the market prices of the letters of allotment during the same period (expressed as a percentage of the market price of the letters of allotment just after LDR) are summarised in Table 3.

Table 3: Classification of the differences between the changes in the market prices of shares and those of the letters of allotment expressed as a percentage of the market prices of the letters of allotment just after LDR

	During upward phases of the business cycle		During downward phases of the business cycle		Total	
	Number	%	Number	%	Number	%
≥+ 20%	12	24,5	3	9,1	15	18,3
+ 15% to +19,9%	3	6,1	0	0,0	3	3,7
+ 10% to +14,9%	1	2,0	2	6,1	3	3,7
+ 5% to + 9,9%	2	4,1	1	3,0	3	3,7
+0,1% to + 4,9%	2	4,1	0	0,0	2	2,4
0%	2	4,1	3	9,1	5	6,1
- 0,1% to - 4,9%	2	4,1	1	3,0	3	3,7
- 5% to - 9,9%	1	2,0	1	3,0	2	2,4
- 10% to -14,9%	5	10,2	1	3,0	6	7,3
- 15% to -19,9%	1	2,0	0	0,0	1	1,2
≤- 20%	18	36,8	21	63,7	39	47,5
	49	100,0	33	100,0	82	100,0

Note: Results were obtained for 82 companies.

If positive results are obtained it is an indication that only part of the changes in the market prices of the existing shares is reflected in the market prices of the letters of allotment. In the case of a negative result the change in the market price of the letter of allotment is higher than the change in the market price of the existing share and the conclusion could possibly be made that other factors influence the market prices of the letters of allotment. Examples of these other factors are the situation on the

money and capital market and possibly a higher marketability because of lower amounts involved. It is interesting to note that in the majority of the cases investigated, negative results were obtained. During upward phases of the business cycle about 55 per cent of the cases yielded negative results while in downward phases this figure amounted to about 73 per cent, giving a weighted total of 62 per cent. One would have expected the contrary, i.e. a higher figure for the negative results in

upward phases of the business cycle than in downward phases. This expectation arises from the fact that *theoretically* (according to the formulae which are used widely) the change (decrease in a period of decreasing share prices) in share prices would result in a greater change in the prices of the letters of allotment; a leverage effect. On the other hand one would expect that only the better undertakings would go to the market for additional ordinary share capital in a period of decreasing share prices.

4 COMMENTS

It may appear as though the results are not very encouraging, but it is necessary to emphasise the following:

(a) The survey was only done for a period of six years. A

longer period may yield more significant results.

- (b) The sectoral indices are weighted averages of the market prices of the companies concerned. It is therefore logical that some companies will have different trends than others, the problem with all averages.
- (c) There is a possibility of time lags between the market prices of the shares and the sectoral indices. This may have an impact on the results.
- (d) It is possible that seasonal and accidental factors can influence market prices. Only the impact of dividends declared was eliminated.

As this survey was nothing but an attempt to analyse the market prices of shares and letters of allotment during a rights issue, comments on the broader problems of rights issues would be appreciated.