

# MARKET PERFORMANCE OF MINING COMPANIES PRIOR TO DELISTING

by

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## 1. Introduction

The mining industry in Australia represents a very important sector of the nation's economy. It requires large investments of capital to sustain itself, investments which are traditionally recognised to be subject to high risk and long lead times before returns are earned. As a result, much of the investment comes from equity sources.

A cursory examination of Stock Exchange Mining lists indicates two striking features: –

- the wide cyclical fluctuations of prices, and
- the high proportion of companies delisted.

Together, these features suggest that many mining companies may be unsuccessful or at least not successful enough to justify their continued listing. Since the industry relies heavily on share capital for its investments, it is of interest to know whether the high incidence of delistings makes mining investments less attractive to investors.

*The aim of this paper is to examine, through movements in share prices, how shareholders react to the prospect of delisting. This reaction is observed by investigating the market performance of delisted mining companies in the three years prior to their delisting.*

The study covers all companies delisted from the Mining Board of the Sydney Stock Exchange from 1958 to 1977 inclusive. Since the period includes almost two complete cycles of the mining industry, the results should be fairly typical of the experiences of delisted companies.

Data for the investigation was obtained from the AGSM/CRA monthly price file, Version I\*(1), the Sydney Stock Exchange's publication on delisted companies (2) Jobson's Industrial and Mining Year Books (3) and individual company reports. The monthly price file provides the necessary performance information. The publications are used to establish the date and reasons for delisting and to analyse the company histories prior and subsequent to their being delisted.

Section 2 of the paper describes the preliminary evidence and method used to classify the companies

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\*The author wishes to thank Prof. Philip Brown for permission to use the AGSM/CRA Data Files.

into three groups which can be expected to perform differently prior to delisting. Section 3 discusses the methodology and experiment. The results and conclusions are presented in Section 4.

*The overall conclusion is that companies which are delisted for different reasons exhibit very different performance characteristics prior to the event. These differences can be observed up to two years before delisting takes place. Hence it appears that shareholders react to the reasons for delisting rather than to the event itself.*

## 2. Preliminary Evidence and Classification of Delisted Companies

A preliminary investigation establishes the frequency of delisting. It is found that 199 companies are delisted out of a total of 413 listed over the 20 year period. This frequency far exceeds that for other industrial companies and provides some indication of the uncertainty of mining as opposed to other industries.

Table 1 shows the number and percentage of companies delisted annually, the size of the Mining Board and the Mining Index. Substantial variations in the number and percentage of delistings can be noted from year to year. Overall it appears that delistings occur more frequently when the mining index is falling and that new listings are associated with a rising index. These findings are not surprising. They imply that mining investments are highly sensitive to market factors and that some delistings, at least, may be associated with adverse conditions in the industry.

The reasons for delisting are also investigated so that companies can be grouped together according to factors likely to have a similar effect on performance. This classification allows for separate testing and comparison between groups.

A classification system, based on the official reasons for delisting given by the Stock Exchange, was first investigated (2). There appear to be four major reasons for delisting: –

- Non-compliance with listing requirements (such as the non payment of annual fees or not filing company accounts.)
- Receiver, liquidator or company application

- Takeover or substantial change of control
- Significant name change.

A subsequent investigation of the individual company histories, however, indicates that the official reasons given are often misleading. For instance, a failure to pay annual fees or file company accounts does not necessarily indicate that the company is in financial distress. In some cases it occurs for an entirely different reason such as a takeover or movement of the company into another industry.

A detailed examination of company histories indicates a suitable alternative classification system. Companies can be divided into three classes, each likely to experience different operating conditions and market performance prior to delisting. These classes are: -

- Class 1 - Failures* - Companies ceasing operations either because they are liquidated

or have no viable activity to pursue.

- Class 2 - Takeovers*

- Companies which are taken over or come under the effective control of other mining companies.

- Class 3 - Activity Changes*

- Companies which change from mining to industrial activity (In many cases to property or construction - related fields).

The three classes of delisted companies are of comparable size as shown in Table 1. In all three groups delistings occur most frequently towards the end of the 1970s mining boom. However failures are more uniformly distributed throughout the period

**Table 1 - Mining Companies Delisted 1958-1977**

Year	Total Listed on 30 June	Number Delisted	Percentage Delisted %	Mining Index on 30 June (Footnote)
1958	79	1	1.3%	101
1959	80	5	6.3	141
1960	75	9	12.0	188
1961	67	7	10.4	190
1962	61	5	8.2	185
1963	59	3	5.1	221
1964	55	2	3.6	348
1965	56	2	3.6	346
1966	54	2	3.7	494
1967	60	1	1.7	644
1968	67	2	3.0	1683
1969	95	1	1.1	1559
1970	188	7	3.7	1793
1971	285	3	1.1	1106
1972	318	23	7.2	962
1973	298	29	9.7	796
1974	262	26	10.0	538
1975	242	35	14.5	609
1976	204	29	14.2	817
1977	190	7	3.7	923
Mean 6.2% (S.D. 4.3)				
<b>TOTAL DELISTED</b>		199		100%
Class 1 - Failures		72		36%
Class 2 - Takeovers		60		30%
Class 3 - Activity change		67		34%

(Footnote: Value weighted index of all equities on AGSM/CRA Mining File [1 - Table 4.1])

than are takeovers or changes in activity.

Exploration companies account for approximately half of the total delistings. Thirty percent of delisted companies are engaged in active production while the remaining twenty per cent are companies whose chief activity is investment in mining. Approximately half of the producers are mining old ore bodies which have been placed in care and maintenance at some previous stage and must therefore be regarded as marginally payable.

Exploration, production and investment companies occur in all three classes used in this study. Although there appears to be some overlap between the types of mining activity and the classes adopted this overlap is only partial and is found to be statistically insignificant.

### 3. Further Investigation

#### Methodology

The experiments consist of a set of market 'announcement studies' (4). The underlying theory assumes that markets adjust efficiently to new information about investments and that the capital asset pricing model (CAPM) adequately estimates the expected returns from investments. The technique consists of measuring, at some point in time relative to the event being investigated, the difference between the actual monthly return and the expected return predicted by the CAPM. This difference, the residual, is assumed to represent the adjustment which investors make to share prices to restore returns to their equilibrium values. These adjustments occur as soon as shareholders receive new information and, as a result, revise their expectations about the company's future prospects.

The monthly residuals of companies experiencing the event are averaged and the averages accumulated over time to provide an accumulated average residual (CAR). This CAR provides a measure of the total impact of the event and the period over which its effect is felt.

The technique is used in this investigation to estimate how shareholder valuations of the three classes of firms change during the 36 months prior to delisting. Previous evidence, based on industrial companies, suggests that the changes for the three classes are likely to differ. Thus, failing companies are likely to experience a steadily negative drift in CAR values for a considerable period prior to delisting (5), while firms taken over may experience a positive trend in CAR values during the months of negotiation (6).

However there is no evidence on the likely effect of a change of activity of firms moving to a new industry.

#### Experimental Procedures

The 'announcement studies' use two sampling procedures. The different samples consist of: –

- the total population (sample sizes 72, 60 and 67) and
- only companies trading actively throughout the 36 months prior to delisting (sample sizes 38, 45 and 47).

The first procedure eliminates sampling errors, the second provides more uniform monthly data for testing. More stringent criteria are not adopted as this tends to eliminate the marginally successful firms and the experiment aims, essentially, to capture the characteristics of such companies.

The version of the CAPM used to predict expected returns is the simple market model which provides a control for market returns but assumes that all companies have the same relative risk ( $B = 1$ ) (7). Using this model the expected individual return is equal to the market return in that month. The market return is calculated from the equally weighted mining index of all equities listed on the AGSM/CRA mining file (1 – Table 4.2).

### 3. Results and Conclusions

#### Results

The results are summarized in Table 2 and Figure 1. Table 2 shows the mean sampling value of the average monthly residuals during each year prior to delisting and over the whole period. In all cases the expected average residual is zero. The increasing divergence from zero can be observed as can the difference in values for the three samples.

Figure 1 shows the CAR values for each class using the smaller, selected sample. The results, using the total population sample are very similar to those shown.

The most striking feature of the results is the wide divergence in average residual and CAR values of the three classes by the time they are delisted. The divergence increases in the last year but the trend is already obvious in all cases two years prior to delisting.

*Class 1 Companies (failures)* exhibit a persistent and increasingly negative trend in CAR values during the last two years of listing. This suggests a continuous downward revision of expectations on the

part of investors. The findings are similar to those of Castagna in a study of failing Australian industrial companies and generally confirm overseas findings (5).

*Class 2 Companies (Takeovers)* exhibit no significantly marked trend in CAR values or average residuals until the last year. During the last six months a distinct positive trend can be observed. This may be associated with rumours of a likely takeover from which investors expect to benefit. Other studies of takeovers suggest a similar positive movement in the CAR values of offeree companies in anticipation of takeover offers. (6).

*Class 3 Companies (Change of Activity into Another Industry)* exhibit the strongest positive trend in CAR values particularly during the last year of listing. An examination of the activities of these companies from company records reveals that investment in non-mining activities has begun in almost all cases one or two years prior to delisting. On average a substantial proportion of the company's resources are invested in these alternative activities approximately one year prior to delisting.

The results for this class are probably biased upwards since there is a marked clustering of delistings between 1972–1974. The sharp upward kink in the graph approximately 27 months prior to delisting is probably associated with the peak of the mining boom. This kink might disappear if delistings were spread more evenly throughout the 20 year period under examination.

The findings for this class are nevertheless interesting since there is no previous evidence on how investors are likely to react to a movement from one industry to another. The evidence suggests that, even when allowance is made for the kink, shareholders react favourably to this type of adaptive strategy.

The pattern of results for the three classes of companies is confirmed in a further series of tests

(10). These show the same divergence of CAR values using:

- three alternative versions of the CAPM which provide different methods to control for market factors and the relative risk of individual companies and
- different methods of calculating relative risk (*B*).

The reported results use the simple market model which controls for market factors but not for individual company risk. It is considered most appropriate to use this simple, robust model with data of this quality.

## Conclusions

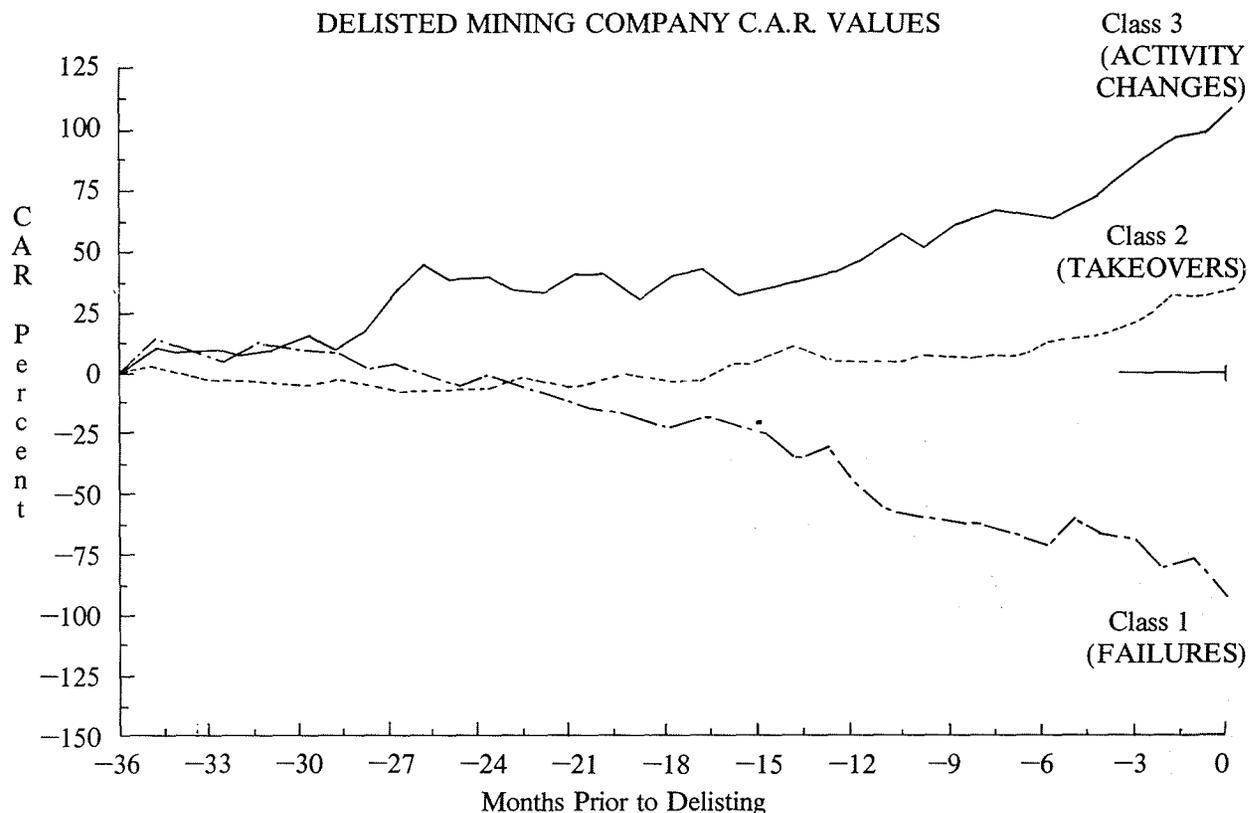
The results indicate that anticipated delisting may produce a variety of responses from investors depending on its cause. The evidence suggests that shareholders begin to discriminate, up to 2 years ahead, between companies which will cease operations and those whose operations will continue in another form. Further, it appears that only those delistings associated with failure are regarded as bad news by investors.

The evidence on shareholders' reaction to takeovers and failures of mining companies is shown to be similar to that previously documented in the case of industrial firms. In addition, the study suggests that shareholders take a favourable view of companies which adopt a major strategic change in operations at a time when their present industry's performance is depressed.

The findings of the study must be considered as tentative since weaknesses in the data are likely to cause estimation errors. This is unavoidable because of the nature of the companies being investigated. Nevertheless the signals are so large and so persistent, compared with other studies using this technique, that the results remain interesting and highly significant.

**Table 2**  
**Average Monthly Residual Returns**

Months Prior to Delisting	% per Month		
	Class 1 (Failures)	Class 2 (Takeovers)	Class 3 (Activity Changes)
– 36 to – 24 months	– 0.7	– 0.4	+ 2.3
– 24 to – 12 months	– 4.1	+ 0.1	+ 0.8
– 12 to 0 months	– 3.8	+ 2.5	+ 5.0
Average – 36 to 0 months	– 2.9	+ 0.9	+ 2.8



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