

# The market reaction to capital expenditure announcements

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## 1. INTRODUCTION

The theory of the firm regards investment decisions as one of the fundamental and central activities of the modern firm. The normative aspect of the theory claims that firm resources should be allocated to value-creating positive NPV projects. The current literature has mostly focused on managerial behaviour in advanced economies and has reported evidence that shareholder wealth is positively affected when firms make capital spending decisions (Woolridge (1988) and McConnell and Muscarella (1985)).

Recent work by La Porta, Lopez-de-Silanes, Shleifer and Vishney (2002) and Shleifer and Vishney (1997) document that corporate environments in emerging economies differ quite significantly from those in advanced economies. Claessens, Djankov, and Lang (2000) also report that many emerging markets are dominated by companies which have high ownership/asset concentration, and which are large in size and function as conglomerates. Berger and Ofek (1995) suggest that greater agency costs are incurred when firms engage in conglomeration. Accepting negative net present value projects and misallocating resources toward inefficient divisions are a manifestation of these agency costs, which negatively impact firm value (Jensen and Meckling (1976) and Mansi and Reeb (2002)). Insights from the published literature imply that these problems are likely to be more severe for firms that are operating in countries with majority share ownership and asset concentration, suggesting that the nature of managerial decisions made in emerging economies require empirical examination.

This paper has three aims. The first is to conduct an event study of capital investment announcements to measure whether the investment decisions of South African companies are consistent with the goal of maximizing shareholder wealth. The second aim is motivated by a unique attribute of the South African economy. In addition to being classified as an emerging market, the South African economy is also dominated by large groups of holding companies, which are highly diversified (Castle and Kantor, 2000). Many of these conglomerates are managed by founding families and their descendents (Kantor, 2001). It has been reported

that many local companies stray from their core activities into diversifications that lack any business logic (Gerson, 1992). In light of these important characteristics of the South African business structure, this paper also examines whether the wealth effects of capital expenditure announcements differ between diversified firms and focused firms. The third aim of this paper is to investigate whether the market reaction to capital expenditure announcements varies with the category of projects being announced, as well as other characteristics of the investment and the company making the announcement.

## 2. LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESES

Past research has generally found that the valuation effects of announcements of corporate capital investment decisions produce positive excess share returns. McConnell and Muscarella (1985) investigated announced changes in the level of capital expenditures by US firms, and concluded that the announcement of an increase (decrease) in capital expenditure from the previous year resulted in positive (negative) announcement period returns. Wherever possible their data was categorized by the intended use of funds, but specific individual projects were excluded from the sample. Since different types of projects carry different signals about the future direction of the company, McConnell and Muscarella (1985) speculated that information about the future investment opportunities was an important factor in determining the market response to announcements of capital expenditure plans.

McConnell and Muscarella (1985) examined changes in capital expenditure, but investment decisions may involve the commitment of resources to a specific project or activity. In addition, different types of investment activity may have different implications for current and future earnings. For example, Chan, Martin and Kensinger (1990) found significant positive abnormal returns for a sample of 95 announcements of increased R&D expenditures by US companies. However, increased R&D expenditure was found to have a negative effect on share prices for announcements made by low technology firms. This evidence indicates that the market was able to distinguish between good and bad investment prospects and, on average, only rewards firms that make good investments (Chan, Gau and Wang (1995)).

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Investments in projects that reduce operating costs may also provide signals regarding the firm's investment opportunities. For example, Chan *et al.* (1995) identified positive abnormal returns earned by US firms announcing headquarters relocation decisions but negative abnormal returns for plant relocation announcements. However, where the relocation was motivated by business expansion or cost savings the market reacted positively whilst the market reacted negatively to decisions which would result in reduced capacity.

One way to enter new markets, reduce production costs or share R&D costs is to form joint ventures. McConnell and Nantell (1985) found that announcements of domestic joint ventures resulted in significant positive announcement day returns. McConnell and Nantell speculated that the similarities between the market reactions to mergers and joint ventures might indicate an inter-corporate synergy effect as the source of the gains to shareholders, although they did not test this proposition. On the other hand, Chung, Koford, and Lee (1993) found announcements of international joint ventures by US firms had a negative effect on US firm values. Possible explanations for the negative wealth effects are fears regarding victimisation by hostile partners, diffusion of high-technologies and management conflicts (Chung *et al.*, 1993).

Burton, Lonie and Power (1999) examined UK announcements of joint ventures classified as immediately cash-generating and non-immediately cash-generating investments. They found significant positive returns for joint ventures but not for either of the other single company categories. Their cross-sectional regressions examined whether a dummy variable for the availability of prior funding, announcement size, company size and market-to-book ratio were significant determinants of market reaction to individual capital expenditure projects. The only significant variable was the announcement size for immediately cash-generating investments. Burton *et al.* (1999) do not fully explore the cause of the higher abnormal returns associated with joint ventures than with individual firm investment announcements, but suggest that it may be associated with synergistic gains, possibly associated with reduction in costs, spreading of risks, and the cross-fertilization of ideas.

Johnson and Houston (2000) have found that joint ventures are being used for risky and complex transactions and for spreading costs. Frohls, Keown, McNabb and Martin (1998) similarly found joint ventures to be particularly beneficial when entering emerging markets, which may be riskier (for US companies) than transactions in other industrialized markets. Analysing

strategic alliances rather than joint ventures, Chan, Kensinger, Keown and Martin (1997) found higher wealth creation where there was a transfer or pooling of technical knowledge.

Woolridge and Snow (1990) investigated the market reaction to various types of capital expenditures. They found that market reactions to strategic investment announcements by US firms, which were generally significant and positive, were more consistent with shareholder wealth maximization than either "short-termism" imposed by institutional shareholders or their no reaction "rational expectations" hypothesis. Four types of capital investment announcements were analysed and significant abnormal returns were identified for each type: joint ventures (two-day cumulative market-adjusted return of 0,80%); R&D (1,13%); capital expenditure (0,36%), and product/ market diversification (0,69%). The results of the Woolridge and Snow (1990) study suggest that not only are abnormal returns likely to be positive (0,64% overall), but that there may be identifiable differences in the level of abnormal returns for different types of capital expenditure announcements.

Woolridge and Snow (1990) also examined whether project size (relative to the size of the firm) and project duration were important determinants of abnormal returns. They found the market reaction to be identical for small and large projects, although they noted that the sub-sample for which classification was possible was mainly comprised of plant and equipment expenditures. The market reaction to projects of short-term (less than three years) or long-term duration was also virtually identical, thus rejecting the hypothesis that the market discouraged firms from making long-term investments.

From a close analysis of the literature, it was decided to test whether the shareholder wealth maximization or the rational expectations hypothesis is applicable to South African companies making capital expenditure announcements. The following hypothesis was tested:

H<sub>1</sub>: In a competitive market funds for capital expenditure will be allocated to projects that enhance the firm's long-term prospects. Therefore, the stock market will react positively to corporate announcements of capital expenditure decisions to the extent that it enhances long-term profitability and maximizes firm value.

As suggested by Wernfelt and Montgomery (1988) and Lang and Stulz (1994), focused firms tend to have better investment opportunities than highly diversified firms. Since firms with better investment opportunities are more likely to invest in positive net present value (NPV) projects (Lang, Stulz, and Walking (1991)), capital investments by focused firms will be more worthwhile

than those by diversified companies. Diversified firms have poorer investment opportunities and tend to invest more in negative NPV projects, because of a cross-subsidization problem (Scharfstein and Stein (2000)), a relatively greater propensity to engage in empire building (Jensen, 1986) power grabbing (Rajan, Servaes, and Zingales (2000)), or weaker management incentives to maximize shareholder value (Denis, Denis and Sarin (1997)). Therefore capital investments by diversified companies have a greater potential to be wasteful. To test the expected differential market reaction to capital expenditure announcements by focused and diversified companies, the following hypothesis is tested:

H<sub>2</sub>: The share market will react more favourably to capital expenditure announcements by focused companies because of investor perception that they are more likely to result in shareholder wealth maximization than those by diversified companies which are perceived to be associated with sub-optimal allocation of investment funds.

### 3. CLASSIFICATION OF CAPITAL EXPENDITURE DECISIONS

The financial literature provides various systems for classifying capital investment decisions for project appraisal (Kester, 1984). Since we attempt to appraise projects in this paper, categories of capital expenditure decisions analysed were selected from the classification developed by Kester.

By classifying investments according to the primary activity or function, it is possible to examine the underlying value creating characteristics. These characteristics are indicative of the level of follow-on investment opportunities, which are provided by a capital investment decision. Kester (1984) argued that the firm must have an appropriate mix of two types of investment as part of its investment strategy – “compound growth options” and “simple growth options”. The “compound growth options” category includes those investments such as R&D and product/market diversification, which are expected to *create* growth options and generate revenue in the longer term (Dixit and Pindyck, 1995). The investments included in the “simple growth options” category, such as new plant investments or cost reduction investments, involve a decision to *extend* growth options (Kester, 1984). We aggregate the R&D and product/market categories to provide the “create” category and the asset expenditure and cost reduction categories to provide the “extend” category.

Following these guidelines, the investment categories used here are as follows:

- Cost reduction projects involve the commitment of resources to programmes in which the costs of operating the current line of business are reduced. These are recognised as being low risk projects (Merrett and Sykes, 1973). However, such projects would not be expected to create follow-on investment opportunities.
- Asset expenditure projects involve expenditure on plant, equipment and machinery for expansion or maintenance of the current line of business. The level of risk associated with replacement projects is similar to that of current production while investments that require an increased market share would have a level of risk greater than that of current production. Asset expenditure might be considered as the extension of a “growth option” that was previously created.
- Product/market diversification projects involve the commitment of resources in an attempt to increase market share in new markets or in new product areas. This category includes new product launches and the marketing of current products in new geographical areas. Diversification into new markets and new product areas is likely to have relatively high level of risk.
- Research and development (R&D) projects involve the commitment of resources to work directed towards the innovation, introduction and improvement of products and processes. Such projects involve very little certainty about where and when the returns will occur and consequently a large proportion of the value of an R&D project is determined by the ability to defer the follow-on investment and the exclusiveness of rights to research discoveries.

The classification of a project may depend on the corporate environment in which it is undertaken. A company that undertakes a cost reduction project or expands within its existing line of business is extending existing investment. The opportunity to invest in this way will have been apparent to investors and will have been included in the firm’s market value. Cost reduction and asset expenditure projects thus involve the maintenance and *extension* of current investment opportunities. If a company enters into a new line of business, we suggest that this will be less likely to have been anticipated by the market. Entry into a new line will carry with it options to grow and expand the new operation. Such investments may thus *create* follow-on investment opportunities. Our categorization of investment projects therefore depends partly on the character of the investment project considered in isolation, but also to

some extent, on the relationship between the project and the existing operations of the firm.

#### 4. SAMPLE SELECTION AND RESEARCH METHODOLOGY

##### 4.1 Sample selection

The sample consists of all capital expenditure announcements made by companies listed on the JSE during the period 1 January 1995 to 31 December 2004. To be included in the final sample, the announcements had to meet the following criteria:

1. The announcing company must have its daily share price data available for the full 120-day estimation period and also the 21-day period covering the event study.
2. Announcements must contain definite plans rather than conjectures about the future investments. Furthermore, announcements must include information about the approximate size and the actual use of funds.
3. The company must not have any other announcement during the 10 days before and 10 days after the capital expenditure announcement.

A total of 378 capital expenditure announcements met the criteria and were included in the final sample. The data related to the announcements were obtained from *Reuters News*, which provided selected news services stories from *Business Day* and other financial publications. This publication was used to identify news related to the capital expenditure announcements during the period of the investigation. The announcements were confirmed from *Business Day* and the database of JSE SENS, which commenced providing company specific announcements by listed companies from March 1998. The data required from the financial statements of companies included in the sample and the JSE All Share Index were obtained from the McGregor's BFANet database. All financial data required to perform the OLS regression were also obtained from these sources.

It has been shown that shareholders prefer the concept of 'pure plays' and single-minded focus and that the market reward companies that meet these criteria (Gadad and Thomas, 2005). Chen (2006) showed that for companies listed on the NYSE, the market reaction to capital expenditure announcements are more favourable for focused companies than for diversified companies. Therefore, it was decided to test if a similar trend exists for companies listed on the JSE. The methodology used by Chen (2006: 343) to measure company focus is used

for this South African study. The basic concept is that the more concentrated the firm's sales/assets within a few (many) of its business segments the more focused (diversified) are its operations.

The financial statements of all companies associated with capital expenditure announcements were investigated to determine the number of clearly defined industries and segments in which they operated. Companies operating in a single segment were classified as focused companies and those operating in multiple segments were classified as diversified companies. The final sample comprises 378 capital expenditure announcements: 123 by focused companies and 255 by diversified companies.

##### 4.2 Research methodology

The event study methodology developed by Brown and Warner (1985) was used to determine the excess returns around the announcement day. An estimation period from day -180 to day -11 is used to calculate the parameters,  $A_i$  and  $B_i$  of the following market model:

$$R_{it} = A_i + B_i R_{mt} + E_{it} \quad \dots (1)$$

Where  $R_{it}$  is the rate of return of the capital investment company  $i$  on day  $t$ .  $R_{mt}$  is the rate of return on the market portfolio represented by the JSE All Share Index on day  $t$ .  $B_i$  is the estimated market risk of share  $i$ .  $A_i$  is the estimated intercept.  $E_{it}$  is the error term on day  $t$ ;  $E(E_{it}) = 0$ . The estimated parameters,  $B_i$  and  $A_i$  are used to calculate the excess returns,  $E_{it}$  from day -10 to day 10 for each share as follows:

$$E_{it} = R_{it} - A_i - B_i R_{mt} \quad \dots (2)$$

To test the statistical significance of these excess returns, we calculate the following statistics:

$$AR_t = \frac{1}{n} \sum_{i=1}^n E_{it} \quad \dots (3)$$

$$CAR = \sum_{t=-D}^D AR_t \quad \dots (4)$$

where:

$AR_t$  is the average excess return of all capital expenditure announcing companies on a given day  $t$ ;  $CAR$  is the cumulative average excess returns from day - $D$  to day  $D$ , and  $N$  is the number of companies.

The method employed by Dimson (1979) and refined by Cohen, Hawawini, Maier, Schwartz and Whitcomb

(1983) to overcome the problem of beta underestimation caused by serial correlation was used when calculating the beta values for companies in the sample. Bradfield and Barr (1989) conducted a sensitivity study of beta values of JSE listed companies. They showed that there is a statistical significance for two lagged terms, the contemporaneous term and one leading term. The Bradfield and Barr procedure was therefore used to calculate the beta values for companies identified as events.

## 5. EMPIRICAL RESULTS

### 5.1 Shareholder reaction to capital expenditure announcements

Panel A of Table 1 reports the abnormal returns surrounding the 378 capital expenditure announcements made by JSE listed companies during the 1995-2004 period. The full sample was stratified to enable the market reaction of focused and diversified companies to be analysed separately. The investigation period was 21 days (-10 to 10). The market reaction is random in nature and becomes systematically positive only in the four days before the announcement, the announcement day itself, and the day after the announcement. Therefore, the results are reported only for the 6-day period (-4 to 1).

For the full sample, on average, the market reaction is positive and significant three days prior to, and the announcement day itself. The abnormal returns for days -3, -2 and -1 are 0,21%, 0,37% and 0,27% respectively. The announcement day return is 0,22%. These findings indicate that although public announcements of capital expenditure decisions produced statistically significant positive abnormal returns, the share value change associated with insider information is greater than the public information released on announcement day.

Panel A also reports the share market reaction to capital expenditure announcements by companies classified as focused and diversified companies. For the focused companies the abnormal returns are positive and statistically significant for the pre-announcement period (days -3, -2 and -1) amounting to 0,25%, 0,65% and 0,42% respectively. Furthermore, the announcement and post-announcement returns (days 0 and 1) are 0,31% and 0,24% respectively and are also significant. For diversified companies statistically significant positive returns are observed only in the pre-announcement

period (days -2 and -1) amounting to 0,26% and 0,20% respectively.

Panel B of Table 1 presents cumulative abnormal returns (CAR) for the window period of (-4,1) for the full sample and also the focused and diversified companies. The total wealth effects of capital expenditure decisions by the full sample of 378 announcements is 1,35% and is statistically significant at the 5% level. This finding is consistent with the view that the market does react to company-specific capital expenditure announcements and also supports hypothesis 1 which asserts that the market reaction is associated with the prospects for enhancing long-term profitability and maximizing firm value. The results are also consistent with similar findings associated with US and non-US firms (Esther *et al.*, 2003).

Panel B of Table 1 shows that the CAR value for focused company is 1,99% and is statistically significant at the 1% level. The corresponding CAR value for diversified companies is 0,98% and is statistically significant at the 10% level. The mean difference test of CAR between the two portfolios is statistically significant at the 5% level (with a t-statistic of 1,72). We observe that the wealth effects of capital expenditure decisions by focused companies are more favourably rated than those by diversified companies. The finding of this study also supports hypothesis 2, which asserts that focused companies are perceived to be more likely to emphasize the maximization of shareholder wealth than diversified companies. The findings of this investigation are also consistent with a recent study by Ferris, Kim and Kitsabunnarat (2003) who found that diversified companies experience loss of shareholder wealth because of the tendency of managers to over-invest and deviate from the wealth maximization principle.

### 5.2 Analysis of announcement returns by investment class

The abnormal return of the overall dataset for each investment class is presented in Table 2. The overall mean abnormal return of 1,35% is slightly higher than that reported by previous overseas studies. The median is lower (0,41%), but still highly significant. The null hypothesis that abnormal returns are zero when capital investment news is announced can be rejected for the sample as a whole. For all categories of investment except cost reduction projects, the median abnormal return is significantly different to zero at the 1% confidence level.

**Table 1: Abnormal returns (AR) and cumulative abnormal returns (CAR) around announcement date of capital expenditures**

Panel A: Abnormal Returns

Full Sample(n=378)			Focused Companies n=123		Diversified Companies(n=255)	
AR (%)	t-value		AR (%)	t-value	AR (%)	t-value
-4	0,0859	0,74	0,1241	1,12	0,0675	0,61
-3	0,2121	1,70*	0,2456	2,13*	0,1163	1,07
-2	0,3676	3,13***	0,6472	3,59***	0,2614	2,35**
-1	0,2734	2,40**	0,4240	3,07***	0,2008	1,72*
0	0,2217	1,79*	0,3126	2,98***	0,1778	1,43
1	0,1852	1,51	0,2405	1,98*	0,1585	1,48

Panel B: Cumulative Abnormal Returns CAR=(-4,1)

Full Sample		Focused Companies		Diversified Companies	
CAR (%)	t-value	CAR (%)	t-value	CAR (%)	t-value
1,3459	2,46**	1,9940 <sup>a</sup>	3,53***	0,9823	1,94*

\* Significant at the 10% level

\*\* Significant at the 5% level

\*\*\* Significant at the 1% level

<sup>a</sup> The mean difference test of focused companies and diversified companies portfolios is statistically significant at the 5% level (t-statistic of 1,72)

**Table 2: Abnormal Returns for different classes of capital expenditure announcements**

Class	Cases	Mean	Median	Standard Deviation
Full Sample	378	0,0135**	0,0041**	0,0462
Create Future Growth <sup>a</sup>	136	0,0331**	0,0063**	0,0535
Extend Existing Growth <sup>b</sup>	242	0,0035	0,0019*	0,0374
Research and Development	23	0,0369**	0,0064**	0,0630
Product/Market Diversification	113	0,0323**	0,0082**	0,0589
Asset Expenditure	210	0,0046	0,0021**	0,0364
Cost Reduction	32	-0,0037	0,0009	0,0297
Joint Ventures <sup>c</sup>	28	0,0192**	0,0035**	0,0548

\* Significant at the 10% level.

\*\* Significant at the 5% level.

<sup>a</sup> Create category comprises the R and D and Product/Market Diversification categories combined.

<sup>b</sup> Extend category is a combination of Asset Expenditure and Cost Reduction categories.

<sup>c</sup> The Joint Ventures category consists of those projects (of all types) from the whole sample, which were undertaken with one or more partners.

Dixit and Pindyck (1995) have suggested that managers should consider the implications of capital investments for the investment opportunities of the firm when making decisions regarding the financing of capital projects. If the market understands these implications, it would be expected that investments, which “create” growth options would be valued more highly than investments that did not. The mean abnormal return for the set of announcements, which would be expected to “create” future growth options was 3,31% compared with 0,35% for investments, which “extend” existing growth options. Both the mean and median abnormal returns were significant for the “create” investments while only the median value was significant for the set of “extend” investments. The market-adjusted returns for the investments, which “create” growth options are significantly greater than the market-adjusted returns for investments which “extend” investments options,

according to a Mann-Whitney test and an independent samples t-test at the 5% level.

The larger standard deviation for the set of investments that create investment opportunities is indicative of larger information flow. The difference in the variation between the categories was tested and found to be significant at the 1% level using an F-test. These findings are consistent with the hypothesis that the market valuation of capital investment is to some extent determined by the value of follow-on investment opportunities. Furthermore, the commonly expressed hypothesis that the capital market is myopic (Woolridge and Snow, 1990) and prefers short-term returns can be questioned in light of these results.

Various studies have provided evidence of differential share price performance for different types of capital investments. For example Chan *et al.* (1990) found a

two-day cumulative abnormal of 1,38% for a sample of R&D announcements. Chaney and Devinney (1992) found a three-day excess return of 0,6% for new product innovations and Woolridge and Snow (1990) report two-day cumulative returns of 1,13% for R&D announcements, a 0,69% for product or market diversification and a 0,36% for capital expenditures. The mean return for each of the categories obtained in this paper are consistent with the previous studies and support the hypothesis that investments that create investment opportunities result in higher mean abnormal returns than investments that extend growth options. The category of R&D exhibited the largest mean abnormal return (3,69%) followed by product/market diversification (3,23%) and asset expenditure (0,46%). The mean abnormal return for cost reduction projects was -0,37%. The category of asset expenditures has a low mean and standard deviation, which perhaps indicates that the information has already been impounded into the share price as part of its investment opportunities or that such capital expenditures are long anticipated as part of the ongoing maintenance of existing production.

Of the 378 investments announced, 28 were undertaken as joint ventures. The mean abnormal return for the set of joint ventures (1,92%) is higher than that for the sample as a whole (1,35%). This is consistent with the findings of Burton *et al.* (1999) for the UK and Woolridge and Snow (1990) for the US, who also found the abnormal returns from investment announcements to be higher for joint ventures than for the sample as a whole.

### 5.3 Cross-sectional analysis

It has been established that there is a positive and significant abnormal return when capital investments are announced and also that the abnormal returns are significantly higher for companies classified as focused when compared to those who are regarded as diversified. We have also seen that certain categories of investment decisions have higher average abnormal returns. In this section we use regression analysis to explain the magnitude and sign of abnormal returns. Using cross-sectional regressions we can examine the relationship between abnormal returns for the 6-day period (-4 to 1) and a number of contingent variables. The regression analysis was adopted from Burton *et al.* (1999) and was conducted according to equation (5):

$$\varepsilon_i = \alpha + \beta_1 \log s + \beta_2 jv + \beta_3 cf + \beta_4 cp + \beta_5 ps + \beta_6 D_1 + \beta_7 D_2 + \beta_8 D_3 + e \quad \dots (5)$$

where:

$\varepsilon_i$  = abnormal return on share  $i$ ,

- $\alpha$  = constant,
- $\log s$  = log of firm size,
- $jv$  = dummy variable for joint venture projects,
- $cf$  = company focus index,
- $cp$  = company performance variable
- $ps$  = project size
- $D_1, D_2, D_3$  = dummy variables representing each project type, where  $D_1$  refers to R&D projects,  $D_2$  to product/market diversification projects, and  $D_3$  to cost reduction projects (asset expenditure projects are captured by the intercept  $\alpha$ ),
- $e$  = error term,
- $\beta$  = regression coefficients.

We include relative project size because we hypothesise that projects which are large in relation to the size of the company will have a greater impact on the share price. We include firm size because large companies may use different methods to communicate with the market than small ones (Holland, (1997)). Formal announcements may be less significant for larger companies. We use company performance because rising earnings are likely to indicate the presence of investment opportunities. The reactions to investment announcement might be stronger if these opportunities are already perceived by the market. Finally, we include the level of company focus as an independent variable. For any given set of investment cash flows, there is an expected positive relationship between company focus and value created for shareholders.

The variable for recent company performance ( $cp$ ) was taken as the percentage change in earnings per share between the last reported earnings per share and the forecast earnings per share in the current year. A similar method of examining the influence of recent performance was used by Chan *et al.* (1990). The relative project size ( $ps$ ) was calculated as the size of the project divided by the market capitalisation of the company. The size of the project was taken to be the figure included in the announcement.

The regression analysis is first undertaken for the dataset as a whole, with dummy variables for the various project categories. Secondly, the analysis is undertaken for each project category separately. Thirdly, the independent variables were also tested against the

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abnormal returns for the category of joint ventures. Table 3 shows the output from the regression analysis. It is not necessary or practical to include all combinations of dependent and independent variables in the reported findings of this paper. The models were selected on the basis of the significance of correlations and on the basis of the results of prior regressions. There was no significant relationship between the independent variables and the abnormal returns for the category of cost reduction projects.

The principal finding that emerges from an inspection of Table 3 is that company focus has a significant impact on abnormal returns for the dataset as a whole and also, when regressed, on the abnormal returns for the

research and development, product/market diversification, and joint venture categories. The adjusted  $R^2$  for the model of product/market diversification and the joint venture categories explain 82% and 75% respectively of the variations in abnormal returns. In particular, the results indicate that investors regard diversification by focused companies to be highly profitable as opposed to the scepticism of diversification by companies deemed not to be focused on their core operations. These results further confirm hypothesis 2, which implies that the market responds more favourably to capital expenditure announcements by focused firms than for diversified firms.

**Table 3<sup>a</sup> :Cross-Sectional regressions of abnormal returns**

Model	Project	Constant	log s	jv	cf	cp	ps	D <sub>1</sub>	D <sub>2</sub>	Adjusted R <sup>2</sup>	F	N
1	Total	-0,0924**	-0,0089**		0,4342*					0,6925	78,1531**	362
2	Total	0,0194					0,3917*			0,2312	28,3142**	211
3	Total	0,0315**	-0,0051**					0,0182**	0,0170**	0,0843	12,5793**	359
4	Total	0,0392**	-0,0073**	0,0219**						0,0873	13,8347**	370
5	rd	0,0194*				0,0186**				0,3214	43,2716**	21
6	rd	0,0286**			0,1542*					0,4936	53,2365**	22
7	pm	0,0712**	-0,0034*		0,1475*					0,8240	91,3005**	98
8	pm	0,0334**					0,1092**			0,6174	74,3135**	30
9	ae	0,0295**	-0,0029*				-0,0031*			0,0531	8,0418**	201
10	jv	-0,0027			0,1293**					0,7532	82,1239**	14
11	jv	0,0631**	-0,0022*			0,0061*				0,1027	12,9421**	25

\* denotes two-tailed significance of a t-test at the 5% level

\*\* denotes two-tailed significance of a t-test at the 1% level

<sup>a</sup> Table 3 represents results obtained from regressing event day abnormal returns on the log of firm size (logs), a dummy variable if the project is a joint venture (jv), company focus (cf), recent company performance proxy (cp), relative project size (ps) and dummy variables for research and development (D<sub>1</sub>) and product /market diversification (D<sub>2</sub>). The dependant variable is noted as total (whole dataset), rd (research and development), pm (product/market diversification), ae (asset expenditure) or jv (joint ventures) alongside the model number.

The dummy variables for project categories used in model 3 are significant at the 1% confidence level. Only R&D ( $D_1$ ) and product/market diversification ( $D_2$ ) are included as dummy variables in the table since the cost reduction dummy variable is insignificant in all cases. This suggests that the type of project announced is an important determinant of abnormal returns and is confirmed by the evidence already cited in Table 2, which has shown that the reaction is different depending on the type of project.

Model 4 comprises all the observations in the dataset and provides evidence that joint ventures are more positively received in the financial markets than single ventures, consistent with prior evidence by Burton *et al.* (1999). The coefficient for the joint ventures dummy variable is significant at the 1% level and the model predicts that the abnormal return is 2,19% higher for joint ventures than for single ventures. Further research might consider the specific characteristics of these projects which make them more attractive to financial markets.

The effect of the size of the firm on security returns has been extensively studied (Fama and French, 1996). In the presence of the size effect, event studies that focus on smaller firms are likely to register positive abnormal returns relative to the average market performance, even in the absence of an event and the opposite results would hold for larger firms (Strong, 1992). Furthermore, the amount of information disclosed by a company to market participants and the extent to which a company is followed by investment analysts have been found to be related to firm size (Al-Qudah, 1991).

The coefficient for the log of company size is negative in all the models in which it is included. There was no model for either cost reduction projects or for R&D projects where the log of company size was found to be significant. Company size was, however, found to be significant in models of the dataset as a whole, product/market diversification, and asset expenditures, as well as for joint ventures. It is also notable that there is no model in which project size and company size were both significant. It would appear that that in cases where project size is announced, it dominates other forms of information about the project.

The log of the market capitalisation is significant at the 1% level in models 1, 3 and 4 and at the 5% level in models 7, 9 and 11, although the coefficients are small. This finding may be attributed to the size effect although the small impact of company size suggests that the size effect is not a major factor driving the results for the dataset as a whole. Capital investment announcements may also be more important for smaller firms and represent a more significant addition to the company's

stock of investment opportunities. Hence, it might be expected that markets would react more positively to such an announcement by a small firm than by a larger firm.

The proxy variable for company performance gives a significant coefficient at the 1% level in model 5 of R&D projects and at the 5% level in model 11 of joint ventures. In both cases the coefficients are positive and notably in model 5, a simple regression of abnormal returns for R&D projects against corporate performance gives an  $R^2$  of 32%. There would appear to be some evidence here that recent earnings performance is an indicator of how the market will react to R&D announcements.

## 6. SUMMARY AND CONCLUSIONS

This paper has examined 378 cases of capital expenditure decisions made by South African companies over the 1995-2004 period and its impact on shareholder wealth. Overall, we find significant positive excess returns surrounding capital spending announcements. We also observe that information related to the capital expenditure decisions are impounded in the share prices three days prior to the public announcement. Further analysis revealed that the market responds significantly and positively to capital announcements by focused firms, whereas there is a much weaker response to announcements by diversified companies. This suggests that investors perceive focused firms to make investment decisions that are consistent with the maximization of shareholder wealth, whereas diversified firms are perceived to have poorer investment opportunities and also to exhibit behaviour that deviate from the wealth maximization principle.

The relative magnitudes of the abnormal returns for the investment classes analysed in this paper indicate that the market reaction to capital investment announcements may be driven by the underlying potential for creating follow-on investment opportunities. Classes of investments, which are expected to "create new growth options" lead, on average, to higher market-adjusted returns (3,31%) than investment in projects which "extend existing growth options" (0,35%). The conjecture that investment opportunities are an important determinant of market reactions to investment decisions is supported by evidence from cross-sectional regressions. The findings of this analysis suggest that abnormal returns are positively related to relative project size for projects that create new investment opportunities and negatively related to projects that extend existing growth options.

The cross-sectional analysis identified a number of significant influences on the market reaction to investment announcements. The company size variable was found to be negatively related to abnormal returns and company performance was found to be positively related to abnormal returns in a number of models (see Table 3). The company focus variable was found to generate significantly positive abnormal returns for project characteristics that create new growth opportunities i.e., R&D, product/market diversification, and joint ventures.

The evidence presented here is more supportive of a wide range of market responses to different categories of capital investments. It seems credible that the market attempts to distinguish between good and poor investment decisions as suggested by Chen *et al.* (1995) and also capital investments made by focused and diversified companies. The poor market response to capital investments by diversified may well be attributed to the shareholder preference for “pure plays” and single-minded focus and rewarding companies that meet these criteria (Doukas and Kan, 2004). This suggests that diversified companies should review their bloated organizational structure in order to derive the maximum benefits from their capital investments. A more focused approach to company investments is also likely to reduce the “diversification discount” applicable to highly diversified companies on the JSE reported by Bhana (2006).

Capital investments by highly diversified companies result in sub-optimal resource allocation and non-maximization of shareholder wealth. These companies will become increasingly uncompetitive in a world driven by global trade. Local diversified companies should follow the example of Anglo American, South African Breweries and other former conglomerates that have become focused and world class companies in the post-1994 period. It is recommended that diversified companies seeking to become focused companies should redirect their capital investments to projects that create future growth opportunities rather than merely extending existing investment opportunities.

An important finding is that the share price change associated with insider information is greater than the public information revealed at the announcement date. This paper has not investigated whether trading by company insiders plays any role in influencing the shareholder wealth related to capital expenditure decisions. John and Mishra (1990) have shown that company insiders share their superior knowledge of investment opportunities through a combination of revising their investment holdings and announcing changes in capital expenditures. Therefore, a proper

interpretation of capital investment announcements is conditional on a concurrent investigation of insider trading in the company's shares. It will be interesting for future researchers to investigate whether insider trading plays any role in the share market reaction to capital expenditure announcements.

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