Identifying Potential Acquisition Targets Using Accounting and Financial Data

by Valuation & Research Specialists (VRS)

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ABSTRACT

The purpose of this paper is to derive and test the significance of accounting and financial items in explaining the possibility of a firm becoming a target .The sample is drawn from U.K. acquisitions during the period 1987-2002 and the objective is to estimate statistical models for prediction of acquisition targets. The applied model is a binary-logit model, with variables expressed on firm level. The sample covers a broad cross section of firms of different sizes and in different industries. The results indicate that the targets are poor performance companies, with high leverage but high growth prospects. The last two years' accounting and financial figures, the percentage change between them, in combination with the P/E ratio are significant in estimating the financial status of the company and the possibility of a firm been taken over. This study's results could be helpful for companies seeking to acquire other firms, providing a guide regarding the accounting and financial position of the possible targets.

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Abstract

The purpose of this paper is to derive and test the significance of accounting and financial items in explaining the possibility of a firm becoming a target. The sample is drawn from U.K. acquisitions during the period 1987-2002 and the objective is to estimate statistical models for prediction of acquisition targets. The applied model is a binary-logit model, with variables expressed on firm level. The sample covers a broad cross section of firms of different sizes and in different industries. The results indicate that the targets are poor performance companies, with high leverage but high growth prospects. The last two years' accounting and financial figures, the percentage change between them, in combination with the P/E ratio are significant in estimating the financial status of the company and the possibility of a firm been taken over. This study's results could be helpful for companies seeking to acquire other firms, providing a guide regarding the accounting and financial position of the possible targets.

1. Introduction

Throughout the financial history, companies all over the world have discovered that value and synergies could be created if they combine their facilities, departments and procedures with other companies in the same or different sectors and industries. The motives that lead companies to mergers and acquisitions are numerous and each of them is based on a different philosophy. The pattern that the majority of mergers and acquisitions follow, through the years, depends strongly on the economic situation of the relevant markets, on the stage of each country's economy and the general expectations and beliefs that people have about future conditions. During the period 1995-1999, there has been a significant boom in M&A activity, but during the last years a general decline has been presented in the total number of mergers around the world.

The motives for mergers or acquisitions can be different for each case and depending on the eventual goal; the respective criteria will be set for the identification of the potential target. The topic of this dissertation refers to acquisitions and specifically how to identify potential targets for acquisitions. In general, the motives behind an acquisition are different from those of a merger while the identification of a target for an acquisition could be more difficult and complicated. In mergers, the companies usually look for firms of similar size, in the same industry and what is actually created is a new company, which is the combination of the previous two independent entities. On the other hand, in acquisitions, the target is usually a smaller company compared to the bidder. A company can acquire another company in the same sector or not (horizontal/vertical integration) or across different countries and industries (international conglomerate acquisitions). Another distinction can be made based on the way that a company acquires another, leading to friendly or hostile take-overs. Hostile take-overs are characterized by the opposition of the target's board while non-hostile take-overs are those which have the approval of the target's board.

For each type of expansion and acquisition, there are different motives and criteria based on which, each company will choose its potential target.

2. Objective

This study examines the significance of the last two years' accounting and financial items reported before the acquisition and the percentage change between the two years in explaining and predicting the probability of a firm becoming a target. In addition, these items are examined as to whether they can be used by firms as a "guide" towards the identification of potential targets. The sample of the study consists of "dead" (taken-over) companies in the U.K., belonging in different industries and of different sizes which have been collected over the last fourteen years. These companies have been matched by industry and size with "live" companies that existed during the same period.

The accounting and financial items used as independent variables in the regression, are ratios such as Return on Equity, Return on Capital Employed, Working Capital Ratio, Capital Gearing, Price to Earnings ratio or accounting figures reported in the Balance Sheet such as Fixed Assets, Total Capital Employed, Total Share Capital and Reserves and others. Most of the items, except from the P/E ratio and Pre-Tax profit, do not include earnings indicators, as earnings can be easily manipulated and therefore only items reported in their Balance Sheet and the return of the capital invested are taken into account.

The study aims to identify which accounting and financial items such as the Return on Capital Employed, the change in the Total Fixed Assets and the P/E ratio, amongst others, are significant in indicating when a company is threatened to be taken over, or whether a company can identify its potential targets based on some of these indicators. The poor financial performance could be considered as an indicator but in order for a target to be the right choice, more factors must be evident.

This study mainly includes accounting indicators which could detect the financial situation of the company but it has also taken into account market ratios (P/E) and percentage growth indicators such as the annual percentage change of Balance Sheet items which could capture the historical growth and prospects of the company.

3. Literature Review

The methodology used in this study is based on that of previous studies which examine the effect of selected variables on the possibility of a company being taken over. Most of the papers apply the same methodology but use different variables to explain and predict the probability of a firm becoming a target. The most relevant previous studies are presented below.

The paper by Charlie Weir and David Laing (2001) analyses the corporate governance mechanisms of a sample of companies which have been acquired through friendly take-overs, matching the control sample with companies that have not been acquired. It also uses a holdout sample to assess the model's ability to correctly classify take-over candidates. The results show that the targets were poor performers while there were significant governance differences between the friendly take-over targets and the control sample. The inclusion of corporate governance characteristics enables the model to distinguish target from non-target companies when predicting the acquisition probability.

The sample consists of 308 UK quoted companies where the 154 were acquired under friendly terms during 1997 and 1998 and the remaining154 were non-acquired companies matched by year, industry and size (as measured by turnover). Matched samples have also been used by Morck et al (1988), Song and Walkling (1993) and Agrawal and Joffe (2001). The take-over targets were selected based on the fact that they had to be non-financial companies listed on the London Stock Exchange (LSE) while their financial statements were quoted in sterling. The financial services companies have been excluded from the study as they are subject to a regulatory framework which could affect the governance-performance relationship.

The methodology applied in the study is a Binary-logit model which uses as a dependent variable a series of 1 and 0. The series takes the value of 1 for a firm taken over and 0 for a non-acquired company. The independent variables used are the percentage of non-executive directors on the board, the percentage of

independent directors on the board, the percentage of directors on the board that are non-executive and have a short tenure of service. In addition, two dummy variables were used, one for duality, which takes the value of 1 if one director holds jointly the positions of chairman and chief executive in a company and 0 if not and one for the age, which takes the value of 1, if the firm has been quoted on the LSE for less than 5 years and 0 if it is longer. Furthermore, the percentage of ownership held by the chief executive officer was taken into account as well as the QRATIO. The QRATIO is defined as market capitalization divided by total assets. This ratio is used as a proxy for performance measurement as firms with low Q ratios are viewed less favorably by the market and they are eventually regarded as potentially poor performers. Finally, CAPEX ratio was also included which is the net capital expenditure divided by total assets, converted into a percentage.

The results of the study indicate that the average proportion of hostile mergers over the period examined was 9.6% while the non-hostile mergers accounted for the 90.4%. The evidence showed that the market regarded the acquired companies as poor performers because they have significantly lower Q ratios vs. the non-acquired firms. However, there was no difference in the accounting performance measurement when ROA was taken into account. In addition, the study showed that firms subject to a non-hostile acquisition were more likely to be younger than non-acquired firms of the same size. Moreover, the non-hostile targets in the majority were five years old or less while there was no evidence that acquired firms undertook lower capital expenditure than the non-acquired firms.

Based on the aforementioned study, the target firms are significantly smaller in terms of market capitalization, which provides further evidence that for similar turnover figures the market views targets less favorably. On average, there is no difference in the board size, with the targets and the control group's boards numbering seven directors. Acquired firms have a higher percentage of non-executive directors and independent directors, but the difference is not significant.

The results, therefore, indicate that target firms were poorer performers, younger, had relatively more non-executive directors with short tenure and had higher institutional shareholdings than non-targets. The initial results showed significant differences in the governance characteristics of firms acquired by friendly means. Finally only 10% of targets exhibited financial distress and the variable was insignificant in all models suggesting that financial distress did not drive non-hostile acquisitions.

The paper of Carmine Gioia (1993-1996) derive and test several hypotheses on the characteristics of Danish acquisitions during the period 1993 to 1996, and attempts to estimate a statistical model for prediction of acquisition targets. In order to test the hypotheses, binary and multinomial logit models are applied, with variables expressed on firm and industry level. The sample covers a broad cross section of firms of different sizes and in different industries. For the period 1993 to 1996, the results characterize targets as poor performers and financially distressed units when compared to their industry average and control group of non-merged companies. The findings support the inefficient management hypothesis and the more general view that acquisitions can serve as the managerial discipline device. Some light is also shed on the possibility of considering mergers and acquisitions as an alternative for bankruptcy avoidance. Acquirers are identified as companies in need for growth opportunities and better profitability. The models are tested for prediction accuracy on a holdout sample of firms in the year 1997.

This study includes a broad cross section of different size firms, operating in different industries and identifies characteristics for both target and acquirers compared to non-merged firms. A dummy variable is used as the dependant variable in the model which takes the value of 1 for acquired and the value of 0 for non-acquired firms. The independent variables are the natural log of real revenues lagged by one year and the lagged asset turnover, aiming to test the market inefficiency. The minimum efficient scale of one year lag is used to test for the barrier to entry while a dummy equal to 1 is used to measure the firm size when the company is younger than six years. Moreover other variables included are an additional dummy equal to 1 for manufacturing sector and 0 if otherwise,

the ratio of long term debt over the total assets in order to incorporate the financial leverage and the natural log of the firm's size to include the effect of the firm's size.

The results from the Binary-logit regression showed that in Denmark, inefficient management, size, age, leverage and barriers to entry are all significant in defining the characteristics of acquisition targets. When used for prediction of acquisition targets for the year 1997, the model presented accuracy of 84%. Some of the results are in line with those found in the academic literature (Dietrich and Sorensen (1984), Palepu (1986), Kim and Arbel (1998), Cudd and Duggal (2000). The study tends to identify targets as poor performers and financially distressed companies, while acquirers seem to be in need for growth opportunities and better profitability. However a more general and implicit conclusion can be drawn from the study, that acquisition might be a good mechanism to avoid firms' bankruptcy, helping them to preserve value and avoid the costly procedures of bankruptcy.

Another research based on non-U.S.A. companies, (by Ashbaugh and Davis-Friday, 2002) traded in the LSE, examines whether the accounting standards applied by the companies, the name of their auditor (big 6), size, growth of sales, ownership structure, leverage and laws imposed in each country during the years 1994-1998 are affecting company's characterization as a target or not. The sample contained 186 non-U.S. firms, listed on the LSE and quoted on SEAQ International.

The methodology focuses on the examination of companies having even once been identified as targets for acquisition or been taken over and companies which were never characterized as targets. The study looks at the significance of each variable examined in indicating whether a company can become a target or not. In order to test the hypotheses, Binary-logit models are applied and as a dependant variable a series of 1 and 0 is used. The dummy variable takes the value of 1 when the firm has become target or has even once been characterized as a target and the value of 0 when the firm has never been characterized as a target. Dummies are also used for the variables of IAS or GAAP application,

ownership and monitoring by the "big 6" auditing companies. The other independent variables are size, which is defined in the equation as the natural log of the market value of the firm, the five-year sales' growth, to define the firms' growth in the model and the debt to total equity ratio to measure the effect of leverage.

The study indicated a positive and significant association between firms' financial reporting strategies of disseminating IAS or U.S. GAAP financial information and the likelihood of a firm becoming a target in an M&A approach. The positive and significant coefficient of the auditors' variable indicates that firms which contract with the largest international audit firms are more likely to become targets than those which contract with relatively smaller audit companies. The negative and significant coefficient on leverage and the positive and significant coefficient on sales' growth indicate that firms with low leverage and high growth are more likely to become targets.

4. Data

The sample in this study consists of taken-over companies, belonging in different industries, non-financial institutions, over the years 1987-2002 and 'live' companies, which existed during the same time period with the acquired companies, drawn from the FTSE All Share Index. In order to run the regressions, the taken-over companies have been matched with the 'live' companies based on certain criteria.

First of all, the taken-over companies were identified and based on their industry and their market value they were matched with the live ones. For each taken-over company two or three 'live' ones were initially chosen, in case the time of their existence did not match. In order to form the pairs, we have collected the accounting items for the 'dead' and live companies for the last two years before the event of the acquisition.

The sample is composed of 342 taken-over and matched 'live', FTSE All Shares-companies. The matching was based on industry, relatively similar market capitalization and co-existence during the same time period. Accounting data was collected through the data-base program, DataStream. The companies had to be non-financials, traded on the LSE and have their financial statements quoted in sterling. The financial sector was excluded from the sample as financial leverage can not be estimated on financial companies and leverage was one of the most significant variables under investigation in this study.

The codes, which were used to collect the accounting items from the Data-stream, are presented in the table below together with their definition and the name of each variable. The statistical program EViews has been used for the analysis and the regressions.

Table 1

Data-stream code	ACCOUNTING ITEMS	EViews-code
211	NET EPS-ADJ	EPS
154	PRE-TAX PROFIT	PROF
350	TOTAL INVESTMENTS (EX. ASSOC.)	INV
1308	BOOK VALUE PER SHARE	BVPS
292	CAPITAL EXP. CONTRACTED	CAPEX
305	EQUITY CAP. AND RESERVES	ECR
307	TOT. SHARE CAPITAL & RESERVES	TSCR
322	TOTAL CAPITAL EMPLOYED	TCE
319	LONG TERM LOANS	LTL
321	TOTAL LOAN CAPITAL	TLC
339	TOT FIXED ASSETS-NET	TFA
701	RETURN ON S'HOLDERS EQUITY %	ROE
707	RETURN ON CAPITAL EMPLOYED %	RCE
709	RETURN ON NET FIXED ASSETS %	ROFA
731	CAPITAL GEARING %	CAPG
732	INCOME GEARING %	INCG
733	BORROWING RATIO	BORR
735	GCF/TOTAL LIABILITIES	GCF_TL
737	LOAN CAP./EQUITY & RESERVES	LC_ER
741	WORKING CAPITAL RATIO	WCR
761	TAX RATIO	TXR

The descriptive statistics for the significant variables in all regressions are presented below, separately for target (Table 2) and non-target (Table 3) firms.

Table 2 (Targets)

	TTCE	*TRCE*	*TCAPG*	*TWCR*	*T_1TCE*	*T_1RCE*	*T_1CAPG*	*T_1WCR*	*CTSCR*	*CTFA*	*CRCE*	*CWCR*	*PE*
Mean	212,533.1	17.1	42.6	1.4	201,768.1	13.2	25.3	1.5	0.0	0.2	0.4	0.0	24.9
Std Error	49,597.5	2.7	13.5	0.1	43,599.6	3.0	5.0	0.1	0.0	0.0	0.4	0.0	2.2
Median	29,144.5	13.5	29.2	1.3	29,724.0	15.0	27.5	1.3	0.1	0.1	-0.1	0.0	16.7
Kurtosis	78.7	46.7	215.4	4.3	61.4	118.3	175.4	15.1	10.0	31.9	176.7	31.1	39.6
Skew ness	8.0	0.4	14.3	1.5	7.1	-9.7	-12.4	3.0	-0.6	5.2	12.7	3.8	5.6

Table 3 (Non-Targets)

	TCAPG	*TTCE*	*TRCE*	*TWCR*	*T_1TCE*	*T_1RCE*	*T_1CAPG*	*T_1WCR*	*CTSCR*	*CTFA*	*CRCE*	*CWCR*	*PE*
Mean	30.8	438,705.1	21.4	1.8	447,365.8	17.2	28.1	1.8	0.3	0.5	1.5	0.0	14.6
Std Error	3.0	95,545.4	3.2	0.2	102,252.9	3.0	2.7	0.1	0.1	0.3	1.4	0.1	1.2
Median	26.7	82,882.0	16.7	1.4	66,081.0	16.4	24.1	1.5	0.1	0.1	0.0	0.0	12.3
Kurtosis	15.0	12.5	5.9	26.2	13.0	9.0	7.6	28.7	47.2	101.6	106.4	54.5	13.3
Skew ness	3.0	3.5	0.7	4.5	3.6	-1.2	2.3	4.4	6.3	10.0	10.3	6.3	3.1

5. Methodology

The methodology applied in order to prove the significance of the accounting data in the event of a company becoming a target, is based on binary models and specifically on logit regression. A logit regression is a particular type of regression where the dependant variable is a series of 1 and 0. This series, called P (TARGET), contains observations that take the value of 1 when the company has become a target and the value of 0 when the company has not become a target. Through the estimation of the model, the probability of the company becoming a target is evaluated. The interpretation of the coefficient values, is complicated by the fact that estimated coefficients from a binary model cannot be interpreted as the marginal effect on the dependent variable, as in normal regressions. Furthermore, the coefficients are weighted by a factor that depends on the value of all of the regressors in the equation.

In the binary-logit models, by using as a dependant variable a series of zeros and ones, what is actually estimated through the independent variables is the probability of y being equal to 1 or in other words, the probability of the firm becoming a target and bought out by another company. In a logit model, the influence of the explanatory variables on the dependant is measured only by the sign of the statistically significant estimated coefficients while the actual coefficient value is of no importance. A positive sign of the coefficient implies that an increase in the corresponding independent variable will increase the probability of the response, in our case, the probability of a company becoming a target. Negative signs of the coefficient indicate that as the X variable increases, the company has a lower probability of being taken over.

In order to examine the contribution of the selected accounting items in the identification of a firm as a target, statistical models have been formed for each year's accounting items and their percentage change between the two years. Since some of the selected variables have been drawn from the same accounting base and calculated in a similar way, there was a possibility of multicollinearity in the regression equation. In order to detect the problem, we have measured the

correlation between them and in cases where it exceeded 70%, a choice was made among the correlated variables as to which of them will be excluded from the sample before the estimation of the regression.

In the linear regression models, when correlation between two variables is identified, the variable that is less correlated with the dependant variable is taken out of the estimation procedure. Nevertheless, this method cannot be applied in Binary-Logit models since the dependant variable is a series of 1 and 0 and not a continuous series of data where a common linear trend can be identified. Correlation matrices have been formed for each model separately and the results of the correlated variables are presented in each case in order to show the degree and the sign of the relationship. The interpretation of the correlation table for the first model is presented below in order to show the way that the variables have been selected while the rest of the matrices are presented in the Appendix. As a rule of thumb, correlation between variables is characterized as strong when it ranges between 0.7 to 1. Correlation less than 0.7 is considered as acceptable. In the cases where the correlation coefficient was acceptable, both of the variables were included in the model, otherwise one of them was excluded.

During the estimation of each equation, outlying observations were detected and the corresponding data points were excluded from each regression. The excluded observations in each case were less than two for each variable.

The data analyzed represent a cross section where the only possible common problem with the residuals is heteroskedasticity and specifically White-Type Heteroskedasticity. In order to cure the problem, the Huber/White Robust Covariance Correction was applied.

In order to distinguish the data of each year in our analysis we have used the prefix T_1 for the items belonging in the previous year of the acquisition, T for the items that belong in the same year of the acquisition and C (change) for the items which derived from the percentage change between the two years.

The general way to justify whether a statistical model is significant in explaining the dependant variable is the use of the adjusted R squared. The Binary- logit models utilize the McFadden R-squared for the same reason. As the name suggests, this is an analogue to the reported R squared in linear regression models. It has the property that it always lays between zero and one.

The EViews allows the performance of the Pearson-type Chi-squared tests of goodness-of-fit. The EViews carries out two goodness-of-fit tests: Hosmer-Lemeshow (1989) and Andrews (1988a, 1988b). The idea underlying these tests is to compare the fitted expected values to the actual values by group. If these differences are "large", the model is rejected as it provides insufficient fit to the data. This test is applied in each model and the results are provided along with the model output. In order to detect whether the difference between the results of these tests is considered significant or not, the probability and the difference between the given tests are presented. The statistics are reported at the end of each model. Since the grouping on the basis of the fitted values falls within the structure of an Andrews test, we have reported the results for both the H-L and the Andrews test statistic. If the p-value for the HL test is high while the value for the Andrews test statistic is low, then the tests provide mixed evidence.

In each case, the model presented is the best fitted model to the equation. When two variables were correlated (by more than 70%) they were both used individually to produce separate models while the variable selected was the one which provided the highest McFadden R-squared and the smallest difference in the H-L and the Andrews tests. It should be noted that since some data points were not available for all the X variables, the models presented below may have slightly different total number of observations.

6. Results

Model 1

The first model includes all the accounting items drawn one year before the year of the acquisition as explanatory variables, suffixed by T_1. P (TARGET) is the dependant variable, which measures the possibility of a company being taken-over (takes the value of 1 for taken-over companies and 0 for non-targets). It should be noted that outliers have been spotted and these observations, consequently, have been removed in order to estimate the model correctly.

The estimation of the correlation between the variables indicated that there is strong positive correlation of the CAPEX with the Equity Capital and Reserves, the Long Term Loan, the Pre-Tax Profit, the Total Capital Employed and the Total Share Capital and Reserves. Furthermore, there was also detected strong positive correlation between BVPS and EPS, Borrowing Ratio and the Loan Capital over Equity and Reserves as well as strong negative correlation between the Borrowing Ratio and the Return on Equity. In addition the Capital Gearing presented significant negative correlation with the Tax Ratio. Negative strong correlation was evidenced between the Equity Capital and Reserves and the Long Term Loan, the Pre-Tax Profit, the Total Capital Employed, the Total Fixed Assets, the Total Loan Capital and the Total Share Capital and Reserves. Additionally, the total long term loan is positively correlated with the Pre-Tax Profit, the Total Capital Employed, the Total Fixed Assets, the Total Loan Capital and the Total Share Capital and Reserves. Moreover, the Pre-Tax Profit is also positively strongly correlated with the Total Capital Employed, the Total Fixed Assets and Total Share Capital and Reserves. The Total Capital Employed is strongly positively correlated with the Total Fixed Assets, the Total Loan Capital and the Total Share Capital and Reserves. Last but not least, the Total Fixed Assets is positively strongly correlated with the Total Loan Capital and the Total Share Capital and Reserves while the same applies for the Total Loan Capital with the Total Share Capital and Reserves. This analysis is being conducted for

every model while the correlation matrices for each model are presented in the Appendix.

In the final regression, there were included the Book Value Per Share, the Capital Gearing, the Gross Cash Flows over the Total Liabilities, the Income Gearing, the Return on Capital Employed, the Return on Equity, the Return on Fixed Assets, the Total Capital Employed and the Working Capital Ratio.
In the final model, presented below, there are only included the significant variables up to the 90% confidence interval. The rest of the variables have been excluded since they were insignificant.

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Included observations: 326					
Variables	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**	**Level of Significance**
TOTAL CAPITAL EMPLOYED (T-1)	**-6.39E-07**	**1.99E-07**	**-3.216152**	**0.0013**	***
RETURN ON CAPITAL EMPLOYED % (T-1)	**-0.010543**	**0.005746**	**-1.834764**	**0.0665**	*
WORKING CAPITAL RATIO (T-1)	**-0.38193**	**0.129722**	**-2.944225**	**0.0032**	***
C	**1.702587**	**0.304295**	**5.595187**	**0**	***
S.E. of regression	**0.455285**				
McFadden R-squared	**0.054729**				

* shows significance at the 10% level, ** at 5%, *** at 1%

We test the significance of the previous year's accounting items before the take over with the following logit regression:

P (TARGET) = -6.39E-07 * TOTAL CAPITAL EMPLOYED (T-1) -0.010543 * RETURN ON CAPITAL EMPLOYED % (T-1) -0.38193 * WORKING CAPITAL RATIO (T-1) + 1.702587

The regression shows that the most significant accounting items of the year before the acquisition year are the **TOTAL CAPITAL EMPLOYED**, statistically important at the 1% level, the **RETURN ON CAPITAL EMPLOYED** % at the 10% level and the **WORKING CAPITAL RATIO** significant at the 1% level.

Consequently these variables are significant in explaining the probability of a company becoming a target.

The importance of these accounting items in the financial stability of a company can be easily interpreted.The total the capital employed,for example,is the total amount of capital engaged within a company including shareholder's capital and reserves, total long term, deferred liabilities including deferred tax, minority interest, and total long term loans including subordinated loans. If the company does not have enough capital to support itself against its competitors or to expand, its financial position is considered vulnerable. The coefficient of the total capital employed is negative meaning that the smaller the total capital employed, the higher the probability for a company to become a target.

The coefficient of the return on capital employed is also negative and significant. The return on capital employed is the result of the earnings before interest and tax over the total capital employed plus short term borrowings minus total intangibles. The smaller the return on capital employed, the higher the probability for a firm to become a target. An interpretation of the regression's result is that despite the fact that the shareholders have invested a large amount of capital in the business, the return on their contribution is relatively low. Possible reasons for the low return could be the wrong strategic movements in investments, in the company's attempt to expand, or the introductory/development phase in which the company still is. It should be noted that when a company is in introduction or development phase, the cash flows are inefficiently low or even negative while the borrowing ratio is very high. Companies being at this phase usually have low return on capital, sufficient need for capital inflow, in order to develop, and high leverage. The return on capital employed will remain relatively low until the company enters the next stage of development where the cash flows turn positive, the revenues are increasing and consequently the company can generate higher earnings and pay back its loans.

Furthermore, the coefficient of the working capital ratio is negative and significant. Working capital ratio is defined as current assets over current liabilities and it is the actual available capital that the company has to cover its

short term needs. If the current assets do not cover the current liabilities (the ratio is less than 1), the company is probably facing liquidity constraints and that can be considered as a common reason for companies to become a target due to their vulnerable financial situation. Consequently, as the working capital ratio declines the company is more likely to become a target.

In the previous year of the acquisition, Book Value Per Share, Capital Gearing, Gross Cash Flows over Total Liabilities, Income Gearing, Return on Equity and Return on Fixed Assets were not significantly different between the acquired and non-acquired firms.

The McFadden R squared likelihood ratio index is 5.4729% but the probabilities of H-L and the Andrews test statistic show that the difference between the results of the two tests is insignificant and consequently the model is accepted as providing sufficient fit to the data. The result of the tests and the probabilities are shown in the table below:

H-L Statistic:	4.2272	Prob. Chi-Sq	0.8361
Andrews Statistic:	6.0555	Prob. Chi-Sq	0.8106

Model 2

The second model examines the significance of the final year's accounting items before the acquisition. In the model, all the accounting items are suffixed by T and the regression shows that four of the variables are eventually significant. The variables included in the model, after the correlation matrices were formed, are the Book Value Per Share, the Capital Gearing, the Income Gearing, the Investments excluding associates, the Loan Capital over Equity Reserves, the Return on Capital Employed, the Return on Equity, the Return on Fixed Assets, the Total Capital Employed, the Tax Ratio and the Working Capital Ratio.

In the final model only the significant variables up to 90% confidence interval were included. The results of the regression are presented below.

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Included observations: 337					
Variables	Coefficient	Std. Error	z-Statistic	Prob.	Level of Significance
CAPITAL GEARING %(T)	0.00186	7.79E-04	2.390558	0.0168	**
RETURN ON CAPITAL EMPLOYED %(T)	-0.012743	0.005626	-2.264968	0.0235	**
WORKING CAPITAL RATIO(T)	-0.348995	0.116988	-2.983165	0.0029	***
TOTAL CAPITAL EMPLOYED(T)	-6.11E-07	2.00E-07	-3.061788	0.0022	***
C	1.658781	0.278369	5.95893	0	***
S.E. of regression	0.45096				
McFadden R-squared	0.057748				

* Shows significance at the 10% level, ** at 5%, *** at 1%

The estimated equation is shown below:

P (TARGET) = 1.86E-03 * CAPITAL GEARING % -0.012743 * RETURN ON CAPITAL EMPLOYED % -0.348995 * WORKING CAPITAL RATIO -6.11E-07 * TOTAL CAPITAL EMPLOYED + 1.658781

The results of the regression indicate that the same accounting items which were significant in the previous year of the acquisition are even more significant in the final year before the take-over. The new significant variable is the capital gearing which shows the total debt included in a company's Balance Sheet over the total equity. This ratio is very important statistically as most of the companies taken over face serious financial distress issues or even bankruptcy. The positive sign of the coefficient implies that when capital gearing increases, the company takes on more debt, while it lacks sufficient share capital in order to secure its ownership, becoming eventually a target for an acquisition. These companies may become a target despite their financial distress if they present probabilities for recovery after a potential restructuring by the acquirer or if their debt can be considered insignificant compared to the new owner's asset base. Basic condition though in general, is that the firm should present prospects for further development after any potential restructuring takes place.

The coefficient of the **RETURN ON CAPITAL EMPLOYED** is negative and significant as in the previous year's items but in this regression it is even more

significant. The **WORKING CAPITAL RATIO** and the **TOTAL CAPITAL EMPLOYED** are also significant in the model while they are also negatively related to the probability of a company becoming a target, meaning that when the WORKING CAPITAL RATIO and/or TOTAL CAPITAL EMPLOYED decline, the probability for a company to be taken over increases.

The analysis indicated that Book Value per Share, Income Gearing, Investments excluding associates, Loan Capital over Equity Reserves, Return on Equity, Return on Fixed Assets, Total Capital Employed, and Tax Ratio did not differentiate significantly between targets and non-targets in the last year before the acquisition.

The McFadden R squared likelihood ratio index is relatively low, 5.7748% but the probabilities of H-L and the Andrews test statistic show that the difference between the results of the two tests is insignificant and consequently the model is accepted as providing sufficient fit to the data. The result of the tests and the probabilities are shown in the table below:

H-L Statistic:	2.5663	Prob. Chi-Sq	0.9586
Andrews Statistic:	3.4215	Prob. Chi-Sq	0.9697

Model 3

The third model examines the significance of the percentage change in the accounting items from one year to the other, in the probability of a firm becoming a target. In the model, there are included, after the correlation matrix has been formed, the change in the Capital Expenditure, Capital Gearing, Income Gearing, Investments excluding associates, Long Term Loan, Pre-Tax Profit, Return on Capital Employed, Return on Equity, Total Fixed Assets, Total Share Capital and Reserves, Working Capital Ratio and Earnings per Share. In the final model, presented below, there are only included the significant variables in up to 90% confidence interval.

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Included observations: 320					
Variables	Coefficient	Std. Error	z-Statistic	Prob.	Level of Significance
RETURN ON CAPITAL EMPLOYED % (CHANGE)	-0.0185	0.00912	-2.027106	0.0427	**
TOT FIXED ASSETS-NET (CHANGE)	0.36188	0.120492	3.003346	0.0027	***
TOT. SHARE CAPITAL & RESERVES (CHANGE)	-1.774498	0.435464	-4.074959	0	***
WORKING CAPITAL RATIO (CHANGE)	1.26	0.445	2.838797	0.0045	***
C	0.861588	0.12921	6.668142	0	***
S.E. of regression	0.45703				
McFadden R-squared	0.064041				

* Shows significance at the 10% level, ** at 5%, *** at 1%

The estimated equation is: **P (TARGET) = -0.0185 * RETURN ON CAPITAL EMPLOYED % + 0.36188 * TOT FIXED ASSETS-NET -1.774498 * TOT. SHARE CAPITAL & RESERVES+1.26 * WORKING CAPITAL RATIO + 0.861588**

The **RETURN ON CAPITAL EMPLOYED** % (CHANGE) is significant at the 5% level and the **TOT FIXED ASSETS-NET** (CHANGE), the **TOT SHARE CAPITAL & RESERVES** (CHANGE), the **WORKING CAPITAL RATIO** (CHANGE) and the constant are significant at the 1% level. The coefficient of the change in TOT FIXED ASSETS-NET is positive which means that as the percentage change between the two years increases, so does the probability of the company becoming a target. The percentage change in total net fixed assets may be positive or negative. If the change is positive it can be interpreted that the company is increasing its investment in fixed assets but at the same time it may also be in short of liquidity, lacking enough cash to cover its short-term needs. In most of the cases though, the investments in fixed assets are usually financed by long term debt. When a firm increases its long term debt it increases at the same time its capital gearing. For a company being in introductory or development stage, the enhancement of its asset base is of crucial importance at this stage. If the company lacks shareholders' capital it will finance the investments through borrowing, increasing at the same time its leverage and making its financial

position more vulnerable. If the sign of change in fixed assets is negative, then the company may be selling assets in order to cover its needs or payments. Both of these situations increase the probability of a firm becoming a target.

The coefficient of the change in the WORKING CAPITAL RATIO is also positive which means that as the percentage change increases so is the probability of the firm becoming a target. When a company is in financial distress, its working capital ratio decreases through the years and the percentage change is negative. In this case, the current assets of the company may be decreasing or the current liabilities are increasing i.e. the account receivables may be shrinking or the account payables are growing without an equivalent increase in revenues.

On the other hand, when the sign of the change is positive, it may be attributed to the fact that the company has large quantities of stock and there is a significant lower demand for its products. Consequently, the company may be in a vulnerable position even if the working capital ratio change is positive when the inventory account or the accounts receivables increases significantly with no respective increase in revenues. Companies which face this kind of problems are usually in introductory face where their products have not been advertised yet and the current liabilities exceed the current assets. This kind of signs may also be presented by a company which has reached its decay stage.

Companies in introductory stage can easily be bought out since they usually have negative cash flows and high leverage. These companies though need as well to present a potential for further expansion while they may be lacking at that moment funds to advertise their products and consequently affect the demand for them. On the other hand, companies in decay stage do not easily become a target as they have already been established with positive cash flows and very low leverage but their products may have reached their post-maturity level due to the entrance of new competitive products in the market.

The coefficient of the RETURN ON CAPITAL EMPLOYED % is significant at the 5% level and the sign is negative which means that as the return on capital employed decreases, the probability for a company becoming a target increases.

The TOTAL SHARE CAPITAL & RESERVES (CHANGE) which is the shareholder's equity in the company is significant in 99% confidence level. The Total Share Capital and Reserves is the company's own capital while especially the reserves are the guarantee to the debtors that their investment in the company is secure. The coefficient sign of the TOTAL SHARE CAPITAL & RESERVES change is negative and this implies that there is an inverse relationship between the change in the variable and the probability of the firm becoming a target. If the account of the Total Share Capital and Reserves decreases, the probability for a firm becoming a target increases.

The change in the Capital Expenditure, Capital Gearing, Income Gearing, investments excluding associates, Long Term Loan, Pre-Tax Profit, Return on Equity, and the change in the Earnings per Share were not significant in explaining the probability of a firm becoming a target. Consequently there was not any significant difference in these items between the targets and non targets.

The McFadden R squared likelihood ratio index is 6.4041%. The probabilities of H-L and the Andrews test statistic show that the difference between the results of the two tests is insignificant and consequently the model is accepted as providing sufficient fit to the data. The result of the tests and the probabilities are shown in the table below:

H-L Statistic:	7.4984	Prob. Chi-Sq	0.4839
Andrews Statistic:	11.2924	Prob. Chi-Sq	0.3352

Model 4

The fourth model examines the significance of the accounting items in the previous and last year before the acquisition and the change between the two years, all combined in a single model. The variables included in the model are the change in Total Share Capital and Reserves, the Working Capital Ratio of the two previous years before the acquisition, the Capital Gearing, the Return on

Capital Employed and the Total Capital Employed of the year of the acquisition. In the final model, presented below, only the significant variables in up to 90% confidence interval are included.

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Included observations: 323					
Variables	Coefficient	Std. Error	z-Statistic	Prob.	Level of Significance
TOT. SHARE CAPITAL & RESERVES (CHANGE)	-1.14	0.341	-3.348573	0.0008	***
WORKING CAPITAL RATIO (T-1)	-0.362439	0.132325	-2.739008	0.0062	***
CAPITAL GEARING % (T)	0.0021	0.000682	3.080458	0.0021	***
RETURN ON CAPITAL EMPLOYED % (T)	-0.00955	0.00435	-2.196152	0.0281	**
TOTAL CAPITAL EMPLOYED (T)	-6.12E-07	2.02E-07	-3.027802	0.0025	***
C	1.70413	0.277696	6.136674	0	***
S.E. of regression	0.450302				
McFadden R-squared	0.087495				

* Shows significance at the 10% level, ** at 5%, *** at 1%

The estimated equation is:

P (TARGET) = -1.14 * TOT. SHARE CAPITAL & RESERVES (CHANGE) - 0.362439 * WORKING CAPITAL RATIO (T-1) + 0.0021 * CAPITAL GEARING % (T) -0.00955 * RETURN ON CAPITAL EMPLOYED % (T) -6.12E-07 * TOTAL CAPITAL EMPLOYED (T) + 1.70413

Almost all of the variables and the constant are significant at the 1% level. The model includes variables from the previous year of the acquisition, the **WORKING CAPITAL RATIO** (T-1), variables from the last year, **CAPITAL GEARING** %, **RETURN ON CAPITAL EMPLOYED** %, **TOTAL CAPITAL EMPLOYED**, and the change between the two years of the **TOT. SHARE CAPITAL & RESERVES**. All of the variables are more significant here than in their respective models and they have the same sign as in their respective models.

The coefficient of the change in the Total Share Capital and Reserves is negative and significant meaning that when the change between the two years is negative, the probability for the company to be taken over is increasing. The coefficient of

the Capital Gearing ratio at the last year is positive and significant meaning that as capital gearing increases the firm is more vulnerable in being taken over. The coefficient of the Return on Capital Employed at the last year is also significant and negative meaning that when the return on capital employed is decreasing then the company could become a target. Furthermore, the coefficient of the Total Capital Employed is negative and significant. The negative sign indicates that when the percentage of the total capital employed decreases the company is considered as a possible target. Last but not least, the working capital ratio of the previous year is also significant and is related to the probability of a firm becoming a target with a negative sign implying that when this ratio is decreasing, the probability of y tends towards to 1. The change in the Return on Capital Employed and the change in the Working Capital Ratio were not significant in explaining the probability of a firm becoming a target.

The McFadden R squared likelihood ratio index is 8.7495%, larger than in the previous models and the probabilities of H-L and the Andrews test statistic show that the difference between the results of the two tests is insignificant. The difference in the probabilities is considered quite narrow and consequently the model is accepted as providing sufficient fit to the data. The result of the tests and the probabilities are shown in the table below:

H-L Statistic:	5.4616	Prob. Chi-Sq	0.7073
Andrews Statistic:	7.6445	Prob. Chi-Sq	0.6635

Model 5

The last model includes all the aforementioned variables while it also takes into account the price to earnings (PE) ratio and the Market to Book Value ratio of all the companies of the sample (MTBV). The other variables included in the current model, after the correlation matrix has been formed, are the change in the Total Share and Reserves, the Working Capital ratio of two previous years, the Capital Gearing, the Return on Capital Employed and the Total Capital Employed of the last year before the acquisition.

The only insignificant variable in the model was the MTBV which was taken out while all the others variables were significant at equal or higher level of 90% confidence interval. The final model is presented below:

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Included observations: 253					
Variables	Coefficient	Std. Error	z-Statistic	Prob.	Level of Significance
TOT. SHARE CAPITAL & RESERVES (CHANGE)	-0.914	0.381	-2.397262	0.0165	**
WORKING CAPITAL RATIO (T-1)	-0.315534	0.169766	-1.858642	0.0631	*
CAPITAL GEARING % (T)	0.00166	0.000781	2.124347	0.0336	**
TOTAL CAPITAL EMPLOYED (T)	-2.19E-06	5.60E-07	-3.912471	0.0001	***
PRICE TO EARNINGS RATIO (P/E)	0.0521	2.49E-02	2.092719	0.0364	**
RETURN ON CAPITAL EMPLOYED % (T)	-0.009555	0.005779	-1.65348	0.0982	*
C	1.32256	0.516127	2.562471	0.0104	**
S.E. of regression	0.405389				
McFadden R-squared	0.170309				

* Shows significance at the 10% level, ** at 5%, *** at 1%

The estimated equation is:

P (TARGET) = -0.914 * TOT. SHARE CAPITAL & RESERVES (CHANGE) - 0.315534* WORKING CAPITAL RATIO (T-1) + 0.00166*CAPITAL GEARING % (T) -2.19E-06 * TOTAL CAPITAL EMPLOYED (T) + 0.0521 * PRICE TO EARNINGS RATIO (P/E) -0.009555 * RETURN ON CAPITAL EMPLOYED % (T) + 1.32256

The final model includes all the variables which were significant in the previous models. They are all significant and their corresponding coefficients have the same sign as in their respective models. The P/E ratio is also significant at the 5% level. The MTBV ratio was taken out of the model as it was not significant in explaining the probability of a firm becoming a target. The coefficient of the P/E ratio is positive indicating that when the ratio is increasing the probability of a firm becoming a target increases too.

$$\text{P/E ratio} = \frac{\text{Current Market Price Per Ordinary Share}}{\text{Earnings Per Share}}$$

The P/E ratio indicates the price that it should be paid for a firm's current and potential future earnings. The interpretation of the ratio's significance can be quite important since it is an indicator of investors' opinion and expectations regarding the growth prospects of the company. If the P/E ratio is considered high then the market value is significantly high while the earnings are relatively small. If a company's market value is relatively high then a possible reason explaining the fact is the potential prospects of the company for further substantial growth in the future while its current earnings are considered relatively small. According to the above, when a company's P/E ratio increases then respectively it is implied that the market believes in the company's further growth and based on the above model the company could become a target. It should be noted that in order for a company to be taken over, other factors should be evident i.e. high leverage, decreasing working capital ratio and others.

On the contrary, when a company reports a low P/E ratio, then the market expects that there are no future prospects for growth while the current earnings are substantially high given the potential maturity stage of the company. Therefore, based on the model when P/E ratio increases, the probability a firm to be taken over tends to 1 and when the ratio decreases the respective probability approaches 0.

The P/E ratio combines market and accounting data. It could presumably indicate how many years it will take for an investor to recover, through corporate earnings, its investment at today's market price, assuming that the company's earnings will remain at current levels and hopefully grow.

However, it should be mentioned that a firm's high P/E ratio may not be attributed to high price but to relatively low earnings. If for example a firm presents an EPS close to zero, it will have an infinitely large P/E as long as its shares retain any value. Despite the above argument, the P/E ratio can be considered as a very important indicator for a firm's current status and its future development.

The McFadden R squared likelihood ratio index is 17.0309%, relatively higher than in previous models and the probabilities of H-L and the Andrews test statistic show that the difference is insignificant. The difference in the probabilities of the test could be considered quite narrow and consequently the model is accepted as providing sufficient fit to the data. The result of the tests and the probabilities are shown in the table below:

H-L Statistic:	14.1539	Prob. Chi-Sq	0.0778
Andrews Statistic:	20.0904	Prob. Chi-Sq	0.0284

All the initial models (including the insignificant variables) are presented in the Appendix.

7. Limitations

The data for the study was selected from the database DataStream. As a first limitation it should be noted that despite the fact that more "dead" companies have been identified during the period 1987-2002, only a specific number of them was included in the regression as some of them were lacking accounting and financial items required.

Moreover, in order to perform the regression, each “dead” company had to be matched with a live company which belonged in the same industry and had similar Market Value. In addition to the above, for each dead company more than one possible live-match was chosen, as the matched companies should co-exist in the same period and have available as well all the data required.

Furthermore, the accounting and financial statements of some companies did not have all the specific figures included in their reports. In cases where too many observations were missing for one variable, the specific variable was excluded from the analysis since the opposite would significantly reduce the degrees of freedom of the regression including it.

8. Conclusions

The globalization of the markets has eliminated the frontiers among the countries and the companies in the name of the shareholders’ value maximization pursue growth through global expansion. The fastest and in many cases the most efficient way to achieve expansion is by acquisitions. Consequently, if a company wishes to expand and increase its dominance in the market, it may find itself acquiring companies with significantly high leverage but at the same time substantial growth potentials. In order though for a company to proceed in an acquisition it should first identify the potential targets and examine the synergies created by the new entity.

The aim of this study is to contribute in the identification of potential targets through accounting and financial indicators. For this purpose, the accounting items of the previous and the last year before the acquisition, along with their percentage change have been estimated on a selected sample of 342 target and non-target UK companies. Based on this study, it has been shown that variables such as Total Capital Employed, Return on Capital Employed, and Working Capital Ratio of the previous year before the acquisition are significant in explaining the probability of a firm becoming a target. The examination of the last year's accounting figures before the acquisition indicates that the variables that

are significant in predicting whether a company will be characterized as a target or not are Capital Gearing Ratio, Return on Capital Employed, Working Capital Ratio and Total Capital Employed.

Furthermore, the percentage change between the last two years' accounting items indicates that the change in the Return on Capital Employed ratio, Total Fixed Assets, Total Share Capital and Reserves and Working Capital Ratio is significant in estimating whether a company will be taken over or not.

In addition, in order to discover the most significant variables among each year's items and the change between them, a model has been formed including all the variables. Based on the aforementioned model it has been shown that the most important variables statistically are the change in Total Share Capital and Reserves, the Working Capital Ratio of the previous year before the acquisition, the Capital Gearing ratio, the Return on Capital Employed and the to Total Capital Employed of the last year before the acquisition.

Two of the most important financial indicators, the P/E ratio and the Market to Book Value, have also been taken into account. As these ratios are considered measures of the financial status and future development of a company, they were also included in the study and their significance was compared to that of the accounting items. The estimation indicated that the P/E ratio, the change of the Total Share Capital and Reserves, the Working Capital Ratio of the previous year in combination with the Capital Gearing ratio, the Return on Capital Employed and the Total Capital Employed of the last year are statistically important in the identification of a company as a potential target.

Conclusively, this study highlights that accounting and financial indicators can be utilized by both acquirer and target. A company seeking for a target should rank the potential targets according to these criteria while on the other hand if a company's financial and accounting items bear similarities to the above findings, then it should realize that its ownership is in jeopardy and act respectively.

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Appendix

Model 1

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Variables	Coefficient	Std. Error	z-Statistic	Prob.	Level of Confidence
BOOK VALUE PER SHARE (T-1)	-6.85E-06	0.000536	-0.012796	0.9898	
CAPITAL GEARING % (T-1)	0.000337	0.005549	0.060734	0.9516	
INCOME GEARING % (T-1)	0.002698	0.002728	0.988845	0.3227	
TOTAL INVESTMENTS (EX. ASSOC) (T-1)	1.10E-05	1.04E-05	1.057197	0.2904	
LOAN CAP./EQUITY & RESERVES (T-1)	0.134965	0.262051	0.515031	0.6065	
RETURN ON CAPITAL EMPLOYED % (T-1)	-1.10E-02	6.66E-03	-1.645528	0.0999	*
RETURN ON S'HOLDERS EQUITY % (T-1)	0.001056	0.003337	0.316498	0.7516	
RETURN ON NET FIXED ASSETS % (T-1)	-0.000382	0.000721	-0.528923	0.5969	
TOTAL CAPITAL EMPLOYED (T-1)	-7.09E-07	2.33E-07	-3.037878	0.0024	***
TAX RATIO (T-1)	3.73E-03	4.56E-03	0.816841	0.414	
WORKING CAPITAL RATIO (T-1)	-0.372869	**0.129813**	-2.872362	0.0041	***
C	1.478039	**0.371411**	3.979526	0.0001	***
S.E. of regression	**0.458853**				
McFadden R-squared	**0.063019**				

Model 2

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Variables	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**	**Level of Confidence**
BOOK VALUE PER SHARE (T)	-1.07E-04	0.000444	-0.240265	0.8101	
CAPITAL GEARING % (T)	0.002806	0.001628	1.723868	0.0847	*
GCF/TOTAL LIABILITIES (T)	-0.401972	1.917436	-0.20964	0.8339	
INCOME GEARING % (T)	1.20E-03	2.06E-03	0.584476	0.5589	
RETURN ON CAPITAL EMPLOYED % (T)	-0.020991	0.008823	-2.37911	0.0174	**
RETURN ON S'HOLDERS EQUITY % (T)	1.07E-03	1.04E-03	1.023736	0.306	
RETURN ON NET FIXED ASSETS % (T)	0.003799	0.002678	1.418853	0.1559	
TOTAL CAPITAL EMPLOYED (T)	-5.79E-07	1.90E-07	-3.041755	0.0024	***
WORKING CAPITAL RATIO (T)	-3.44E-01	1.33E-01	-2.581578	0.0098	***
C	1.65E+00	3.41E-01	4.838317	0	***
S.E. of regression	**0.455252**				
McFadden R-squared	0.075556				

Model 3

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Variables	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**	**Level of Confidence**
CAPITAL EXP. CONTRACTED (CHANGE)	7.01E-01	0.52944	1.323689	0.1856	
CAPITAL GEARING % (CHANGE)	3.168242	2.66954	1.186812	0.2353	
INCOME GEARING % (CHANGE)	-0.096891	1.818171	-0.05329	0.9575	
TOTAL INVESTMENTS (EX. ASSOC) (CHANGE)	1.75E-02	3.96E-02	0.440701	0.6594	
LONG TERM LOANS (CHANGE)	-0.206251	0.244644	-0.843064	0.3992	
PRE-TAX PROFIT (CHANGE)	4.86E-01	1.04E+00	0.468231	0.6396	
RETURN ON CAPITAL EMPLOYED % (CHANGE)	-0.468076	2.605988	-0.179616	0.8575	
RETURN ON S'HOLDERS EQUITY % (CHANGE)	2.17E+00	3.37E+00	0.643197	0.5201	
TOT FIXED ASSETS-NET (CHANGE)	6.13E+00	4.01E+00	1.528811	0.1263	
TOT. SHARE CAPITAL & RESERVES (CHANGE)	-1.12E+00	1.93E+00	-0.581762	0.5607	
WORKING CAPITAL RATIO (CHANGE)	0.215422	**1.908372**	0.112883	0.9101	
NET EPS-ADJ (CHANGE)	-4.632659	**3.092654**	-1.497956	0.1341	
C	**0.31214**	**0.536344**	0.581977	0.5606	
S.E. of regression	**0.449907**				
McFadden R-squared	**0.327708**				

Model 4

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Variables	**Coefficient**	**Std. Error**	**z-Statistic**	**Prob.**	**Level of Confidence**
RETURN ON CAPITAL EMPLOYED %(CHANGE)	-6.84E-03	0.019241	-0.355527	0.7222	
TOT. SHARE CAPITAL & RESERVES (CHANGE)	-1.160824	0.399336	-2.906889	0.0037	***
WORKING CAPITAL RATIO (CHANGE)	0.068914	0.292878	0.235299	0.814	
WORKING CAPITAL RATIO (T-1)	-3.45E-01	1.38E-01	-2.496547	0.0125	**
CAPITAL GEARING % (T)	0.00212	0.00128	1.656375	0.0976	*
RETURN ON CAPITAL EMPLOYED % (T)	-9.49E-03	4.70E-03	-2.020382	0.0433	**
TOTAL CAPITAL EMPLOYED (T)	-6.08E-07	1.91E-07	-3.184753	0.0014	***
C	1.68E+00	3.02E-01	5.551005	0	***
S.E. of regression	0.45165				
McFadden R-squared	0.087943				

Model 5

Dependent Variable: P(TARGET)					
Method: ML - Binary Logit					
Variables	Coefficient	Std. Error	z-Statistic	Prob.	Level of Confidence
TOT. SHARE CAPITAL & RESERVES (CHANGE)	-8.78E-01	0.372631	-2.355114	0.0185	**
WORKING CAPITAL RATIO (T-1)	-0.321699	0.169875	-1.893743	0.0583	*
CAPITAL GEARING % (T)	0.001824	0.000848	2.149819	0.0316	**
TOTAL CAPITAL EMPLOYED(T)	-2.20E-06	5.62E-07	-3.91781	0.0001	***
PRICE TO EARNINGS RATIO	0.052011	0.02489	2.089662	0.0366	**
RETURN ON CAPITAL EMPLOYED % (T)	-1.14E-02	6.63E-03	-1.715853	0.0862	*
MARKET TO BOOK VALUE	-2.77E-03	3.94E-03	-0.703249	0.4819	
C	1.37E+00	5.28E-01	2.601271	0.0093	***
S.E. of regression	0.405913				
McFadden R-squared	0.17115				

Correlation Matrix (T)

	BORR	BVPS	CAPEX	CAPG	ECR	EPS	GCF_TL	INCG	INV	LC_ER	LTL	PROF	RCE	ROE	ROFA	TCE	TFA	TLC	TSCR	TXR	WCR
BORR	**1.00**	-0.02	0.04	0.02	0.08	-0.03	-0.06	-0.03	0.06	**0.97**	0.09	0.04	-0.11	**-0.78**	-0.01	0.11	0.05	0.12	0.08	0.00	-0.05
BVPS	-0.02	**1.00**	0.12	-0.04	0.16	**0.83**	-0.06	-0.01	0.11	-0.03	0.14	0.10	-0.06	0.03	-0.05	0.15	0.16	0.14	0.16	0.06	0.02
CAPEX	0.04	0.12	**1.00**	0.00	**0.72**	0.23	0.06	0.00	0.29	0.01	**0.71**	**0.83**	-0.01	0.03	-0.01	**0.71**	**0.71**	0.67	**0.72**	0.02	-0.09
CAPG	0.02	-0.04	0.00	**1.00**	0.01	-0.01	-0.12	0.03	0.00	0.02	0.01	-0.01	0.64	-0.03	-0.08	0.01	0.00	0.02	0.01	**-0.91**	-0.04
ECR	0.08	0.16	**0.72**	0.01	**1.00**	0.21	0.00	0.02	0.41	0.03	**0.75**	**0.81**	-0.03	0.04	-0.03	**0.97**	**0.94**	**0.86**	**1.00**	0.01	-0.12
EPS	-0.03	**0.83**	0.23	-0.01	0.21	**1.00**	0.17	-0.04	0.22	-0.03	0.25	0.30	0.10	0.10	0.04	0.21	0.22	0.22	0.21	0.03	-0.07
GCF_TL	-0.06	-0.06	0.06	-0.12	0.00	0.17	**1.00**	-0.05	0.01	-0.05	0.01	0.10	0.31	0.22	0.51	0.00	0.00	-0.01	0.00	0.05	-0.29
INCG	-0.03	-0.01	0.00	0.03	0.02	-0.04	-0.05	**1.00**	0.01	-0.02	0.04	-0.02	-0.04	0.03	0.02	0.03	0.02	0.05	0.02	0.00	-0.04
INV	0.06	0.11	0.29	0.00	0.41	0.22	0.01	0.01	**1.00**	0.02	0.38	0.32	0.00	0.04	-0.01	0.45	0.37	0.44	0.41	0.02	-0.07
LC_ER	**0.97**	-0.03	0.01	0.02	0.03	-0.03	-0.05	-0.02	0.02	**1.00**	0.04	0.01	-0.05	**-0.82**	0.00	0.04	0.01	0.05	0.03	0.01	-0.05
LTL	0.09	0.14	**0.71**	0.01	**0.75**	0.25	0.01	0.04	0.38	0.04	**1.00**	0.66	-0.03	0.04	-0.02	**0.83**	**0.77**	**0.93**	**0.75**	0.01	-0.08
PROF	0.04	0.10	**0.83**	-0.01	**0.81**	0.30	0.10	-0.02	0.32	0.01	0.66	**1.00**	0.03	0.05	-0.01	**0.78**	**0.79**	0.67	**0.81**	0.03	-0.13
RCE	-0.11	-0.06	-0.01	0.64	-0.03	0.10	0.31	-0.04	0.00	-0.05	-0.03	0.03	**1.00**	0.18	0.10	-0.03	-0.03	-0.04	-0.03	-0.45	-0.13
ROE	**-0.78**	0.03	0.03	-0.03	0.04	0.10	0.22	0.03	0.04	**-0.82**	0.04	0.05	0.18	**1.00**	0.12	0.05	0.03	0.04	0.04	0.02	0.02
ROFA	-0.01	-0.05	-0.01	-0.08	-0.03	0.04	0.51	0.02	-0.01	0.00	-0.02	-0.01	0.10	0.12	**1.00**	-0.03	-0.03	-0.03	-0.03	0.00	-0.06
TCE	0.11	0.15	**0.71**	0.01	**0.97**	0.21	0.00	0.03	0.45	0.04	**0.83**	**0.78**	-0.03	0.05	-0.03	**1.00**	**0.93**	**0.93**	**0.97**	0.01	-0.11
TFA	0.05	0.16	**0.71**	0.00	**0.94**	0.22	0.00	0.02	0.37	0.01	**0.77**	**0.79**	-0.03	0.03	-0.03	**0.93**	**1.00**	**0.82**	**0.94**	0.02	-0.14
TLC	0.12	0.14	0.67	0.02	**0.86**	0.22	-0.01	0.05	0.44	0.05	**0.93**	0.67	-0.04	0.04	-0.03	**0.93**	**0.82**	**1.00**	**0.86**	0.00	-0.09
TSCR	0.08	0.16	**0.72**	0.01	**1.00**	0.21	0.00	0.02	0.41	0.03	**0.75**	**0.81**	-0.03	0.04	-0.03	**0.97**	**0.94**	**0.86**	**1.00**	0.01	-0.12
TXR	0.00	0.06	0.02	**-0.91**	0.01	0.03	0.05	0.00	0.02	0.01	0.01	0.03	-0.45	0.02	0.00	0.01	0.02	0.00	0.01	**1.00**	0.01
WCR	-0.05	0.02	-0.09	-0.04	-0.12	-0.07	-0.29	-0.04	-0.07	-0.05	-0.08	-0.13	-0.13	0.02	-0.06	-0.11	-0.14	-0.09	-0.12	0.01	**1.00**

Correlation Matrix (T-1)

	BORR	BVPS	CAPEX	CAPG	ECR	EPS	GCF_TL	INCG	INV	LTL	LC_ER	PROF	RCE	ROE	ROFA	TCE	TFA	TLC	TSCR	TXR	WCR
BORR	**1.00**	0.02	0.07	0.05	0.05	0.00	0.00	-0.23	0.01	0.11	**0.83**	0.07	0.03	-0.02	0.12	0.06	0.05	0.09	0.05	-0.01	-0.06
BVPS	0.02	**1.00**	0.17	-0.02	0.21	**0.81**	-0.03	-0.06	0.14	0.18	0.09	0.16	-0.01	-0.05	0.02	0.19	0.20	0.18	0.21	-0.01	-0.02
CAPEX	0.07	0.17	**1.00**	0.03	**0.77**	0.24	0.01	0.00	0.29	**0.80**	0.10	**0.70**	0.00	-0.01	0.00	**0.77**	**0.80**	**0.83**	**0.77**	-0.03	-0.10
CAPG	0.05	-0.02	0.03	**1.00**	0.01	-0.01	**-0.74**	0.11	0.00	0.05	0.05	-0.02	**0.67**	0.08	-0.43	0.02	0.03	0.07	0.01	-0.02	-0.06
ECR	0.05	0.21	**0.77**	0.01	**1.00**	0.22	0.01	-0.02	0.40	**0.67**	0.12	**0.80**	-0.01	-0.02	0.01	**0.95**	**0.93**	**0.83**	**1.00**	-0.04	-0.12
EPS	0.00	**0.81**	0.24	-0.01	0.22	**1.00**	0.12	-0.03	0.25	0.23	0.05	0.27	0.14	0.10	0.06	0.21	0.22	0.21	0.22	0.00	-0.12
GCF_TL	0.00	-0.03	0.01	**-0.74**	0.01	0.12	**1.00**	-0.03	0.02	-0.01	-0.05	0.06	-0.25	0.06	0.41	0.00	-0.01	-0.02	0.01	0.03	-0.21
INCG	-0.23	-0.06	0.00	0.11	-0.02	-0.03	-0.03	**1.00**	-0.01	0.03	-0.34	-0.14	-0.01	0.02	0.04	0.03	0.02	0.12	-0.02	-0.08	-0.05
INV	0.01	0.14	0.29	0.00	0.40	0.25	0.02	-0.01	**1.00**	0.33	0.03	0.35	0.02	0.01	0.00	0.37	0.33	0.32	0.39	-0.02	-0.10
LTL	0.11	0.18	**0.80**	0.05	**0.67**	0.23	-0.01	0.03	0.33	**1.00**	0.20	0.53	-0.02	-0.02	0.00	**0.76**	**0.77**	**0.94**	**0.68**	-0.05	-0.08
LC_ER	**0.83**	0.09	0.10	0.05	0.12	0.05	-0.05	-0.34	0.03	0.20	**1.00**	0.12	0.00	0.09	0.11	0.13	0.12	0.17	0.12	-0.01	0.00
PROF	0.07	0.16	**0.70**	-0.02	**0.80**	0.27	0.06	-0.14	0.35	0.53	0.12	**1.00**	0.04	0.03	0.01	**0.80**	**0.83**	**0.63**	**0.80**	-0.01	-0.11
RCE	0.03	-0.01	0.00	**0.67**	-0.01	0.14	-0.25	-0.01	0.02	-0.02	0.00	0.04	**1.00**	0.15	-0.15	-0.02	-0.02	-0.02	-0.01	0.04	-0.09
ROE	-0.02	-0.05	-0.01	0.08	-0.02	0.10	0.06	0.02	0.01	-0.02	0.09	0.03	0.15	**1.00**	0.01	-0.03	-0.02	-0.02	-0.02	0.01	-0.17
ROFA	0.12	0.02	0.00	-0.43	0.01	0.06	0.41	0.04	0.00	0.00	0.11	0.01	-0.15	0.01	**1.00**	0.00	0.00	0.00	0.01	0.03	-0.04
TCE	0.06	0.19	**0.77**	0.02	**0.95**	0.21	0.00	0.03	0.37	**0.76**	0.13	**0.80**	-0.02	-0.03	0.00	**1.00**	**0.97**	**0.88**	**0.95**	-0.04	-0.10
TFA	0.05	0.20	**0.80**	0.03	**0.93**	0.22	-0.01	0.02	0.33	**0.77**	0.12	**0.83**	-0.02	-0.02	0.00	**0.97**	**1.00**	**0.88**	**0.93**	-0.04	-0.13
TLC	0.09	0.18	**0.83**	0.07	**0.83**	0.21	-0.02	0.12	0.32	**0.94**	0.17	**0.63**	-0.02	-0.02	0.00	**0.88**	**0.88**	**1.00**	**0.83**	-0.06	-0.10
TSCR	0.05	0.21	**0.77**	0.01	**1.00**	0.22	0.01	-0.02	0.39	**0.68**	0.12	**0.80**	-0.01	-0.02	0.01	**0.95**	**0.93**	**0.83**	**1.00**	-0.04	-0.12
TXR	-0.01	-0.01	-0.03	-0.02	-0.04	0.00	0.03	-0.08	-0.02	-0.05	-0.01	-0.01	0.04	0.01	0.03	-0.04	-0.04	-0.06	-0.04	**1.00**	0.07
WCR	-0.06	-0.02	-0.10	-0.06	-0.12	-0.12	-0.21	-0.05	-0.10	-0.08	0.00	-0.11	-0.09	-0.17	-0.04	-0.10	-0.13	-0.10	-0.12	0.07	**1.00**

Correlation Matrix (Change)

	BORR	BVPS	CAPEX	CAPG	ECR	EPS	GCF_TL	INCG	INV	LC_ER	LTL	PROF	RCE	ROE	ROFA	TCE	TFA	TLC	TSCR	TXR	WCR
BORR	**1.00**	**-0.65**	-0.04	**0.74**	-0.10	-0.22	-0.04	0.33	-0.04	**1.00**	0.08	0.04	-0.04	**0.92**	-0.08	0.09	-0.11	0.39	-0.10	0.05	-0.17
BVPS	**-0.65**	**1.00**	0.05	**-0.70**	0.38	-0.07	-0.23	-0.60	0.56	**-0.67**	-0.20	-0.07	-0.26	**-0.68**	-0.14	0.11	0.11	-0.40	0.37	-0.42	0.50
CAPEX	-0.04	0.05	**1.00**	-0.14	0.00	-0.19	-0.06	0.08	-0.04	-0.06	-0.05	-0.06	-0.10	-0.09	-0.09	-0.09	-0.06	-0.16	0.00	-0.03	-0.03
CAPG	**0.74**	**-0.70**	-0.14	**1.00**	-0.26	-0.03	0.09	0.51	-0.27	**0.77**	0.18	0.18	0.07	**0.70**	-0.08	0.15	0.21	**0.71**	-0.25	0.31	-0.28
ECR	-0.10	0.38	0.00	-0.26	**1.00**	-0.18	-0.21	-0.39	0.50	-0.09	0.17	0.04	-0.21	-0.16	-0.14	**0.82**	0.19	0.15	**1.00**	-0.34	0.36
EPS	-0.22	-0.07	-0.19	-0.03	-0.18	**1.00**	**0.65**	-0.01	-0.42	-0.22	-0.03	0.04	**0.79**	0.10	**0.78**	-0.18	0.22	-0.04	-0.17	**0.67**	-0.32
GCF_TL	-0.04	-0.23	-0.06	0.09	-0.21	**0.65**	**1.00**	0.11	-0.44	-0.04	-0.04	-0.42	**0.91**	0.32	**0.89**	-0.16	0.13	-0.07	-0.21	0.50	-0.27
INCG	0.33	-0.60	0.08	0.51	-0.39	-0.01	0.11	**1.00**	**-0.68**	0.34	0.01	0.31	0.05	0.25	-0.06	-0.08	0.10	0.31	-0.41	0.53	-0.23
INV	-0.04	0.56	-0.04	-0.27	0.50	-0.42	-0.44	**-0.68**	**1.00**	-0.05	-0.03	-0.25	-0.47	-0.15	-0.30	0.31	-0.23	-0.05	0.50	**-0.74**	0.46
LC_ER	**1.00**	**-0.67**	-0.06	**0.77**	-0.09	-0.22	-0.04	0.34	-0.05	**1.00**	0.12	0.05	-0.04	**0.91**	-0.09	0.12	-0.10	0.45	-0.09	0.06	-0.17
LTL	0.08	-0.20	-0.05	0.18	0.17	-0.03	-0.04	0.01	-0.03	0.12	**1.00**	0.10	-0.07	0.07	-0.04	0.31	-0.03	0.49	0.17	-0.01	0.15
PROF	0.04	-0.07	-0.06	0.18	0.04	0.04	-0.42	0.31	-0.25	0.05	0.10	**1.00**	-0.35	-0.17	-0.47	0.22	0.34	0.26	0.03	0.40	0.06
RCE	-0.04	-0.26	-0.10	0.07	-0.21	**0.79**	**0.91**	0.05	-0.47	-0.04	-0.07	-0.35	**1.00**	0.34	**0.92**	-0.23	0.12	-0.11	-0.21	**0.62**	-0.41
ROE	**0.92**	**-0.68**	-0.09	**0.70**	-0.16	0.10	0.32	0.25	-0.15	**0.91**	0.07	-0.17	0.34	**1.00**	0.31	0.01	-0.09	0.33	-0.15	0.21	-0.30
ROFA	-0.08	-0.14	-0.09	-0.08	-0.14	**0.78**	**0.89**	-0.06	-0.30	-0.09	-0.04	-0.47	**0.92**	0.31	**1.00**	-0.22	-0.05	-0.16	-0.14	0.44	-0.29
TCE	0.09	0.11	-0.09	0.15	**0.82**	-0.18	-0.16	-0.08	0.31	0.12	0.31	0.22	-0.23	0.01	-0.22	**1.00**	0.44	**0.61**	**0.83**	-0.16	0.36
TFA	-0.11	0.11	-0.06	0.21	0.19	0.22	0.13	0.10	-0.23	-0.10	-0.03	0.34	0.12	-0.09	-0.05	0.44	**1.00**	0.37	0.20	0.32	-0.14
TLC	0.39	-0.40	-0.16	**0.71**	0.15	-0.04	-0.07	0.31	-0.05	0.45	0.49	0.26	-0.11	0.33	-0.16	**0.61**	0.37	**1.00**	0.18	0.11	0.00
TSCR	-0.10	0.37	0.00	-0.25	**1.00**	-0.17	-0.21	-0.41	0.50	-0.09	0.17	0.03	-0.21	-0.15	-0.14	**0.83**	0.20	0.18	**1.00**	-0.35	0.35
TXR	0.05	-0.42	-0.03	0.31	-0.34	**0.67**	0.50	0.53	**-0.74**	0.06	-0.01	0.40	**0.62**	0.21	0.44	-0.16	0.32	0.11	-0.35	**1.00**	-0.35
WCR	-0.17	0.50	-0.03	-0.28	0.36	-0.32	-0.27	-0.23	0.46	-0.17	0.15	0.06	-0.41	-0.30	-0.29	0.36	-0.14	0.00	0.35	-0.35	**1.00**

NOTES

NOTES

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