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Examining the Factors Affecting the Return on Investment with Special Focus on Weighted Average Cost of Capital of Selected Oil Industry Companies in India

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ABSTRACT: The present research work aims to explore the factors that influence the Return on Investment (ROI) which is the key element for measuring the overall financial efficiency of an entity. And this ROI is influenced by various factors like quantitative and qualitative factors. For that ROI is taken as the dependent variable and liquidity ratios like current ratio, quick ratio and cash ratios, fund raising costs i.e., cost of equity, cost of debt and weighted average cost of capital (WACC), profitability ratios like gross profit ratio, net profit ratio, return on total assets, return on non-current assets and return on tangible non-current assets are taken as independent variables. Apart from these independent variables, age of the company and size of the board of directors are also taken as independent variables. To understand the relationship between the above mentioned dependent and independent variables, three crude oil refinery and marketing companies are taken, which are listed in the Indian stock market, they are Reliance industries limited, ONGC and Oil India Limited are chosen. The data regarding the variables are collected from the annual reports of the respective companies from 2006-07 to 2022-23 for RIL and ONGC and 2010-11 to 2022-23 for Oil India. Panel Data regression and correlation techniques have been applied to regress the dependent variable. It is evident that the liquidity ratios are negatively influencing the ROI, profitability ratio i.e., net profit ratio is negatively influencing and return on total assets is positively influencing the ROI and fund-raising costs i.e., cost of equity and weighted average cost of capital are also positively influencing the dependent variable ROI.

KEYWORDS: return on investment, profitability, liquidity, fund raising costs, age of the company, size of the board

I. INTRODUCTION

This study aims to bring useful insights for the stakeholders who are involved in the investing business and want to make investments in the oil industry in India. The project aims to deliver the important factors that can help the investors to take informed decisions about investing in the Indian oil market. Geographical Focus: The study will pay close attention to the oil sector in India, taking into account the enterprises that are based there. Time Scope: To guarantee consistency and usefulness of data, the research will take into account the data from 2007 to 2023 only for 2 companies and 2011 to 2023 for 1 company in India. Data gathering: For the project, financial data and pertinent information will be gathered from publicly accessible sources such as annual reports, financial statements, financial websites and databases. Capital structure being represented by cost of capital and profitability indicator being net profit and WACC will be the project's two main areas of concentration. Sample Selection: To ensure variety in terms of size, ownership structure, and financial performance, a representative sample of oil sector enterprises will be chosen. Statistical Analysis: To ascertain the link between cost of capital and profitability and to pinpoint any important elements impacting cost of capital decisions, the research will make use of the necessary techniques.

II. STATEMENT OF RESEARCH PROBLEM

Return on Investment (ROI) is a yardstick to measure the overall profitability of an entity, which is influenced by different quantitative and qualitative factors like profitability ratios (gross profit ratio, net profit ratio, return on total assets, return on non-current assets and return on tangible non-current assets), liquidity ratios like current ratio, quick ratio and cash ratio and fund-raising cost like cost equity, cost of debt and weighted average cost of capital. Apart from these factors, age of company and board size also influences the overall efficiency of a firm.



A crucial consideration for companies in all sectors of the economy, the relationship between cost of capital and return on investment forms the basis of financial management and investment decision-making. In its most basic form, the cost of capital represents the amount of money that a business must spend to continue operating, using a combination of debt and equity financing. At the same time, return on investment functions as a gauge of the profitability brought about by these investments, demonstrating the effectiveness of capital allocation choices. A wide range of theoretical frameworks and empirical data have been examined by academics and practitioners as they investigate the relationship between the cost of capital and return on investment. Traditional financial theories have long maintained an indirect correlation between these two variables, arguing that higher the capital costs should result in similarly lower returns and vice versa. Return on investment is having adverse relationship with the fund-raising cost. Maintaining liquidity is essential for any business organization as it justifies the ability of the firm to pay its immediate financial obligations. Liquidity of a firm can be measured in terms of investment on current assets which can be converted into cash quickly.

III. METHODOLOGY

In order to understand the variable which, affect the ROI of the company, so we have taken 3 oil industry company like Reliance Industries Limited, Oil and Natural Gas Corporation and Oil India. The data has been collected from the annual reports of the respective company from 2006 – 2023 for 2 companies and 2011 to 2023 for 1 company.

IV. EXPERIMENTAL RESULTS

REGRESSION ANALYSIS:

TABLE NO 1: CORRELATION MATRIX FOR ALL THE THREE COMPANIES.

	ROI	AGE	BOD	CASH_R ATI O	COST_O F_D EB T	COST_O F_E QUITY	CURRE N T_ RATIO	NET_PR OFI T_RATI O	QUICK_ RATI O	RONCA	ROTA	ROTN CA	WACC
ROI	1.000000	-0.457836	0.451023	0.380659	-0.183260	-0.035409	0.420107	0.636191	0.407460	0.726047	0.915270	0.555266	-0.011105
AGE	-0.457836	1.000000	-0.477651	-0.362460	0.495978	0.151187	-0.383740	-0.368477	-0.338043	-0.488296	-0.522229	-0.306697	0.135814
BOD	0.451023	-0.477651	1.000000	0.116759	-0.584994	-0.105531	0.095972	0.004350	0.047884	0.271462	0.453624	0.242313	-0.091030
CASH_R ATI O	0.380659	-0.362460	0.116759	1.000000	-0.359701	-0.080694	0.953402	0.627015	0.962804	0.870034	0.566998	0.255173	-0.077313
COST_ OF_ DEBT	-0.183260	0.495978	-0.584994	-0.359701	1.000000	0.081920	-0.234255	-0.101112	-0.219246	-0.386833	-0.353837	-0.188460	0.103662
COST_ OF_ EQUIT Y	-0.035409	0.151187	-0.105531	-0.080694	0.081920	1.000000	-0.062201	-0.033336	-0.082252	-0.068110	-0.053230	0.026791	0.976098
CURRE N T_ RATIO	0.420107	-0.383740	0.095972	0.953402	-0.234255	-0.062201	1.000000	0.672734	0.985851	0.837280	0.586627	0.277260	-0.060775
NET_PR OFI T_RATI O	0.636191	-0.368477	0.004350	0.627015	-0.101112	-0.033336	0.672734	1.000000	0.695921	0.785835	0.734264	0.347271	-0.017903
QUICK_ RATI O	0.407460	-0.338043	0.047884	0.962804	-0.219246	-0.082252	0.985851	0.695921	1.000000	0.852540	0.560039	0.270819	-0.077162
RONCA	0.726047	-0.488296	0.271462	0.870034	-0.386833	-0.068110	0.837280	0.785835	0.852540	1.000000	0.848915	0.4710	-0.055097

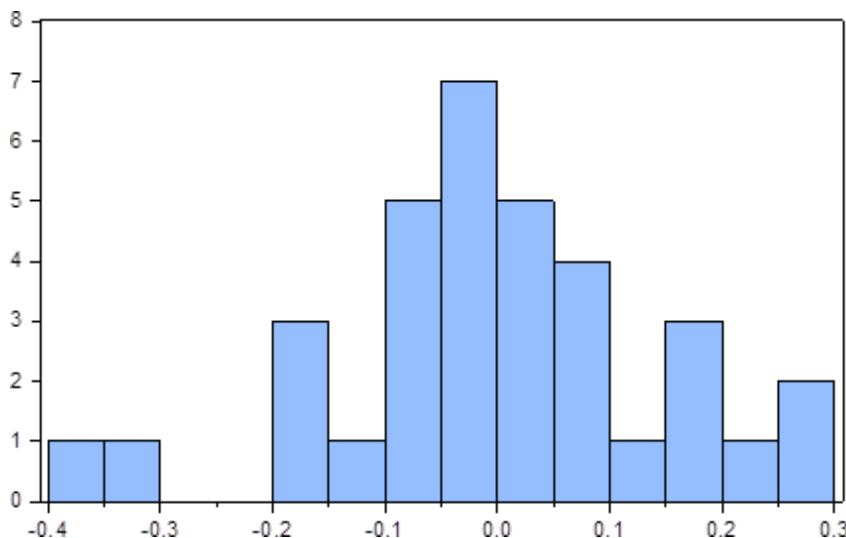


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ROTA	0.915270	-0.522229	0.453624	0.566998	-0.353837	-0.053230	0.586627	0.734264	0.560039	0.848915	1.000000	0.5325	-0.040294
ROTNC	0.555266	-0.306697	0.242313	0.255173	-0.188460	0.026791	0.277260	0.347271	0.270819	0.471001	0.532526	1.0000	0.064323
A												00	
WACC	-0.011105	0.135814	-0.091030	-0.077313	0.103662	0.976098	-0.060775	-0.017903	-0.077162	-0.055097	-0.040294	0.0643	1.000000
												23	

Table No 2 : Results of panel regression

Dependent Variable: ROI Method: Panel Least Squares Date: 04/12/24 Time: 15:05 Sample: 1 47
 Periods included: 17
 Cross-sections included: 3
 Total panel (unbalanced) observations: 47

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RONCA	0.211784	0.181123	1.169278	0.2504
ROTA	1.479987	0.318946	4.640249	0.0001
ROTNC	0.002556	0.003667	0.696989	0.4905
WACC	0.002144	0.036890	0.058107	0.9540
QUICK_RATIO	2.881796	1.954496	1.474445	0.1496
NET_PROFIT_RATIO	-0.090640	0.087679	-1.033773	0.3085
CURRENT_RATIO	-2.045966	1.591244	-1.285765	0.2072
COST_OF_EQUITY	0.000627	0.021369	0.029327	0.9768
COST_OF_DEBT	1.344554	0.519225	2.589539	0.0140
CASH_RATIO	-2.028676	1.243348	-1.631623	0.1120
BOD	0.283968	0.173891	1.633026	0.1117
AGE	-0.084032	0.111396	-0.754354	0.4558
C	0.658069	7.527155	0.087426	0.9308
R-squared	0.914896	Mean dependent var		12.43066
Adjusted R-squared	0.884859	S.D. dependent var		7.304493
S.E. of regression	2.478594	Akaike info criterion		4.882664
Sum squared resid	208.8765	Schwarz criterion		5.394407
Log likelihood	-101.7426	Hannan-Quinn criter.		5.075237
F-statistic	30.45914	Durbin-Watson stat		1.160197
Prob(F-statistic)	0.000000			



Series: Standardized Residuals	
Sample 1 47	
Observations 34	
Mean	-1.75e-16
Median	-0.010977
Maximum	0.294500
Minimum	-0.395819
Std. Dev.	0.148572
Skewness	-0.339456
Kurtosis	3.575294
Jarque-Bera	1.121838
Probability	0.570684

V. CONCLUSION

To conclude that Return on Investment (ROI) is a measure of overall performance of an entity and which is influenced by different factors over a period of time. It is evident that the results are strongly support the finance theory as well as the past research results, i.e., the liquidity ratios are negatively influencing the ROI, profitability ratios are positively influencing the ROI and fund-raising costs are negatively associated with ROI during the study period of these three companies. Hence the management of the three companies has to focus on the variables which are significant in influencing the ROI.

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