

E-CONTENT PREPARED BY

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NAAC Accredited "A" Grade College

(Recognized under Section 2(f) and 12(B) of UGC Act 1956)

**E-Content prepared for students of
B.Com. Honours and Honours and Programme
(Semester-3rd) in Accounting**

**Name of Course: Financial
Management**

Topic of the E-Content

Business Risk



OUT-AND-OUT RISK ANALYSIS





Business Risk

Business Risk is caused by

- ▶ Economy-specific factors : fluctuations in foreign exchanges, competition, concentration of revenues, inflation, imports, restrictive regulations etc.
- ▶ Industry-specific factors : special status enjoyed by the industry, growth prospects in the market for the products of the industry.
- ▶ Company-specific factors : cost structure, liquidity, managerial efficiency, culture, values etc.

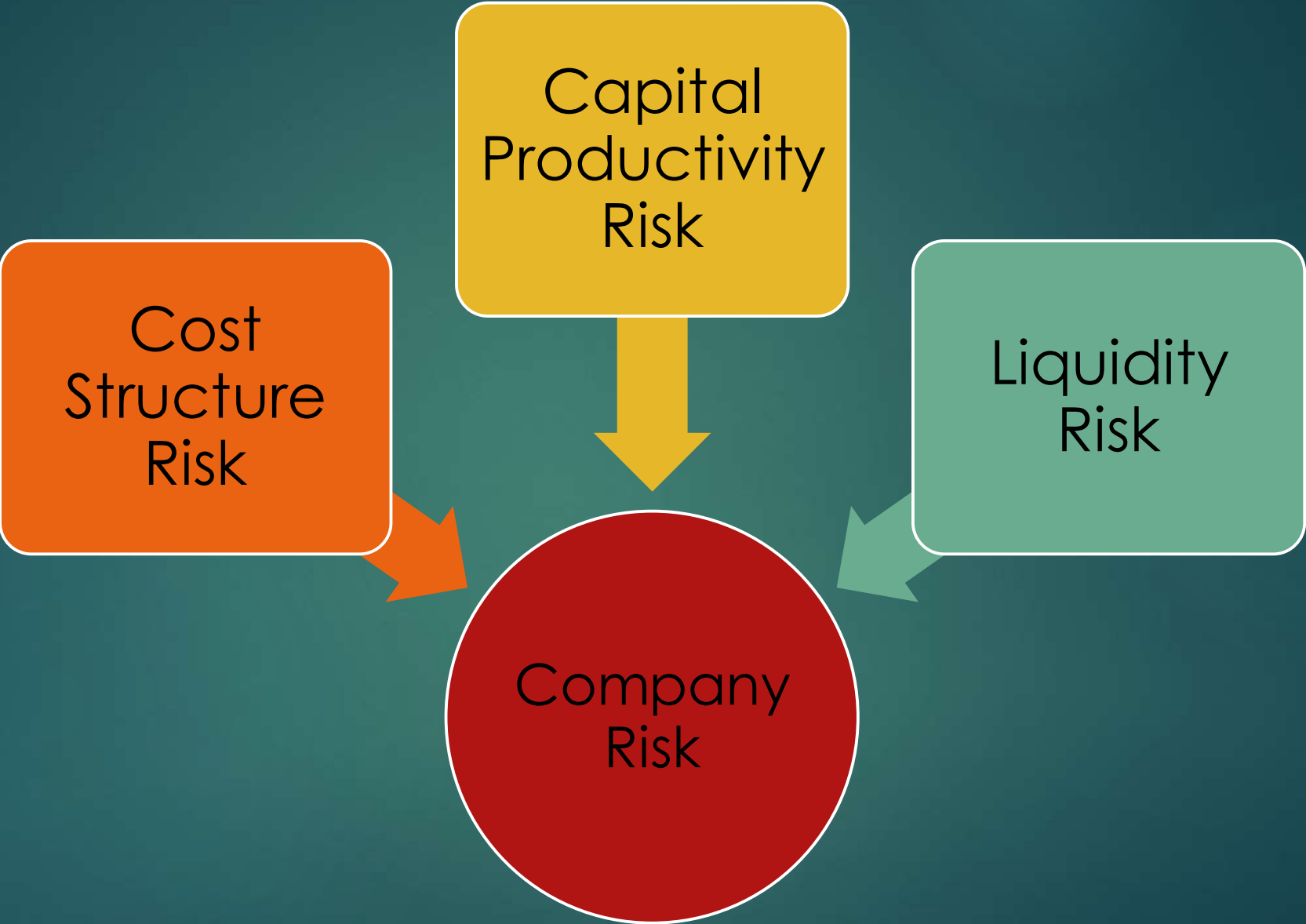
Business Risk



Economy Risk

Industry Risk

Company Risk



Financial Risk





Relationship between Business Risk and Financial Risk



Relationship between Risk and Return

Relevance of Risk Analysis

- ▶ To understand the relative position of the company within the given pattern of industry risk that in turn reflects capability to achieve stability.
- ▶ To make risk-return trade-off.
- ▶ To realign the capital and capital structure, working capital policies and cost structure.
- ▶ To revise capital structure.

Risk: Non-statistical Measures

- ▶ **Business Risk**

- ▶ **FATA**

- ▶ **DOL**

- ▶ **Financial Risk**

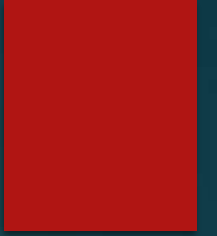
- ▶ **DER**

- ▶ **DFL**

Risk: Statistical Measures

- ▶ $BR = \text{C.V. of Operating Profit or Operating Profit Ratio or Operating Profit to Capital Employed Ratio.}$
- ▶ $TR = \text{C.V. of Earnings available to Owners' Equity or ROE}$
- ▶ $FR = TR - BR$
- ▶ $CSR = \text{C.V. of Fixed Cost to Total Cost Ratio}$
- ▶ $CPR = \text{C.V. of Capital Turnover Ratio}$
- ▶ $LR = \text{C.V. of Current Ratio}$

Risk Measurement: An Alternative Approach



Ginni's Coefficient

Ginni's Coefficient of Mean Difference

5,11,18,25,41

41-5= 36 25-5= 20 18-5= 13 11-5=6

41-11=30 25-11=14 18-11=7

41-18=23 25-18= 7

41-25=16

Total=105 Total=41 Total=20 Total=6

$g = 105+41+20+6 = 172$

$m = n(n-1) / 2 = 5(5-1)/2 = 10$

Ginni's Coefficient of mean difference: $\Delta 1 = g/m =$
 $172/10 = 17.2$

Ginni's Coefficient of Concentration:

$$\begin{aligned} G &= \Delta 1 / 2 \times \bar{x} \\ &= 17.2 / 2 \times (5+11+18+25+41) \times 1 / 5 \\ &= 0.43 \end{aligned}$$

Why Ginni's Coefficient ?

Ginni's Coefficient has a theoretical appeal since it is based on all the values of the variable and the differences of values among themselves and not on deviations from some measures of central tendency.

Case Study

Analysis of business risk in the Indian corporate sector during the period 1994-95 to 2013-14 using Ginni's Coefficient

The Backdrop

With the notable transformation in the scenario in the economic front since July 1991 along with other aspects of corporate affairs , the earning trends, cost behaviour pattern, capital productivity and liquidity policies in the Indian corporate sector have also changed significantly leading to noticeable changes in the pattern of business risk associated with the corporates. The Indian enterprises have been forced to reorient their strategies for managing their company-specific components of business risk in the post-liberalization era. Some of them have been able to adapt themselves to the new situation while others could not so reorient. In this backdrop, the present paper attempts to analyze the business risk in the Indian corporate sector during the period 1994-95 to 2013-14.

Research Gap

A good number of studies on the analysis of business and financial risks have been carried out in India and abroad during the last few decades while a very few studies on the same issue relating to the Indian corporate sector has so far been made during the post-liberalization era. By a careful scrutiny of the studies of business risk analysis in Indian corporate sector it can be inferred that no in-depth study on the issue in connection with the business risk associated with the corporate sector in India considering the effects of the major changes that took place in Indian business environment during the post-liberalization period has been made. Even the studies so far conducted at both the national and international levels have failed to make any definite conclusion on the relationship between business risk and operating profitability. Most of the studies so far made in the global perspective are theoretical and associated with financial institutions only. Moreover, Ginni's coefficient of concentration is presently recognised as a reliable measure of risk. But no significant study on the business risk analysis in Indian corporate sector has been carried out using such a coefficient. In order to bridge the gap, it is, therefore, high time to deal with the issue relating to the analysis of business risk in the Indian corporate sector during the post-liberalization period applying Ginni's coefficient of concentration.

Objectives of the Study

- ❖ To measure the BR associated with each of the selected companies and of the selected industries as a whole.
- ❖ To ascertain the company-specific components of BR associated with each of the selected companies, to analyze industry averages of such components and to test whether there was any uniformity among the trends in such components.
- ❖ To study the relative risk-return status of the selected industries.
- ❖ To analyze the closeness of association between BR and return of the selected companies.
- ❖ To assess the joint effect of the company-specific components of BR associated with the selected companies on their returns.
- ❖ To examine whether the findings of the study conform to the theoretical arguments.

Methodology of the study

- ❖ The study is based on 20 major industries in India which were selected from the manufacturing sector following purposive sampling procedure.
- ❖ 100 companies were selected by taking the top 5 companies (based on market capitalization as per BSE on 31st March, 2015) from each of the 20 selected industries.
- ❖ The data of the selected companies as well as industries for the period 1994-95 to 2013-14 used in this study were taken from secondary sources i.e. Capitaline Corporate Database of Capital Market Publishers (I) Ltd. Mumbai.
- ❖ In this study the financial year 1994-95 was considered as the initial year of the post-liberalization period.
- ❖ While measuring business risk and its company-specific components of each of the selected companies Ginni's coefficient of concentration was used. For making analysis of the computed values of risks, statistical techniques like Pearson's simple correlation analysis, Spearman's rank correlation analysis, analysis of Kendall's coefficient of concordance, multiple correlation analysis and multiple regression analysis and statistical tests like t test, F test and Chi-square (χ^2) test were applied at appropriate places.

Table 1: Ranks of Business Risk of the Selected Industries in India

Serial No.	Industry	Business Risk	Status	Rank
1	Breweries & Distilleries	0.121	B	20
2	Cement	0.175	B	13
3	Ceramics & Granite	0.161	B	16
4	Chemicals	0.181	B	11
5	Computers - Hardware	0.213	A	7
6	Consumer Goods-Electronic	0.173	B	14
7	Domestic Appliances	0.215	A	5
8	Engineering - Heavy	0.127	B	19
9	Fertilizer	0.193	A	9
10	Glass & Glass Products	0.129	B	18
11	Food Processing	0.183	B	10
12	Infrastructure - General	0.214	A	6
13	Leather Products	0.156	B	17
14	Mining & Minerals	0.179	B	12
15	Paints & Varnishes	0.256	A	1
16	Paper	0.168	B	15
17	Personal Care	0.237	A	3
18	Pharmaceuticals	0.246	A	2
19	Steel - Large	0.196	A	8
20	Tyre	0.216	A	4
Indian Manufacturing Industry Average		0.187		

‘A’ denotes ‘ Business Risk above the Indian Manufacturing Industry Average’ and ‘B’ denotes ‘ Business Risk below the India Manufacturing Industry Average’

Source: Compiled and computed from ‘Capitaline Corporate Database’ of Capitaline Market Publishers (I) Ltd., Mumbai.

45% of the
selected
Industries

Manufacturing
Industry Mean

55% of the
selected
Industries

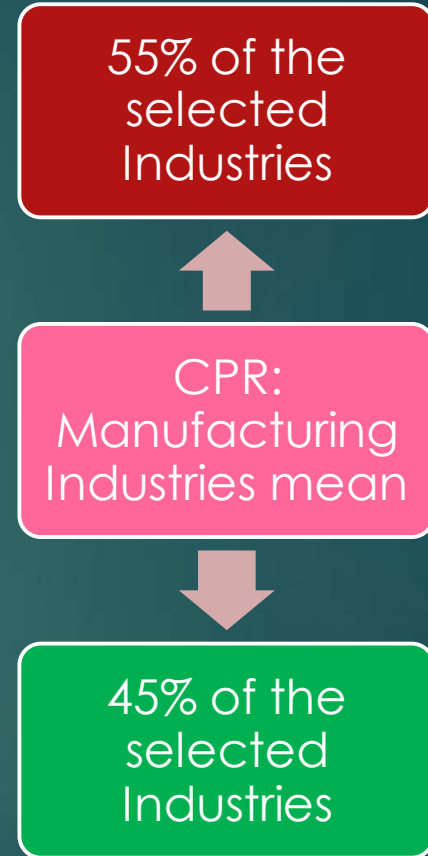
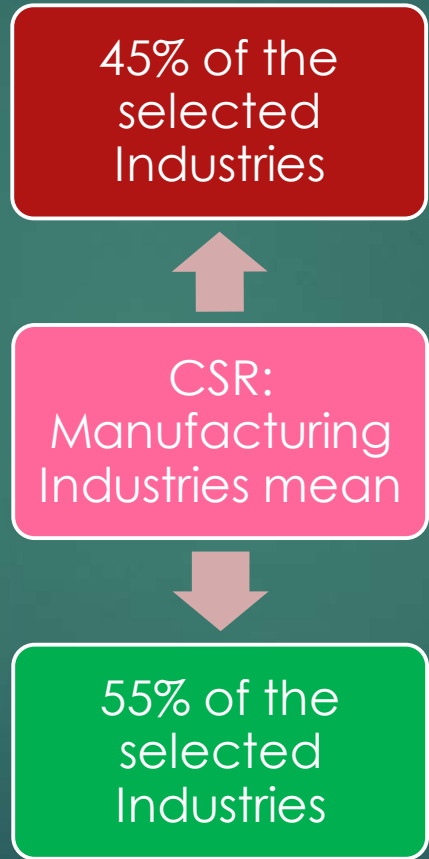
Table 2: Ranks of Company-specific Components of Business Risk of the Selected Industries in India

Serial No.	Company	Liquidity Risk (LR)			Cost Structure Risk (CSR)			Capital Productivity Risk (CPR)		
		LR	Status	Rank	CSR	Status	Rank	CPR	Status	Rank
1	Breweries & Distilleries	0.127	B	18	0.011	B	19	0.196	A	5
2	Cement	0.185	B	10	0.037	B	10	0.202	A	2
3	Ceramics & Granite	0.151	B	16	0.018	B	16	0.169	A	8
4	Chemicals	0.174	B	14	0.029	B	12	0.163	A	9
5	Computers- Hardware	0.193	A	9	0.047	A	8	0.257	A	1
6	Consumer Goods Electronic	0.168	B	15	0.020	B	15	0.112	B	17
7	Domestic Appliances	0.210	A	5	0.069	A	4	0.183	A	6
8	Engineering- Heavy	0.119	B	20	0.009	B	20	0.104	B	19
9	Fertilizer	0.201	A	8	0.055	A	7	0.197	A	4
10	Glass & Glass Products	0.124	B	19	0.017	B	17	0.101	B	20
11	Food Processing	0.293	A	1	0.089	A	2	0.154	B	12
12	Infrastructure-General	0.204	A	6	0.056	A	6	0.129	B	15
13	Leather Products	0.144	B	17	0.016	B	18	0.111	B	18
14	Mining & Minerals	0.183	B	11	0.032	B	11	0.155	B	11
15	Paints & Varnishes	0.261	A	2	0.097	A	1	0.199	A	3
16	Paper	0.180	B	12	0.027	B	13	0.161	A	10
17	Personal Care	0.240	A	3	0.075	A	3	0.179	A	7
18	Pharma	0.231	A	4	0.068	A	5	0.141	B	14
19	Steel - Large	0.175	B	13	0.022	B	14	0.128	A	16
20	Tyres	0.203	A	7	0.046	A	9	0.146	B	13
Indian Manufacturing Industry Average		0.189			0.043			0.159		

‘A’ denotes ‘LR/CSR/CPR above the Indian Manufacturing Industry Average’ and ‘B’ denotes ‘LR/CSR/CPR below the Indian Manufacturing Industry Average’

Kendall’s coefficient of concordance among the selected company-specific components of business risk (W) is 0.1185 and Chi-square (χ^2) value of W is 6.7545 being insignificant at 0.05 level.

Source: Compiled and computed from ‘Capitaline Corporate Database’ of Capitaline Market Publishers (P) Ltd. Mumbai



- ❖ It is, generally, accepted that disparity among the nature of instability in short term debt paying capability, cost behaviour pattern and capital productivity is obvious.
- ❖ Thus, lack of uniformity among the trends in LR, CSR and CPR in different industries is a natural phenomenon.
- ❖ At a glance, the same trend in the selected industries was also observed during the period under study.
- ❖ Table 2 shows that the computed value of Kendall's coefficient of concordance was 0.1185 which was not found to be statistically significant even at 5 per cent level.
- ❖ It again confirms that uniformity among the trends in the selected company-specific components of business risk was absent during the study period.

Table 3.1: Risk-return Status of the Selected Industries in India based on combination of Business Risk and Return

ROCE Business Risk	High ($\geq 30\%$)	Moderate ($>15\%$ but $<30\%$)	Low ($\leq 15\%$)
High (≥ 0.20)	Computers – Hardware, Paints & Varnishes, Personal Care, Pharmaceuticals	Domestic Appliances, Infrastructure – General	Tyres
Moderate (>0.15 but <0.20)	Consumer Goods- Electronic, Food Processing, Mining & Minerals	Cement, Ceramics & Granite, Chemicals, Fertilizer, Leather Products, Steel - Large	Paper
Low (≤ 0.15)	Breweries & Distilleries	Engineering – Heavy	Glass & Glass Products

Source: Compiled and computed from ‘Capitaline Corporate Database’ of Capital Market Publishers (I) Ltd., Mumbai.

Table 3.2 : Risk-return Status of the Selected Industries in India based on the combination of Liquidity Risk and Return

LR \ ROCE	High ($\geq 30\%$)	Moderate ($>15\%$ but $<30\%$)	Low ($\leq 15\%$)
	High (≥ 0.20)	Food Processing, Paints & Varnishes, Personal Care, Pharmaceuticals	Domestic Appliances, Fertilizer, Infrastructure – General
Moderate (>0.15 but <0.20)	Computers – Hardware, Consumer Goods- Electronic, Mining & Minerals	Cement, Ceramics & Granite, Chemicals, Steel - Large	Paper
Low (≤ 0.15)	Breweries & Distilleries	Engineering – Heavy, Leather Products	Glass & Glass Products

Source: Compiled and computed from ‘Capitaline Corporate Database’ of Capital Market Publishers (I) Ltd., Mumbai.

Table 3.3 : Risk-return Status of the Selected Industries in India based on the combination of Cost Structure Risk and Return			
ROCE	High ($\geq 30\%$)	Moderate ($>15\%$ but $<30\%$)	Low ($\leq 15\%$)
CSR			
High (≥ 0.065)	Food Processing, Paints & Varnishes, Personal Care, Pharmaceuticals	Domestic Appliances	
Moderate (>0.035 but <0.065)	Computers – Hardware	Fertilizer, Infrastructure –General, Cement	Tyres
Low (≤ 0.035)	Breweries & Distilleries, Consumer Goods-Electronic, Mining & Minerals	Ceramics & Granite, Chemicals, Steel – Large, Engineering – Heavy, Leather Products	Glass & Glass Products, Paper

Source: Compiled and computed from ‘Capitaline Corporate Database’ of Capital Market Publishers (I) Ltd., Mumbai.

Table 3.4: Risk-return Status of the Selected Industries in India based on the combination of Capital Productivity Risk and Return

CPR \ ROCE	High ($\geq 30\%$)	Moderate ($>15\%$ but $<30\%$)	Low ($\leq 15\%$)
	High (≥ 0.20)	Computers – Hardware	Cement
Moderate (>0.15 but <0.20)	Food Processing, Paints & Varnishes, Personal Care, Breweries & Distilleries, Mining & Minerals	Domestic Appliances, Fertilizer, Ceramics & Granite, Chemicals	Paper
Low (≤ 0.15)	Pharmaceuticals, Consumer Goods- Electronic	Infrastructure -General, Steel - Large, Engineering - Heavy, Leather Products	Tyres, Glass & Glass Products

Source: Compiled and computed from ‘Capitaline Corporate Database’ of Capital Market Publishers (I) Ltd., Mumbai.

Table 4 : Analysis of Relationship between Risk and Return of the Selected Companies in Indian Industry

Correlation Coefficient between Correlation Measure	Business Risk and Return	Liquidity Risk and Return	Cost Structure Risk and Return	Capital Productivity Risk and Return
Pearson	0.2134*	0.2569*	0.2123*	0.0561
Spearman	0.2312*	0.3001**	0.3015**	0.1214

*Significant at 0.05 level. ** Significant at 0.01 level.

Source : Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

Table 5 : Analysis of Multiple Regression and Multiple Correlation of Return on Company-specific components of Business Risk of the Selected Companies in the Indian Industry

Multiple Regression Equation of ROCE on LR, CSR and CPR:

$$\text{ROCE} = b_0 + b_1 \cdot \text{LR} + b_2 \cdot \text{CSR} + b_3 \cdot \text{CPR} + e$$

<i>Variable</i>	<i>Partial Regression Coefficient</i>	<i>t Value</i>
LR	4.567	2.512*
CSR	8.239	3.018**
CPR	0.298	1.006
Constant	12.015	7.719

Multiple Correlation Coefficient of ROCE on LR, CSR and CPR:

$$R_{\text{PLCC}} = 0.349$$


$$R^2_{\text{PLCC}} = 0.1218$$

$$F = 4.4382^{**}$$

*Significant at 0.05 level.

** Significant at 0.01 level

Source: Compiled and computed from 'Capitaline Corporate Database' of Capital Market Publishers (I) Ltd., Mumbai.

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- ❖ A 'high-high' combination of BR or its company-specific components and return is theoretically desirable.
 - ❖ The empirical results obtained from the analysis of interrelation as made in this study using two correlation measures provide strong evidence of positive relationship between risk and return in most of the cases.
 - ❖ The study of multiple regression of ROCE on LR, CSR and CPR also provides strong evidence of the significant positive influence of LR and CSR on operating profitability implying that in the said cases high risk was well compensated by high risk premium i.e. high return in the selected companies during the period under study.

Thank You!



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