MANAGERIAL COMPETENCE AND FIRM PERFORMANCE: AN EMPIRICAL STUDY OF THE INDIAN CAPITAL GOODS SECTOR LISTED ON BSE

Ranjit Kumar Paswan
Assistant Professor
Department of Commerce
Kazi Nazrul University, Asansol
Paschim Bardhaman, West Bengal
E-mail: ranjit.paswan81@gmail.com

ABSTRACT

This study is an honest attempt to analyze the linkage between managerial efficiency and firm performance of selected companies. In this study a sample of eleven companies belonging to different industries under the capital goods sector have been selected. The data has been collected from the Capitaline database throughout the duration of ten years from 2011-12 to 2020-21. Within this research, Return on Capital Employed (ROCE) assessed as financial performance variables. Current Ratio (CR), Debt Equity Ratio (DER), Fixed Assets Turnover Ratio (FATR), Inventory Turnover Ratio (ITR), and Total Assets Turnover Ratio (TATR) were taken to be represented as managerial efficiency variables. Further, firm size is taken as control variable. To accomplish the objectives diverse statistical techniques such as descriptive analysis, correlation and regression techniques have been applied. The result of the study indicates that TATR and Size are the significant predictors of ROCE while other independent variables have no significant on ROCE.

Keywords: Managerial Efficiency, Performance, Capital Goods Sector, Panel Data Analysis

INTRODUCTION

Capital goods play an important role in a developing economy, as it significantly contributes to the development of economic growth with increase in productivity and efficiency. The sector helps the manufacturing companies to grow. The increasing demand in the Indian market has encouraged the expansion of capital goods production. It accounts for approximately 12 per cent of total manufacturing and 2 per cent of the country's GDP. The production industry depends largely on the capital goods sector. The various capital goods including plants, machinery and equipment are essential for manufacturing other products. This interdependent relationship between the manufacturing unit and capital goods sector is crucial for economic development. The areas such as infrastructure, construction and engineering heavily rely on machineries and equipment produced by the capital goods sector. Access to the latest technology and machinery empowers companies to innovate and produce new products, which creates job and higher income opportunities. The swift evolution of technology and the growing

use of information technology (IT) in business organization have become the center of attention in past few years (Rashiti, *et al.,* 2015) Therefore, the success of the manufacturing sector depends entirely on the performance of the capital goods industry. Managerial efficiency denotes the proper allocation of resources including capital, labor and material. Managers with superior skills not only adapt their organizations to growing surroundings but also take advanced measure to boost their resources for long-term existence (Cyert and March, 1963, Thompson, 2003). The management ensures that the resources are used in such a manner to increase returns and minimize cost. Effective managers use their profession skills and expertise to improve the application of company's limited resources where it is required (Bhutta *et al.*, 2021). They are skilled enough to manage and control costs across the numerous facets of the business. Numerous decisions made by the efficient managers influences company's health. A number of studies argue that managerial ownership plays an important role in mitigating conflicts and improve financial performance as indicated in various analysis (McConnell and Servaes, 1995, Kumar & Singh, 2013, Hoang *et* al., 2017). The efficient management plays an important role financial performance of the business. Several measures such as turnover ratios and inventory management denote the managerial efficiency. In addition, the effective management of fixed assets and other assets shows the corporate capacity in asset-driven sales. The long-term tangible assets in terms of fixed assets are important for generating revenue. The Return on capital employed serves as the key parameter of measuring profitability and financial efficiency concerning operational activities.

Recently, Indian has witnessed a noteworthy development in demand for capital goods in the market. However, it is important to cite that approximately one-third of this demand is met through imports. The improved economic reform has led this sector to be more resourceful. Managerial abilities sanction the success of the firm by attaining various decisions with regard to operational as well as financial areas. In the long run existence, the managers must have to take initiatives to produce and operate advanced systems as and when it is required. The management efficiency has its effect in the performance of business. It is the ability of the management, which will prove its efficiency in productivity even after having decreased amount of technical, financial and infrastructural resources. Managerial efficiency is closely related to financial performance as it encompasses various activities which impact the company's profitability, cost control, utilization of resources and financial health. In this context it is important to know the impact of managerial efficiency on the performance of the Indian capital goods companies.

LITERATURE REVIEW

Baik *et al*. (2012) examined whether firm performance influenced by changes in operational efficiency. For the measurement of changes in efficiency, authors have considered two efficiency measures derived though frontier analysis namely DEA-based Malmquist index and SFA-based Malmquist index. They observed positive association during efficiency fluctuations measures and current and expected profitability variations. Almumani (2013) has made an attempt to examine the impact of managerial factors on profitability of commercial banks in Jordan. The study revealed positive influence of operational efficiency on profitability of Jordanian commercial banks while other parameters including liquidity, credit composition, credit risk, capital adequacy and bank size have no statistical effect on profitability. Barus *et al*. (2017) applied multilinear regression model for analyzing how efficiency influences the performance of savings and credit societies in Kenya. The study disclosed that there was insignificant impact of managerial efficiency on performance. The similar result can be seen in the studies conducted by Meliani (2021); Arifiana (2022); and Jacob (2017). Budiharjo (2019) examined the effect of activity ratio, leverage, market ratio, profitability and environmental performance on share prices. The study disclosed that ROE, Price earnings ratio and environmental performance have significant increase on stock prices. However, Debt Equity ratio has significant negative impact on the same. Amachree and Iheanyi (2020) conducted study to understand management efficiency and financial performance of Nigerian banks. The results of study revealed that loan deposit ratio and loan assets ratios have no effect on bank's performance of Nigeria. It has been observed from the result that management has not utilized its loan deposits and assets at its full capacity. Arifiana and Khalifaturofi, (2020)

analysed the effect of financial ratio in predicting the financial performance. The study covered a sample of 87 manufacturing companies listed on Indonesia Stock Exchange during the period 2016-2020. The study revealed that liquidity and profitability have significant negative impact in predicting the financial distress. Further, while measuring the effectiveness of the firm in utilizing the resources, it was observed that activity ratio has significant negative impact in predicting the financial distress. Binsaddig *et al.* (2022) investigated the relationship between activity ratios and gross profit margin of Bahrain's communication sector. A range of activity indicators such as accounts receivable turnover, inventory turnover, and total assets turnover ratios have been taken into account. The empirical result stated positive relationship between total assets turnover and profitability. However, Inventory turnover and accounts receivable turnover have no relationship with profitability. Adesola *et al.* (2022) examined the impact of management practices on the performance of Nigerian manufacturing companies. The study revealed positive impact of effective financial management on the earnings after tax and retained earnings. However, there was negative impact of financial management on debt-to-equity ratio. Baharuddin *et al.* (2021) investigated the factors which affect financial performance of financial agency. They observed that activity ratio, regional financial independence ratio, effectiveness ratio and efficiency ratio have positive impact on the economic performance of selected sample. Bama *et al.* (2021) examined the influence of profitability and total assets turnover on firm value of food and beverage manufacturing companies. The study discovered that profitability has a positive and significant impact on firm value, which supports the findings of the study conducted by Alivia and Chabachib (2013) with dissimilarities from the study of Utami and Prasetiono (2016). Further, it was also observed that total assets turnover has positive but insignificant influence on firm value.

OBJECTIVE AND METHODOLOGY

The study seeks to analyze the relationship between managerial efficiency and performance of capital goods sector listed on Bombay Stock Exchange. The study considers a sample of eleven manufacturing companies under the Capital Goods sector listed on BSE 200 index. At the time of collecting data, out of twelve listed companies, one company was excluded due to unavailability of data. A total of ten years period has been covered ranging from 2011-12 to 2020-21. The data for study has been collected from the 'CAPITALINE' database. The present study reflects Return on Capital Employed (ROCE) as financial performance measures. Current Ratio (CR), Debt Equity Ratio (DER), Fixed Assets Turnover Ratio (FATR), Inventory Turnover Ratio (ITR), Total Assets Turnover Ratio (TATR) were representing the managerial efficiency variables while Size of the companies is taken as control variable.

Variables	Types
Return on Capital Employed (ROCE)	Dependent
Current Ratio (CR)	Independent
Debt Equity Ratio (DER)	Independent
Fixed Assets Turnover Ratio (FATR)	Independent
Inventory Turnover Ratio (ITR)	Independent
Total Assets Turnover Ratio (TATR)	Independent
Size Log (TA)	Control

Hypothesis

H_1: Managerial efficiency and firm performance are negatively associated.

H_2: There is positive association between Managerial efficiency and firm performance.

The present study investigates the relationship between managerial efficiency and firm performance using Panel Regression Model with fixed and random effects. In this study Hausman test has been used to select fixed effect or random effect. Therefore, in this study to accomplice the objective to test the impact of managerial efficiency on firm performance, following regression models has been established.

Model: $ROCE_{it} = \beta_0 + \beta_1(CR)_{it} + \beta_2(DER)_{it} + \beta_3(FATR)_{it} + \beta_4(ITR)_{it} + \beta_5(TATR)_{it} + \beta_6(LogTA)_{it} + \varepsilon_{it}$

Return on Capital Employed (ROCE) has been considered as dependent variable which represents the firm performance. However, the independent variables include Current Ratio (CR), Debt Equity

Ratio (DER), Fixed Assets Turnover Ratio (FATR), Inventory Turnover Ratio (ITR) and Total Assets Turnover Ratio (TATR) with Size as control variable. Here, β_0 is intercept, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ and β_6 are the coefficients of managerial efficiency ratios and ε_{it} is the cross-section time specific error component.

ANALYSIS AND INTERPRETATION

Table 1: Descriptive Statistics

Variables	Observations	Mean	Std. Dev.	Minimum	Maximum
ROCE	110	14.71	7.99	-9.93	30.93
CR	110	1.51	0.45	0.42	2.69
DER	110	0.17	0.32	0.00	1.90
FATR	110	5.46	4.49	0.46	23.86
ITR	110	8.23	6.23	0.66	34.35
TATR	110	1.96	1.66	0.23	7.92
SIZE	110	8.47	1.37	4.99	10.82

Source: Eviews 9 Software Output

The result of descriptive statistics revealed that Return on Capital Employed of the selected firms had an average of 14.71 percent with standard deviation of 7.99, which denotes the sector had generated Rs 1.47 of profit for every Rs 14.7 of capital employed. This indicates companies belonging to the capital goods sector had a better performance during study period. An average of 1.51 for Current Ratio means the companies have Rs 1.51 in its current assets to cover the current liabilities of Re. 1. A Debt Equity Ratio with an average of 0.17 indicates, the companies have very low level of debt in comparison to its equity. FATR shows an average of 5.46 percent for the period, which indicates the companies have efficiently utilized its fixed assets. Inventory Turnover Ratio of 8.23 denotes that the companies are efficiently managing its inventory and converting it into sales multiple times. An average Total Assets Turnover ratio of 1.96 denotes that have generated sales of Rs 1.96 for per rupee of assets invested.

Table 2: Correlation Analysis

	ROCE	CR	DER	FATR	ITR	TATR	LOGTA
ROCE	1						
CR	0.188829	1					
	(0.0482)						
DER	-0.30126	-0.50427	1				
	(0.0014)	0					
FATR	0.383121	0.371017	0.021789	1			
	(0.0000)	(0.0001)	(0.8212)				
ITR	0.29646	0.154808	0.078601	0.720847	1		
	(0.0017)	(0.1063)	(0.4144)	(0.0000)			
TATR	0.339863	-0.15328	0.368757	0.526385	0.288691	1	
	(0.0003)	(0.1099)	(0.0001)	(0.0000)	(0.0022)		
LOGTA	-0.37639	0.106804	-0.43576	-0.5898	-0.48766	-0.81631	1
	(0.0001)	(0.2668)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	

Source: Eviews 9 Software Output, Value within parentheses denotes p-value

Table 2 above indicates the result of correlation analysis. The ROCE shows a weak positive correlation with the CR (0.1888) with a p-value of 0.0482, suggesting that firms with higher current ratio tend to have slightly higher ROCE, although this correlation is statistically significant. Conversely, ROCE displays a substantial and statistically significant negative correlation with the Debt Equity Ratio (DER), which implies that firms with higher debt levels consistently exhibit lower ROCE. The FATR exhibits a moderate and statistically notable positive correlation with ROCE (r=0.383, p=0.0000), signifying that firms with greater fixed assets turnover tend to have higher ROCE. Similarly, the ITR shows a lower positive correlation with ROCE (r=0.2964, p=0.0017), inferring that firms with higher inventory turnover may have slightly higher ROA, although this correlation is significant. The total assets turnover ratio demonstrates a moderate and significant positive correlation with ROCE (r=0.3398, p=0.0003), implying that firms with higher total assets turnover tend to have higher ROCE. Lastly, the size of the sample companies shows a moderate negative correlation with ROCE, which suggest that larger firms may have slightly lower ROCE, although this correlation is also statistically significant.

Table 3: Multicollinearity Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	46.933	10.890		4.310	.000		
CR	-1.081	2.056	-.055	-.526	.600	.525	1.904
DER	-16.276	2.681	-.591	-6.070	.000	.594	1.683
FATR	.030	.297	.015	.100	.920	.253	3.947
ITR	.100	.172	.069	.578	.564	.393	2.544
TATR	.705	.782	.131	.902	.369	.268	3.727
LOGTA	-3.116	1.002	-.479	-3.110	.002	.238	4.203

Note: Dependent Variable: ROCE
Source: Output of SPSS

The outcomes of these tests are presented in Table 3. To alleviate possible bias in the regression models caused by multicollinearity, this study includes multicollinearity tests. This is observed from the results that all Variance Inflation Factor (VIF) values are below 5, indicating that the selection of variables is sound, and multicollinearity is not a concern.

Diagnostic Tests

In this study to choose among the Pooled Ordinary Least Square (POLS) and Fixed Effect Model (FEM), Redundant Fixed Effects-Likelihood Ratio test has been applied and the result which suggested that as the p-value of cross-section F and cross-section chi-square is less than 0.05, so null hypothesis was rejected and hence Fixed Effect Model was selected with ROCE as dependent variable.

Table 4: Diagnostic Test Analysis

Redundant Fixed Effects-Likelihood Ratio test (F-Test)			
Effect Test	Statistics	d.f.	Prob.
Cross-section F	14.014914	(10,93)	0.0000
Cross-section Chi-Square	101.098674	10	0.0000
Hausman Test			
Test Summary	Chi.Sq. Statistics	Chi. Sq. d.f.	Prob.
Cross-section random	12.003330	6	0.0619

Source: Eviews 9 Software Output

Further, Hausman test was applied to choose among the Fixed Effect Model and Random Effect Model. The result of Hausman test denoted that the p-value is 0.0619. As the p-value exceeds the standard threshold of significance level of 0.05, there is no strong evidence to reject the null hypothesis in favor of the alternative, indicating that a random effects model could be appropriate.

Table 5: Regression Analysis

Variable	ROCE		
Model Selected	REM		
	Coefficient	t-statistics	Prob.
C	-45.35227	-3.047235	0.0029
CR	1.036896	0.480083	0.6322
DER	-2.798285	-0.986012	0.3264
FATR	0.266565	0.922820	0.3583
ITR	0.185250	1.003240	0.3181
TATR	5.633047	5.397675***	0.0000
SIZE	5.308194	3.511479***	0.0007
R^2	0.419379		
Adjusted R^2	0.385557		

Notes: *=significant at 10 per cent level; **=significant at 5 per cent level; ***=significant at 1 per cent level

Source: Eviews 9 Software Output

The intercept is -45.35227, which denotes the expected value of ROCE when all independent variables are zero. The t-statistics of -3.047235 and p-value of 0.0029 suggest that the intercept is statistically significant. The coefficient of Current Ratio is 1.036896, which states that one unit in the current ratio is associated with an increase of about 1.04 units in ROCE. The high p-value of 0.6322 indicates that the current ratio is not statistically significant in predicting ROCE. With a coefficient of -2.798285 Debt-to-Equity Ratio indicates that an increase in one unit in the debt-to-equity ratio corresponds to a decrease of about 2.80 units in ROCE. The p-value of 0.3264 suggests that this effect fails to reach statistical significance. The coefficient of FATR is 0.266565. The increase of one unit of FATR is associated with an increase of about 0.27 units of ROCE. The p-value of 0.3583 suggests that this effect is also not statistically significant. The Inventory Turnover Ratio with a coefficient of 0.185250 indicates an increase of about 0.19 units in ROCE with an increase in one unit of ITR. The p-value of 0.3181 denotes that this effect lacks statistical significance. However, the effect of Total Assets Turnover Ratio and Size are statistically significant. The value of R^2 (0.419379) signifies the amount of variance explained in the dependent variable (ROCE) that is clarified by the predictor variables in the model.

CONCLUSION AND SUGGESTION

The present study focuses on examining the influence of managerial efficiency on the performance of selected companies belonging to Capital Goods Sector listed on Bombay Stock Exchange. From the above discussion it is experienced that changes in CR, DER, FATR and ITR do not dependably forecast the changes in ROCE. However, an increase in the Total Assets Turnover and Size are connected with a considerable rise in ROCE. Therefore, in this study Random Effect Model suggests that Total Assets Turnover Ratio and Size are significant predictors of ROCE. Large companies with higher Total Assets Turnover Ratios tend to have higher ROCE. The other variables such as Fixed Assets Turnover Ratio, Debt Equity Ratio, Current Ratio, and Inventory Turnover Ratio are not statistically significant predictors of ROCE in this model. The model explains a moderate portion of the variation in ROCE.

Additional research concerning the effect of managerial efficiency on firm performance may include more research period which may expose some new research issues. In addition, further research may also include other control variables like risk variables, governance variables etc. This

study is based on the performance of capital goods sector as one segment, however, further research many include various industries such as power projects, electric equipment etc. belonging to the capital goods sector.

REFERENCES

Adesola, O. A., Isaac, A. A., & Oladipo, O. N. (2022). Effect of Financial Management Practices on Firm Performance of Selected Manufacturing Companies in Nigeria. *The 17th Edition of the International Conference European Integration Realities and Perspectives*, (pp. 150-162).

Alivia, N. R., & Chabachib, M. (2013). Analysis of Influencing Factors: The value of the Company with Profitability as an Intervening variable. *Journal of Management, 2*(2), 328-339.

Almumani, M. A. (2013, July). Impact of Managerial Factors on Commercial Banks Profitability: Empirical Evidence from Jordan. *International Journal of Academic Research in Accounting, Finance and Management Sciences, 3*(3), 298-310.

Amachree, R. M., & Iheanyi, I. H. (2020, Oct-Dec). Management Efficiency and Banks Performance. *International Journal of Innovative Finance and Economics Research, 8*(4), 13-20.

Arifiana, R., & Khalifaturofi ah, S. O. (2022, August). The effect of financial ratios in predicting financial distrress in manufacturing companies. *Jurnal Riset Bisnis Dan Manajemen, 15*(2), 103-108.

Baik, B., Chae, J., Choi, S., & Farber, D. B. (2013). Changes in operational efficiency and firm performance: A frontier analysis approach. *Contemporary Accounting Research*, 30(3), 996-1026.

Bama, I., Maksum, A., & Adnans, A. A. (2021, August). The Effect of Total Assets Turnover and Profitability on Firm Value with Good Corporate Governance as Moderating Variable in Food and Beverage Subsector Manufacturing Companies Listed on the IDX 2010-2019. *International Journal of Rersearch and Review, 8*(8), 559-567.

Barus, J. J., Muturi, W., Kibati, P., & Koima, J. (2017). Effect of management efficiency on financial performance of savings and credit societies in Kenya. *Journal of Strategic Management*, 2(1), 92-104.

Bhutta, A. I., Sheikh, M. F., Munir, A., Naz, A., & Saif, I. (2021). Managerial Ability and Firm Performance: Evidence from an Emerging Market. *Cogent Business and Management, 8*(1), 1-22. doi:https://doi.org/10.1080/23311975.2021.1879449

Binsaddig, R., Ali, A., Al-Alkawi, T., & Ali, B. J. (2022, March). Do activity ratios relate to gross profit margin? Evidence from communication sector in Bahrain. *International Journal of Economics and Finance Studies, 14*(4), 292-308.

Budiharjo, R. (2019). Effect of profitability, leverage, activity ratios, market ratios and environmental performance to share prices. *Scholars Bulletin*, 5(10), 585-592.

Cyert, R. M., & March, J. G. (1963). *A Behavioral Theory of the Firm.* Prentice-Hall, Englewood Cliffs, N.J.

Gerguri-Rashiti, S., Ramadani, V., Alili, A. H., Dana, L. P., & Ratten, V. (2015). ICT, Innovation and Firm Performance: The Transition Economies Context. *Thunderbird International Business Review, 59*(1), 93-102. doi:https://doi.org/ 10.1002/tie.21772

Hoang, L. T., Nguyen, C. C., & Hu, B. (2017). Ownership Structure and Firm Performance Improvement: Does It Matter in the Vietnamese Stock Market? *Economic Papers : A Journal of Applied Economics and Policy*, 416-428. doi:https://doi.org/10.1111/1759-3441.12185

Jacob, J., & Taslim, F. A. (2017, October). The Impacts of the Ratio of Liquidity, Activity and Profitability towards Company Value with Dividend Policy as Intervening variables. *IOSR Journal of Business and Management, 19*(10), 1-7.

Kumar, N., & Singh, J. P. (2013). Effect of board size and promoter ownership on firm value: some empirical findings from India. *Corporate Governance, 13*(1), 88-98. doi:https://doi.org//10.1108/147 20701311302431

McConnell, J. J., & Servaes, H. (1995). Equity ownership and the two faces of debt. *Journal of Financial Economics*, *39*(1), 131-157.

Meliani, S., Harnaen, Y. N., Saputra, Z., Mareta, F., & Paulina, E. (2021). The Effect of Liquidity Ratios, Solvency and Activities on Financial results as measured by ROE in Manufacturing Companies in the Food and Beverage Sub-sector listed on the IDX for the 2017-2019 Period. *1st ICEMAC 2020: International Conference on Economics, Management and Accounting*, 196-202. NST Proceedings.

Thompson, J. D. (2003). *Organizations in Action: Social Science Bases of Administrative Theory.* Transaction Publishers.

Utami, R. B., & Prasetiono. (2016). Analysis of effects of TATO, WCTO and DER aganist Company Value with ROA as an Intervening Variable. *Journal of Management, 5*(2), 105-118.