

Determinants of Financial Performance of Selected Listed Manufacturing Firms in India

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ISSN 2348-2869 Print

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Journal of General Management Research, Vol. 6, Issue 1, January 2019, pp. 78–89

Abstract

The study was to financially analyze the manufacturing sector of India and determine the reasons for the sector's slow growth. It was done by taking into consideration some dependent factors like ROA, ROCE, ROE and independent factors like capital structure, liquidity, firm size, and working capital. A sample size of 35 manufacturing sector firms listed on the BSE and NSE was taken. The time period of study was 2011-12 to 2016-17. Statistical tests that were applied were correlation, regression, sleekness and kurtosis. The results of the study revealed that independent factors significantly affected the financial performance of the firm. The capital structure and firm size affected the financial performance negatively; the liquidity and working capital affected the financial performance positively.

INTRODUCTION

There is absolutely no reason for a business to keep on running if it's not profitable or has no hopes of being profitable in the future. Now it becomes very important for businessmen/women to make sure that their business is profitable.

One of the most important factors to be taken into consideration is the finance of the organization. The financial needs of a business may vary due to size of the firm, sector in which it is operating, types of products and/or services it is providing to its consumers. Finance is the backbone of any business. If a business does not know how to manage its finances well then not matter how big a funding it gets, all will eventually be wasted without much benefit to the business. Thus, a business, at all times has to keep on analyzing its financials in order to make sure that the business is sound financially.

A high financial performance is an indicative of optimum use of resources – both financial and otherwise (Matar & Eneizen, 2018). Whereas, a low financial performance indicates an inefficient use of resources and inability of management to use the resources well. But when we look at financial performance of a company from a researching point of view, it is a dependent factor. This is because financial performance of a company is dependent on all the factors that affect the business be it internal or external. Internal factors affecting business's financial performance are: Management of the company, its ownership, Company size, etc. Whereas the external factors that affect a business which in turn affect its financial performance are: Political, Economical, Social, etc.

Numerous researches have been conducted in the past for finding for the determinants of financial performance. When we look at the factors internally, the factors in the finance department in the organization are not the only ones that affect its performance. There can be factors related to marketing department, human resource department, administrative department, operations department, logistics department, etc. Research papers talking

about the different factors and their effect on financial performance are discussed below in review of literature.

When the financial performance of a firm is to be determined we look at the profitability of the business, its solvency or liquidity, different types of turnovers, its capital structure. All these factors help to determine the financial performance of a business. Apart from that there are certain off beat factors that can be used to determine the financial performance like corporate social responsibility, firm size, organizational culture, no. of employees, market share, etc.

Out of these factors, the profitability of a business is the most famous method to determine the financial performance of a business. Profitability in turn can be determined by calculating a no. of financial ratios like ROA, ROCE and ROE. The objective of measuring profitability as a measure of financial performance is that the main objective of business is to earn profits for its shareholders (as discussed above). Thus, profitability means how much returns are being generated by investing the funds of the shareholders of a company.

Financial performance of a business in turn has an effect on various other arenas like the company's share price in the market, the dividend policy, the amount and kind of investment the company is eligible to get, scope of diversification, the amount of risk it should take, etc. This research study will talk about the financial determinants of the financial performance of manufacturing firms in India.

REVIEW OF LITERATURE

Ali et al. (2013) in his study suggested that important factors of the study were the

leverage, debt, risk, non-debt tax shield and tax shield in financial sector. A regression analysis and Housman's test was used. The results showed a positive relation between the above factors and the financial performance of the sector.

Sidra et al. (2013) in the study mentioned that the factors were financial performance of a firm, ownership structure, risk management, capital structure, correlation, regression, and Chi-square test and Hausmann test were used. The results were a positive relationship between a firm's performance and the like ownership structure, risk management, capital structure and certain other economic factors.

Das et al. (2017) mentioned that the factors used were the impact of brand value, employee productivity, marketing expenditure, Company size, working capital ratio, leverage, dividend payout ratio on the profitability of the firm. Correlation and regression analysis was used. The results were that brand value, marketing expense, size and dividend payout are positively related with profitability while leverage is negatively related.

Matar et al. (2018) in this study the dependent variable was ROA. A correlation and regression analysis was done. The independent variables were firm size, leverage, liquidity, revenue and profitability. The results revealed that while liquidity, revenue and profitability had a positive relation with the firm's performance; leverage and firms size had a negative relation.

Dey et al. (2015) the dependent variable was ROA and the independent variables were size, tangibility, underwriting risk, volume of capital, leverage, liquidity. The results revealed that while there was a positive relation of underwriting risk and size with financial performance, there was a negative relation

of the volume of capital and leverage with financial performance. There was a positive relation of liquidity with return on equity.

Mauwa et al. (2016) the study used correlation and regression. The results were that dividend policy, timely rendition and corporate governance had a positive influence over ROA whereas capital structure negatively affected ROE. The regression results indicated that the relationship between dividend policy and both ROA and ROE is positive and significant, the relationship between capital structure and both ROA and ROE is negative and significant, the relationship between corporate governance and both ROA and ROE is positive but the relationship between corporate governance and ROA is significant while corporate governance is insignificantly related to ROE and finally the relationship between timely rendition and both ROA and ROE is positive and insignificant.

Hecker et al. (2012) An Australian study indicated that not only financials of a firm affect the firm's performance but also non-financial factors like the adoption of a proactive corporate social responsibility strategy affects the firm's performance positively. The results showed that proactive CSR was actually linked to a firm's improvement in financial performance.

RESEARCH GAPS

On looking at the conceptual gaps are looked at, it is seen that these existed because none of the reviewed studies used all the variables taken in this study. All the studies used only one or two variables taken in this study. For example, in a study done by (Ali, Zahid, Shahid, & Nadeem, 2013) only leverage factor was common from this study. Only leverage was used to determine the financial

performance (Sidra & Javed, 2013). Also, used the capital ratio to analyze the financial performance.

Apart from this the research studies reviewed also showed contrasting results. For example the studies by (Ali, Zahid, Shahid, & Nadeem, 2013) and (Sidra & Javed, 2013) indicated that the capital structure has a positive impact on the financial performance of the firm where as the study conducted by (Matar & Eneizen, 2018), (Mauwa, 2016) and (Dey, Adhikari, & Bardhan, 2015) showed otherwise, i.e. negative impact of capital structure on financial performance.

The contextual research gaps also existed. The reason for this is that all these studies were conducted in different time periods. For example the studies by (Ali, Zahid, Shahid, & Nadeem, 2013) and (Das & Swain, 2017) were conducted from 2005. Apart from this the contextual gaps might have existed because of the difference in the sectors being chosen for the study. For example the study by (Ali, Zahid, Shahid, & Nadeem, 2013) was of a textile sector, (Das & Swain, 2017) took fifty 50 companies, the insurance sector was analyzed in the study by (Dey, Adhikari, & Bardhan, 2015).

OBJECTIVES THE STUDY

The objectives of the study are:

- The objective of this study is to analyze the profitability of manufacturing sector in India.
- To find out the determinants of financial performance of 35 publically traded companies in India.
- Determine the relationship between profitability and capital structure, firm size, liquidity and working capital.

SCOPE OF THE STUDY

The focus of this study was to determine the financial performance of 35 publically traded manufacturing firms in India. The scope for sample size could have been larger like taking all the Indian manufacturing firms. The time period of the study was 5 years, i.e. from 2011-12 to 2016-17. Although the time scope for this study can be vary vast up till 2005 as the data available in the internet is till this time only. In order to find out the factors determining the financial performance a lot of other factors both qualitative and quantitative could have been used.

Theoretical Framework

Financial performance of a firm is a subjective term and is something that has to be calculated or determined by looking at the data from the company's financial records. The various research studies that have been conducted had independent variables like Ownership structure, Capital structure, Organizational culture, Dividend payout, etc. Liquidity basically means the ability of a firm to pay off its short term liabilities as and when they arise from short term assets. It can also be called solvency. Firm size can be gauged by a taking into consideration a lot of parameters like: Total assets, Net premium, No. of employees, Funding, Cost of production, No. of business units, Value of Product, etc. Capital structure is the particular distribution of debt and equity that makes up the finances of the company

Hypothesis Design

The study looks to examine the following hypothesis:

I: ROA

- H₀₁ The capital structure of the firm does not significantly affect the ROA of the firms.
- H₀₂ The liquidity of the firm does not significantly affect the ROA of the firms.
- H₀₃ The Firm Size of the firm does not significantly affect the ROA of the firms.
- H₀₄ The Working Capital of the firm does not significantly affect the ROA of the firms.

II: ROE

- H₀₅ The capital structure of the firm's does not significantly affect the ROE of the firms.
- H₀₆ The Liquidity of the firms does not significantly affect the ROE of the firms.
- H₀₇ The Firm Size of the firms does not significantly affect the ROE of the firms.
- H₀₈ The working capital of the firms does not significantly affect the ROE of the firms.

III: ROCE

- H₀₉ The capital structure of the firms does not significantly affect the ROCE of the firms.
- H₁₀ The Liquidity of the firms does not significantly affect the ROCE of the firms.
- H₁₁ The Firm Size of the firms does not significantly affect the ROCE of the firms.
- H₁₂ The Working Capital of the firms does not significantly affect the ROCE of the firms.

Sources of Data

This study was based purely on data obtained from secondary sources. The data used for this study was secondary in nature thus it was obtained from different sources. The sources of the data used were: Annual reports of companies, Financial statement of companies, Research papers, Authenticated websites, Magazines, Newspapers

The population for this study is all the Indian companies engaged in the manufacturing of different goods and are listed on the Bombay Stock Exchange and the National stock Exchange as on 2018-19. This study does not include those firms that have ceased their operations or are not listed on the stock exchange.

DATA ANALYSIS AND PRESENTATIONS

The regression model used was as follows:

The equation to find out the link between the independent and dependent variable was

$$Y = K + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4$$

Where

Y= Financial performance

K = Constant

X₁ = Capital structure (CS)

X₂ = Liquidity (L)

X₃ = Firm Size (FS)

X₄ = Working capital turnover ratio (WC)

B₁, B₂, B₃ and B₄ are coefficients of the variables which are to be estimated in regression.

Descriptive Statistics

Skewness indicates how flat the data is. The values of data in consideration should lie between the range of +3 and -3. It can be positive or negative. In this research study all the data is positively skewed except for one variable (ROA). Also the data is within the range except for one variable (Firm Size).

Variance determines whether all the values in the data are close to the mean value or not. In the research study, all the variables are close to the mean value except for one variable (working capital ratio).

Table 2: Descriptive Statistics

	<i>RROA</i>	<i>ROE</i>	<i>ROCE</i>	<i>Debt to Equity Ratio</i>	<i>Current Ratio</i>	<i>Working Capital Ratio</i>
Mean	0.08	0.16	0.20	1.43	1.34	4.60
Standard Error	0.00	0.01	0.01	0.08	0.05	4.12
Median	0.07	0.15	0.16	1.15	1.18	3.67
Standard Deviation	0.09	0.24	0.23	1.19	0.75	59.83
Sample Variance	0.00	0.05	0.05	1.42	0.56	3580.44
Kurtosis	4.97	12.19	6.10	6.93	12.42	16.65
Skewness	-0.57	0.35	1.91	2.14	2.79	0.26
Range	0.80	2.71	1.59	7.86	5.61	677.62
Minimum	-0.47	-1.27	-0.27	0.07	0.23	-351.73
Maximum	0.32	1.41	1.31	7.93	5.84	325.89
Sum	17.85	35.69	42.36	301.62	281.58	966.80
Count	210	210	210	210	210	210

Correlation Analysis

Table 3: Correlation Analysis

	<i>ROA</i>	<i>ROE</i>	<i>ROCE</i>	<i>Debt to Equity Ratio</i>	<i>Current Ratio</i>	<i>Firm Size</i>	<i>Working Capital Ratio</i>
ROA	1						
ROE	0.83	1					
ROCE	0.85	0.90	1				
Debt to Equity Ratio	-0.30	-0.19	-0.15	1			
Current Ratio	0.24	0.10	0.10	-0.45	1		
Firm Size	-0.16	-0.12	-0.08	-0.18	0.27	1	
Working Capital Ratio	0.040	-0.00	0.02	-0.06	0.03	0.00	1

Regression Analysis

Regression of ROA

Table 4: Regression Analysis of ROA

	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	0.34	0.08	11.11	3.52739E-08
Residual	205	1.60	0.00		
Total	209	1.94			

Level of Significance = 0.05

This is the overall hypothesis of all the independent factors and ROA.

P-value = 3.52739E-08 < 0.05

Therefore we reject H_{0L} and thus accept H_{1L} .

(alternate) hypothesis which states that the independent factors significantly affect the ROA of the firms.

Table 5: Individual Regression Analysis with ROA

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.08	0.01	4.57	.000000823
Debt to Equity Ratio	-0.02	0.005	-3.70	0.0002
Current Ratio	0.02	0.009	2.75	0.006
Firm Size	0.00	0.00	-4.12	.0000054
Working Capital Ratio	.0000242	0.0001	0.23	0.81

Level of Significance = 0.05

This is the individual hypothesis of all the independent factors in relation to ROA.

The factors which significantly affect ROA are: Debt to Equity, Current ratio and Firm's Size.

- Debt to Equity
P-value = 0.0002 < 0.05
Therefore we reject H_{0A} and thus accept H_{1A} (alternate) hypothesis which states that the capital structure has a significant effect on the ROA of the Firms.
- Current Ratio
P-value = 0.0064 < 0.05
Therefore we reject H_{0B} and thus accept H_{1B} (alternate) hypothesis which states that the liquidity has a significant effect on the ROA of the Firms.
- Firms' Size
P-value = 5.40703E-05 < 0.05
Therefore we reject H_{0C} and accept H_{1C} (alternate) hypothesis which states that the firms' size has a significant effect on the ROA of the Firms.
- Working capital turnover ratio
P-value = 0.8130 > 0.05
Therefore we accept H_{0D} (Null) hypothesis which states that the Working capital turnover ratio does not have a significant effect on the ROA of the Firms.

$$Y = K + B_1X_1 + B_2X_2 + B_3X_3$$

$$ROA = 0.0855 - 0.0213(\text{Debt to Equity Ratio}) + 0.0257(\text{Current Ratio}) - 4.55307E-11(\text{Firm Size})$$

Table 6: Model summary of ROA

Regression Statistics	
Multiple R	0.42
R Square	0.17
Adjusted R Square	0.16
Standard Error	0.08
Observations	210

Adjusted R Square (R^2) = 0.1621 = 16.21%

Therefore Debt to Equity, Current Ratio, and Firm Size together explain 16.21% variation in ROA.

Regression of ROE

Table 7: Regression Analysis ROE

	Df	SS	MS	F	Significance F
Regression	4	0.83	0.20	3.74	0.005
Residual	205	11.49	0.05		
Total	209	12.33			

Level of Significance = 0.05

This is the overall hypothesis of all the independent factors and ROE

P-value = 0.0058 < 0.05

Therefore we reject H_{0M} and thus accept H_{1M} (alternate) hypothesis which states that the independent factors significantly affect the ROE of the firms.

Table 8: Individual Regression Analysis with ROE

	Coefficients	Standard Error	t Stat	P-value
Intercept	0.20	0.05	4.14	.00000501
Debt to Equity Ratio	-0.04	0.01	-2.60	0.009
Current Ratio	0.02	0.02	0.83	0.40
Firm Size	0.00	0.00	-2.54	0.01
Working Capital Ratio	-.0000937	0.0002	-0.34	0.73

Level of Significance = 0.05

This is the individual hypothesis of all the independent factors in relation to ROE.

The factors which significantly affect ROE are: Debt to Equity and Firm's Size.

- Debt to Equity
P-value = 0.0098 < 0.05
Therefore we reject H_{0P} and thus accept H_{1P} (alternate) hypothesis which states that the capital structure has a significant effect on the ROE of the Firms.

- Current Ratio
P-value = 0.4024 > 0.05
Therefore we accept H_{0Q}(Null) hypothesis which states that the liquidity does not have a significant effect on the ROE of the Firms.
- Firms' Size
P-value = 0.0116 < 0.05
Therefore we reject H_{0R} and thus accept H_{1R} (alternate) hypothesis which states that the firms' size has a significant effect on the ROE of the Firms.
- Working capital turnover ratio
P-value = 0.7328 > 0.05
Therefore we accept H_{0S}(Null) hypothesis which states that the Working capital turnover ratio does not have a significant effect on the ROE of the Firms.

$$Y = K + B_1X_1 + B_3X_3$$

$$ROE = 0.2075 - 0.0403 (\text{Debt to Equity Ratio}) - 7.5339E-11 (\text{Firm Size})$$

Table 9: ROE Model Summary

<i>Regression Statistics</i>	
Multiple R	0.26
R Square	0.06
Adjusted R Square	0.04
Standard Error	0.23
Observations	210

Adjusted R Square (R²) = 0.0498 = 4.98%

Therefore Debt to Equity and Firm Size together explain 4.98% variation in ROE.

Regression of ROCE

Table 10: Regression Analysis of ROCE

	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	0.46	0.11	2.23	0.06
Residual	205	10.74	0.05		
Total	209	11.21			

Level of Significance = 0.10

This is the overall hypothesis of all the independent factors and ROCE.

P-value = 0.0666 < 0.10

Therefore we reject H_{0N} and thus accept H_{1N} (alternate) hypothesis which states that the independent factors significantly affect the ROCE of the firms.

Table 11: Individual Regression with ROCE

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.21	0.04	4.44	1.46322E-05
Debt to Equity Ratio	-0.02	0.01	-1.85	0.06
Current Ratio	0.02	0.02	0.96	0.33
Firm Size	0.00	0.00	-1.83	0.06
Working Capital Ratio	0.00006	0.0002	0.23	0.81

Level of Significance = 0.10

This is the individual hypothesis of all the independent factors in relation to ROCE.

The factors which significantly affect ROCE are: Debt to Equity and Firm's Size.

- Debt to Equity
P-value = 0.0652 < 0.10
Therefore we reject H_{0W} and thus accept H_{1W} (alternate) hypothesis which states that the capital structure has a significant effect on the ROCE of the Firms.
- Current Ratio
P-value = 0.3358 > 0.10
Therefore we accept H_{0X} (Null) hypothesis which states that the liquidity does not have a significant effect on the ROCE of the Firms.
- Firms' Size
P-value = 0.0678 < 0.10
Therefore we reject H_{0Y} and thus accept H_{1Y} (alternate) hypothesis which states that the firms' size has a significant effect on the ROCE of the Firms.

- Working capital turnover ratio
P-value = 0.8160 > 0.10
Therefore we accept H_{0z} (Null) hypothesis which states that the Working capital turnover ratio does not have a significant effect on the ROCE of the Firms.

$$Y = K + B_1X_1 + B_3X_3$$

$$\text{ROCE} = 0.2150 - 0.0277 (\text{Debt to Equity Ratio}) - 5.2499E-11 (\text{Firm Size})$$

Table 12: ROCE Model Summary

<i>Regression Statistics</i>	
Multiple R	0.20
R Square	0.04
Adjusted R Square	0.02
Standard Error	0.22
Observations	210

$$\text{Adjusted R Square } (R^2) = 0.0230 = 2.30\%$$

Therefore Debt to Equity and Firm Size together explain 2.30% variation in ROCE.

The study revealed that overall the Independent factors have a significantly affect the financial performance of the firm. If we study the factors individually we do find certain different results which are as follows:

Capital Structure

The capital structure of the firms overall has a significant negative impact on the financial performance of the firm. The relation of Debt to equity with ROA, ROE is significant but weak and in ROCE strongly significant. Debt to equity is negatively but weakly correlated with ROE and ROCE whereas is moderately correlated with ROA. It implies that in case of ROA a huge increase in the debt of the firm will lead to a moderate decline in the returns on asset of the firm whereas as it will lead to only a slight decline in case of ROCE and ROE. Therefore overall we can say that according to our study if the debt of the firm

increase then the profits made by the firm would decline.

Liquidity

The liquidity of the firms overall has a significant impact on the profitability of the firms in the manufacturing sector of India. There is a weak but positive relation of the liquidity with the profitability of the manufacturing sector firms. The current ratio has a significant relationship with ROA but a non-significant one with ROCE and ROE. All the three factors are positively related with current ratio. This implies that if the liquidity of the companies increase by huge amounts then the ROA, ROE, ROCE of the firms will also increase but slightly. Overall this means that if the current assets of the firm will increase then the overall net profits will also increase.

Firm Size

Overall, the firms' size has a significant but negative relationship with the profitability of the firms. The firm size has a significant but weak relationship with the ROA. Moderately significant with ROE and significant and strong with ROCE. All three factors share a negative and weak correlation. These findings imply that if the companies try to expand then it will lead to a decline ROA, ROE, ROCE of the firms but slightly thus a decline in the asset efficiency. Therefore overall we can observe that increasing the firm size of the would lead to a slight decline in the overall profitability of the firm. This is contrary to the popular notion that if the firm expands then it increases its profits.

Working Capital Turnover

In the research study it was found that the working capital turnover has a majorly

positive and significant relationship with the profitability of the firm. The relationship of working capital turnover with the ROA of the firms is a weak, with ROE is none and with ROCE is strong. All three factors share a weak but positive relationship. This means that if the working capital of the firm increases then the ROA, ROCE and ROE will also increase but slightly.

CONCLUSIONS OF THE STUDY

The results show that debt to equity (capital structure), current ratio (liquidity) and firm size are the factors which significantly affect the return on assets of the firms. The coefficient of debt to equity is 0.0213, of current ratio is 0.025 and of firm size is 4.55308E-11. Overall 16.21% variations in return on assets is because of the above three factors significantly affecting the ROA.

The factors significantly affecting the return on equity of the firms are debt to equity (capital structure), and firm size. The coefficient of debt to equity is 0.2075 and of firm size is 7.5339E-11. Overall 4.98% variations in return on equity is because of the above two factors significantly affecting the ROE.

The factors significantly affecting the return on Capital employed of the firms are debt to equity (capital structure), and firm size. The coefficient of debt to equity is 0.0277 and of firm size is 5.25002E-11. Overall 2.30% variations in return on Capital employed is because of the above two factors significantly affecting the ROCE.

RECOMMENDATIONS FROM THE STUDY

The manufacturing sector firms should keep their capital structure in check and not increase the quantum of debt much. Thus the

companies can raise equity from the general public but should not increase the debt structure of the firms. The manufacturing sector firms should increase their liquidity in order to increase their profits. This would mean that the firms should either keep a strict check on their current liabilities or increase their current assets gradually. This would have a slight but positive impact the profitability. The manufacturing sector firms are advised to not increase their firm size very fast and use their current resources efficiently before increasing the firm size. The study suggests that the companies should first increase their asset efficiency and then when they are using their existing resources optimally then they should plan to gradually increase the firm size meaning the total assets of the firm. The companies should increase their working capital as it will lead to an increase in sales leading to increase in profits. This means that if the manufacturing sector firms increase their working capital then it will lead to a slight but positive impact on overall profitability of the firms.

If we look at the manufacturing sector through this study it can be suggested that as manufacturing sector holds so much important to the development of the country it should keep a vigilant check on its financials and constantly improve upon their process and technology in order to reduce the cost of production, increase sales and thus earn more profits which in turn would add to the GDP of the country. We would also recommend the government to keep investing in the manufacturing sector in order to develop it. Apart from that the government can also reduce the tax slabs on the manufacturing sector relating to import duties, quotas, income tax, GST rebates etc. the make in India initiative has not proven to be very

useful for the country, thus we would suggest the government to also revise the strategies under it so that the manufacturing sector of the country can be given a boost.

LIMITATIONS OF THIS STUDY

The constraints to this study are as follows:

- The data collected was from the company's websites.
- As per Morgan's table for sample size when the level of significance taken is 5% and the population is 5000 then the sample size taken should be 357 but due to the limitation of time and data available we could not take this big a sample size. We have taken a sample size of 35 Indian manufacturing firms listed on NSE and BSE.
- The sample being taken is for the whole manufacturing sector. There are different arenas within the manufacturing sector which when analyzed individually might show different results.
- Other variables could have been used to check the financial performance operational efficiency, corporate governance, marketing expenses, employee costs, etc.

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