
ANALYTICS REPORT

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Introduction

This article contains a data analysis of the elements that influence Earnings per Share (EPS) in a financial setting. The analysis sought to determine the effect of three independent factors on EPS: Earnings Before Tax (EBT), Operating Margin (OM), and Pre-Tax Margin (PTM). The major goal was to help analysts of finance, investors, and stakeholders understand the connections among these variables and EPS to make informed decisions. The findings revealed that EBT and OM have a significant impact on EPS, but Pre-Tax Margin has a little impact. Multiple hypothesis tests were used in the analysis to determine the significance of the independent variables, with the joint significance test evaluating if the combination of factors had a significant impact on EPS. The findings shed light on the linkages and implications of various financial variables on a company's earnings per share.

Data Analysis

Population Regression Equation

$$\text{Earning per share} = \beta_0 + \beta_1 EBT + \beta_2 OM + \beta_3 PTM + \varepsilon$$

Estimated Sample Regression Equation

$$\widehat{\text{Earning per share}} = 4.22 + 2.14E-10(EBT) + 0.06(OM) + 0.009(PTM)$$

Fit of the Model

The $R^2 = 0.1963$ tells us 19.63% of the way toward perfectly predicting Earning per share using this model.

The standard error of 4.2674 tells us our prediction of Earnings per share are off by an average of \$4.2674 Dollars per share.

Test of Joint Significance

H_0 : None of them independent variable significantly impacts Earnings per share.

H_A : Atleast of them independent variable significantly impacts Earnings per share.

Because the P-value = $2.72E-71$ is less than the significance level of 0.05, we can reject the null hypothesis and can conclude that at least one of the independent variables significantly impacts Earning per share.

Earnings Before Tax Individual Significance Test

H_0 : Earning Before Tax does not significantly impact Earning per share.

H_A : Earning Before Tax significantly impacts Earning per share.

Because the P-value = $1.20E-29$ is less than the significance level of 0.05, we can reject the null hypothesis and can conclude that Earning Before Tax significantly impacts Earning per share.

As, Earning Before Tax increases by \$1 billion, Earning per share Increases by \$0.21/per share, on average and all else constant.

Operating Margin Individual Significance Test

H_0 : Operating Margin does not significantly impact Earning per share.

H_A : Operating Margin significantly impact Earning per share.

Because the P-value = $7.55E-09$ is less than the significance level of 0.05, we can reject the null hypothesis and can conclude that Operating Margin significantly impacts Earning per share.

As, Operating Margin increases by 1 percentage point, earning per share decreases by 0.066 percentage point /per share, on average and all else constant.

Pre-Tax Margin Individual Significance Test

H_0 : Pre-Tax Margin does not significantly impact Earning per share.

H_A : Pre-Tax Margin significantly impact Earning per share.

Because the P-value = 0.3736 is less than the significance level of 0.05, we can reject the null hypothesis and can conclude that Pre-Tax Margin significantly impacts Earning per share.

As, Pre-Tax Margin increases by 1 percentage point, earning per share decreases by 0.0095 percentage point /per share, on average and all else constant.

Recommendation

According to the data study, organizations should focus on increasing profits before taxes (EBT) in order to raise EPS. They should also exercise caution when managing operating margins, pay close attention to pre-tax margin, and constantly review and change their financial strategy. They should also investigate other issues and seek advice from financial specialists for specific insights.

Conclusion

By analyzing the link between several independent factors, the model estimates earnings per share. The R^2 number is 0.1963, showing a 19.63% prediction accuracy for earnings per share. The standard error is 4.2674, implying a \$4.2674 average error per share. Earnings per share are significantly impacted by the test of joint significance, earnings before tax, operating margin, and pre-tax margin. The P-value is less

than 0.05, indicating that at least one independent variable has a substantial impact on earnings per share. The results indicate that the model predicts earnings per share accurately.

Appendix

Figure 1 - Regression Output Predicting Earnings per Share

SUMMARY OUTPUT						
Regression Statistics						
Multiple R	0.443067128					
R Square	0.19630848					
Adjusted R Square	0.194712799					
Standard Error	4.267457065					
Observations	1515					
ANOVA						
	df	SS	MS	F	Significance F	
Regression	3	6721.287298	2240.429099	123.0248613	2.71931E-71	
Residual	1511	27517.10779	18.2111898			
Total	1514	34238.39509				
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	4.216847277	0.158684788	26.57373355	5.5491E-128	3.905581476	4.528113078
Earnings Before Tax	2.13558E-10	1.84848E-11	11.55316904	1.20202E-29	1.773E-10	2.49817E-10
Operating Margin	-0.066096552	0.011374101	-5.811145104	7.55446E-09	-0.088407252	-0.043785852
Pre-Tax Margin	-0.009593581	0.010779799	-0.889959132	0.373629501	-0.030738537	0.011551375
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