

CONCORDIA UNIVERSITY
Department of Economics
ECON 222 Statistical Methods II
Fall 2013-2014
Instructor: Mesbah F. Sharaf

Practice Midterm Exam 1

The following table comes from a multiple regression model that was run on Excel. A manufacturer wants to explain (predict) the monthly sales on the basis of the number of ads placed in monthly magazines and the interest rate charged on credit customers.

SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.8959
R Square	
Adjusted R Square	
Standard Error	
Observations	28

ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>
Regression			185.006	
Residual				
Total				

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept		6.1515		0.0002		40.0293
Number of Ads	0.0337		3.5918	0.0014	0.0144	0.0530
Interest Rate on Credit		0.3286	-3.7682	0.0009	-1.9151	

- 1) Fill the blanks in the table.
- 2) Interpret the estimated coefficients.
- 3) Briefly explain what the calculated value of R^2 and the adjusted coefficient of determination means.
- 4) Develop and test appropriate hypotheses about the individual slope coefficients at the 5% significance level.
- 5) Develop and test an appropriate hypothesis about the overall fit of the model at the 5% significance level.
- 6) Construct a 5% confidence interval estimate of the true β_1 and β_2 coefficients and interpret it.
- 7) Which of the two explanatory variables has more effect on the dependant variable? and why?
- 8) Suppose that all the Classical Assumptions hold. Does this mean that the true (marginal) effect of the number of Ads on sales is 0.0337 (i.e. the population parameter is 0.0337)?