

國立高雄第一科技大學 101 學年度 碩士班 招生考試 試題紙

系所別：財務管理系

組別：不分組

考科代碼：1441

考科：統計學

注意事項：

- 1、本科目得使用本校提供之電子計算器。
- 2、請於答案卷上規定之範圍作答，違者該題不予計分。

1. 求出下列機率分配之 $E(x)$ ：
 - a. $f(x) = e^{-x}$, $0 < x < 1$ (15%)
 - b. $f(x) = 1/x^2$, $1 < x < e$ (15%)
2. 已知迴歸模型設定為 $y = \beta_0 + \beta_1 x + \varepsilon$, 請同時利用最小平方法及 Cramer's rule 求出的估計式。(20%)

3. Given a partial ANOVA table as follow:

Source	Sum of Squares	df	Mean Square	F
Treatment		2		
Error			20	
Total	400	8		

Answer the following questions by using the 0.05 significance level.

- a. How many treatments are there? (5%)
- b. What is the total sample size? (5%)
- c. What is the critical value of F ? (5%)
- d. What is your conclusion regarding the null hypothesis? (5%)

(Note: $F_{3,7} = 4.35$, $F_{7,3} = 8.89$, $F_{2,6} = 5.14$, $F_{6,2} = 19.3$)

4. The basic methodology used by academics for measuring exchange rate exposure is to use a simple linear regression of stock returns on the innovation in an exchange rate variable. Suppose we have the regression specification:

$$R_{jt} = \alpha_j + \beta_j R_{Mt} + \delta R_{FXt} + \varepsilon_{jt}$$

with R_{jt} , R_{Mt} and R_{FXt} denoting the stock return, the return on the market index, and the change in the exchange rate variable (index), respectively. Below is the output from a Taiwanese firm.

Dependent Variable: Y

Method: Least Squares

Date: 02/16/12 Time: 10:57

Sample(adj): 1 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	2.527	2.695	0.937	0.353
C(2)	-0.029	1.956	-0.014	0.988
C(3)	83.827	18.520	4.526	0.000
R-squared	0.295	Mean dependent var		4.397
Adjusted R-squared	0.266	S.D. dependent var		22.342
S.E. of regression	19.138	Akaike info criterion		8.797
Sum squared resid	179 48.010	Schwarz criterion		8.909
Log likelihood	-225.728	F-statistic		10.252
Durbin-Watson stat	1.996	Prob(F-statistic)		0.000

Please point out the statistics to answer the following questions:

- Does this linear model fit? (10%)
- How many percent of the variation in R_{jt} that is explained by the variation in both R_{Mt} and R_{FXt} ? (10%)
- Does the exchange rate exposure exist for this firm? (10%)