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DOON UNIVERSITY, DEHRADUN
Semester Mid Term Examination, even Semester, 2017
School of social science
M.Sc. (Economics) 8th Semester
Course: SSEI-522-Advanced Econometrics

Time Allowed: 2Hours ***Maximum Marks: 30***

Section A: attempt any two

1. Define 2 Stages least square and discuss the nature of instrument variables. 5 marks
2. Explain the consequences of measurement error in existing variables. 5 marks
3.

Model 1: TSLS, using observations 1955-1973 (T = 19)
Dependent variable: y
Instrumented: x1
Instruments: const t

	Coefficient	*Std. Error*	*Z*	*p-value*	
Const	−206.983	20.516	−10.0889	<0.0001	***
x1	3.80706	0.184674	20.6150	<0.0001	***

Mean dependent var	209.7895	S.D. dependent var	76.00846
Sum squared resid	3934.173	S.E. of regression	15.21256
R-squared	0.965309	Adjusted R-squared	0.963269
F(1, 17)	424.9792	P-value(F)	1.82e-13
Log-likelihood	−150.6091	Akaike criterion	305.2182
Schwarz criterion	307.1071	Hannan-Quinn	305.5379
Rho	0.229052	Durbin-Watson	1.264757

Hausman test -
Null hypothesis: OLS estimates are consistent
Asymptotic test statistic: Chi-square(1) = 34.4731
with p-value = 4.32182e-009
Weak instrument test -
First-stage F-statistic (1, 17) = 121.039

Critical values for desired TSLS maximal size, when running

tests at a nominal 5% significance level:

size	10%	15%	20%	25%
value	16.38	8.96	6.66	5.53

Maximal size is probably less than 10%

Interpret the result about instrument variables. 5 marks

Section B: Attempt both questions, there is no choice

1. What are simultaneous equations and discuss the consequences of simultaneous equation 5 marks

2. Discuss about the omitted variable bias and what are the causes of omitted variable biasness? 5 marks

Section C: Attempt any two

1. What is linearity in regression model why it is assumed? Justify your answer with suitable example. 5 marks
2. Estimate the instrument estimators. 5 marks
3. Discuss the methods to overcome the problem of error in variables. 5 marks