



MACHAKOS UNIVERSITY

University Examinations for 2016/2017

SCHOOL OF BUSINESS AND ECONOMICS

DEPARTMENT OF ECONOMICS

FOURTH YEAR FIRST SEMESTER EXAMINATIONS FOR DEGREE IN
BACHELOR OF COMMERCE

BMS 404: ECONOMETRIC MODELLING AND METHODS

DATE: 6/6/2017

TIME: 11:00 – 1:00 PM

INSTRUCTIONS:

Answer question **ONE** and any other two questions

QUESTION ONE (COMPULSORY 30 MARKS)

- a) Define a model and why is it necessary to abstract from reality. (3 marks)
- b) Discuss the critical features of a model. (5 marks)
- c) Model validity is an important issue in modelling and it involves comparing model output to system output. What are the various views of model validity. (6 marks)
- d) State some uses to which economic modeling can be put to (5 marks)
- e) What is Ordinary Least Square (OLS) and explain why it is the most preferred estimator (8 marks)
- f) Differentiate between time series and cross-sectional data (3 marks)

QUESTION TWO (20MARKS)

Make brief notes on the following economic models

- a) The World bank revised minimum standard model. (5 marks)
- b) The IMF financial programming model. (5 marks)
- c) The Threshold -21 model by the millennium institute (5 marks)
- d) The KIPPRA treasury macro model. (5 marks)

QUESTION THREE (20 MARKS)

- a) Discuss the various types of economic models. (10 marks)
- b) Outline the steps in economic modelling. (10 marks)

QUESTION FOUR (20 MARKS)

- a) Write brief notes under the following topics on Eviews.
- i) Creating work file (1 mark)
 - ii) Verifying data. (1 mark)
 - iii) Obtaining summary statistics. (1 mark)
 - iv) Running a simple regression model. (2 marks)
- b) Charity and Juddy modelled a relationship between Kenya's economic growth measured by Gross Domestic product (gdp) and specific explanatory variables namely inflation (inf), value of agriculture (agr) and tax. They ran the regression using stata software and obtained the following results.

reg gdp inf agr tax

Source	SS	Degree of freedom	MS	Number of observation	= 36
				F(3, 32)	= 5.01
Model	60.5	3	20.2	Prob > F	= 0.0058
Residual	a	32	c	R-squared	= 0.79
Total	189.3	b	5.4	Adj R-squared	= 0.78
				Root MSE	= 2.0067
gdp	Coefficient	Standard Error.	t	p	[95% Confidence Interval]
inf	-0.13	0.04	-3.39	0.002	-0.21-0.05
agr	-0.29	0.14	-2.03	0.051	-0.56-0.000833
tax	-0.13	0.10	-1.21	0.235	-0.34-0.086
constant	15.87	5.21	3.05	0.005	5.27-26.49

Required:

Find the values of a, b, c and provide an exhaustive interpretation of the results. (15 marks)

QUESTION FIVE (20 MARKS)

- a) Before a modeler run an OLS regression, data must satisfy some assumptions. Briefly discuss these assumptions. (6 marks)
- b) Differentiate between stationary and non-stationary series. (6 marks)
- c) What problems can one encounter when using non-stationary time series data to carry-out estimations? (4 marks)
- d) Explain the elements of a model. (4marks)