



**HERBERT CHITEPO SCHOOL OF LAW AND BUSINESS SCIENCES**  
**DEPARTMENT OF ECONOMICS AND FINANCE**  
**MAIN EXAMINATION**

**BACHELOR OF COMMERCE DEGREE**

**PART 4 SEMESTER 1**

**ECONOMETRICS 2/FINANCIAL ECONOMETRICS 2**

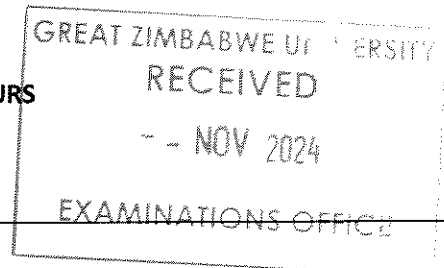
**HEC412/HEF415**

**DATE**

**2024**

**DURATION**

**3 HOURS**



***INSTRUCTIONS TO CANDIDATES***

- 1. Answer any four questions*
- 2. All questions carry equal marks*
- 3. Start each answer on a fresh page*
- 4. Show all workings, where applicable*

**QUESTION 1**

- (a) Differentiate between a random walk and a stationary time series. [6 marks]
  - (b) Explain the importance of the error term in a model. [7 marks]
  - (c) Explain how Ramsey RESET test is used to test for specification errors in regression analysis. [12 marks]
- [Total 25 marks]**

**QUESTION 2**

- (a) Explain what is meant by identification problem. [5 marks]
- (b) Given the model

$$C_t = \beta_0 + \beta_1 Y_t + \mu_t \dots \dots \dots 0 < \beta_1 < 1$$

$$Y_t = C_t + I_t (= S_t)$$

Where *C* is consumption; *Y* is income; *I* is investment and *S* is savings

- (i) Identify the exogenous and endogenous variables. [4 marks]
  - (ii) Prove that the reduced form equations are  $Y_t = \Pi_0 + \Pi_1 I_t + w_t$  and  $C_t = \Pi_2 + \Pi_3 I_t + w_t$  respectively. [10 marks]
  - (iii) If in the preceding model, investment expenditure is increased by \$1 and marginal propensity to consume (MPC) is assumed to be 0.8 calculate  $\Pi_1$  and interpret the results. [6 marks]
- [Total 25 marks]**

**QUESTION 3**

Given the following demand and supply model;

$$Q_t = \alpha_0 + \alpha_1 P_t + \alpha_2 I_t + \mu_{1t} \dots \dots \dots \alpha_1 < 0, \alpha_2 > 0 \dots \dots \dots 1$$

$$Q_t = \beta_0 + \beta_1 P_t + \beta_2 P_{t-1} + \mu_{2t} \dots \dots \dots \beta_1 > 0, \beta_2 > 0 \dots \dots \dots 2$$

where Equation 1 is the demand function

Equation 2 is the supply function

*Q* is quantity

*I* is income

*P* is price

$\mu$  is error term