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Strathmore
UNIVERSITY

SCHOOL OF FINANCE AND APPLIED ECONOMICS

BBS FIN/ FINANCIAL ECONOMICS

END OF SEMESTER EXAMINATION
MACROECONOMICS II: BSE 2208

DATE: 7th November 2016   Time: 2 Hours

Instructions
1.   This examination consists of **FIVE** questions.
2.   Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

Question One (30 Marks)

(a) Consider a closed economy described by the following equations:

$$Y = C + I + G$$
$$Y = 8,000$$
$$T = 2,000$$
$$G = 2,500$$
$$C = 1000 + \frac{2}{3}[Y - T]$$
$$I = 1,200 - 100r$$

   i.   In this economy, compute private saving, public saving, and national savings

                                                                                                    (6 marks)
   ii.   Find the equilibrium interest rate   **(2 marks)**

(b) Suppose the Kenyan government in a bid to increase tax revenue introduces a 2 shillings tax on checks written on bank account deposits;
   1) Explain how this check tax will affect the currency-deposit ratio   **(2 marks)**

   2) Using a simple model of money supply under fractional-reserve banking discuss how this tax will affect money supply   **(3 marks)**

(c) You read in an economist magazine that the nominal interest rate is 12 percent per year in country F (foreign country) and 8 percent per year in country H (home country). Suppose that the real interest rates are equalized in the two countries and that purchasing-power parity holds. Using the Fisher equation, what can you infer about expected inflation in country F and in country H respectively?   **(4   Marks)**

(d) Briefly explain the Ricardian view of government debt   **(4 Marks)**

(e) Use the IS-LM diagram to describe the short run effects of the following changes on national income, interest rate, the price level, consumption, investment, and real money balances.

     i.   An increase in the money supply   **(3 marks)**

     ii.   An increase in taxes   **(3 marks)**

(f) Briefly explain the random-walk hypothesis of consumption   **(3 marks)**

Question Two (20 Marks)

(a) Consider an economy with the following data:

$C = 125 + 0.75(Y - T)$

$I = 200 - 10r$

$T = 100$

$M = 800$

$L(Y, r) = 0.8Y - 16r$

Please note that government purchases and initial price level are some constant P and G, respectively. Exports are equal to imports. Assume that the full-employment level of output equals $1,600$.

     i.   Derive the *IS* curve, express r as a function of Y. what is the slope dr/dY?   **(3 marks)**

     ii.   Derive *LM* curve, express r as a function of Y. what is the slope dr/dY?   **(3 marks)**

     iii.   Calculate the short-run equilibrium for this economy. Assume $G = 150$ and $P = 1$ **(3 marks).**

     iv.   Find also the long-run equilibrium (when $G = 250$), given that the full employment level of output is equal to 1600. Report the levels of real GDP, interest rate, price level, consumption and investment. **(3 marks)**

(b) Explain what is meant by concept of the "impossible trinity" and why it is accurate?

               (8 marks)

Question Three (20 marks)

(a) Consider the following Neoclassical model of the economy, where r is in percentage terms.

Supply	Demand
	$C = 100 + 0.8(Y - T)$
	$I = 50 - 2r$
$Y = F(K, L) = 10\sqrt{KL}$	$G = 100$
$K = 100; L = 64$	$T = 100$
	$NX = 0$

(i) What is the level of GDP in the economy? How much of national income goes to worker and how much goes to the owners of capital? **(5 marks)**

(ii) Find the interest rate that produces equilibrium in the goods market. Use a demand-supply diagram (with r on the vertical axis) to show how the equilibrium interest rate would change in response to a government tax cut policy. **(5 marks)**

(iii) Assume the tax decrease in part (ii) decreases taxes to $T = 90$. Find the new equilibrium interest rate and show that this new interest rate clears the market for loanable funds (i.e. causes national saving to equal investment). **(4 marks)**

(b) Explain whether borrowing constraints increase or decrease the potency of fiscal policy to influence aggregate demand in each of the following cases.

    i. A temporary tax cut **(3 marks)**

    ii. An announced future tax cut **(3 marks)**

Question Four (20 Marks)

(a) The Mundell-Fleming model takes the world interest rate r^* as an exogenous variable. Let's consider what happens when this variable changes.

    i. What might cause the world interest to rise? Hint: The world is a closed economy) **(2 marks)**

    ii. In the Mundell-Fleming model with a floating exchange rate, what happens to aggregate income, the exchange rate, and the trade balance when the world interest rate rises? Illustrate your answer with a well labeled graph.

    (6 marks)

    iii. In the Mundell-Fleming model with a fixed exchange rate, what happens to aggregate income, the exchange rate, and the trade balance when the world interest rate rises? Illustrate your answer with a well labelled graph

    (6 Marks).

(c) Suppose the money demand function takes the form

$$\left(M/P\right)^d = L(i,Y) = Y/(5i)$$

Where $Y \& i$ refer to income and interest rate respectively.

    i. If output grows at rate g, at what rate will the demand for real balances grow (assuming constant nominal interest rates)? **(2 marks)**

    ii. What is the velocity of money in this economy? **(4 marks)**

Question Five (20 Marks)

(a) Describe four problems affecting measurement of the government budget deficit.

(12 marks)

(b) Consider a simple 2-period endowment economy. A representative household receives an exogenous income of Y_1 in period 1, and Y_2 in period 2. Suppose the interest rate, r, is exogenous.

i. Suppose the household's preferences are described by the utility function

$$U(C_1, C_2) = C_1 + C_2$$

Depict the household's optimal consumption/savings plan in a graph with C1 on the horizontal axis, and C2 on the vertical axis. Without doing any math, what is the optimal decision if $r > 0$? what is the optimal plan if $r = 0$? illustrate your answers with a graph, and explain the intuition. **(3 marks)**

ii. Now suppose that preferences are described by the following utility function

$$U(C_1, C_2) = \ln(C_1) + \ln(C_2)$$

Write down the household's first order optimality condition. Find the household's optimal choices of C1 and C2. What happens to saving when interest rate rises? **(5 marks)**