ECON 3560/5040
Homework #8 (Answers)

Last Name:______________________, First Name:______________________

(1) [14 points] **The IS-LM Model**

Assume the following model of the closed economy, with the price level fixed at 1.0:

$C = 0.5(Y - T)$
$T = 1,000$
$I = 1,500 - 250r$
$G = 1,500$
$M^d/P = 0.5Y - 500r$
$M^s = 1,000$

(a) [4 points] Write a numerical formula for the IS curve, showing Y as a function of r alone [Hint: Substitute out C, I, G, and T]

$IS : Y = -500r + 5000$

(b) [4 points] Write a numerical formula for the LM curve, showing Y as a function of r alone [Hint: Substitute out M/P)]

$LM : Y = 1000r + 2000$

(c) [3 points] What are the short-run equilibrium values of Y, r, and national saving?

$Y = 4000,\ r = 2,\ S = 1000$

(d) [3 points] You are the chief economic adviser in this hypothetical economy. Do you believe that fiscal policy is more potent than monetary policy? Briefly discuss [Hint: Use the slope of IS and LM curve in (a) and (b)]

Since the IS curve is steeper than the LM curve, fiscal policy is relatively more effective than monetary policy

(2) [6 points] **IS-LM in the Long Run**

Assume that the economy is initially in short-run equilibrium at a level of output above the natural rate. Use the $IS - LM$ model to illustrate graphically how the levels of income (Y) and interest rate (r) change as the economy returns to the natural rate of output ($\overline{Y}$) in the long run

Prices increase reducing real money balances, resulting in lower output and a higher interest rate

(3) [10 points] **Working with Macroeconomic Data**

For data to use in this exercise, go to the Federal Reserve Bank of St. Louis FRED database at *research.stlouisfed.org/fred*. Keynesian theory predicts that expansionary fiscal policy−either higher spending or lower taxes−will raise the real interest rate. Using data since 1960, graph the federal government budget deficit (Series ID: FYFSD) relative to GDP and the real interest rate (three-month Treasury bill rate minus the CPI inflation rate over the preceding twelve-month period). Do you see a link between deficits and real interest rates? In what period does the relationship seem clearest?

See attached figure

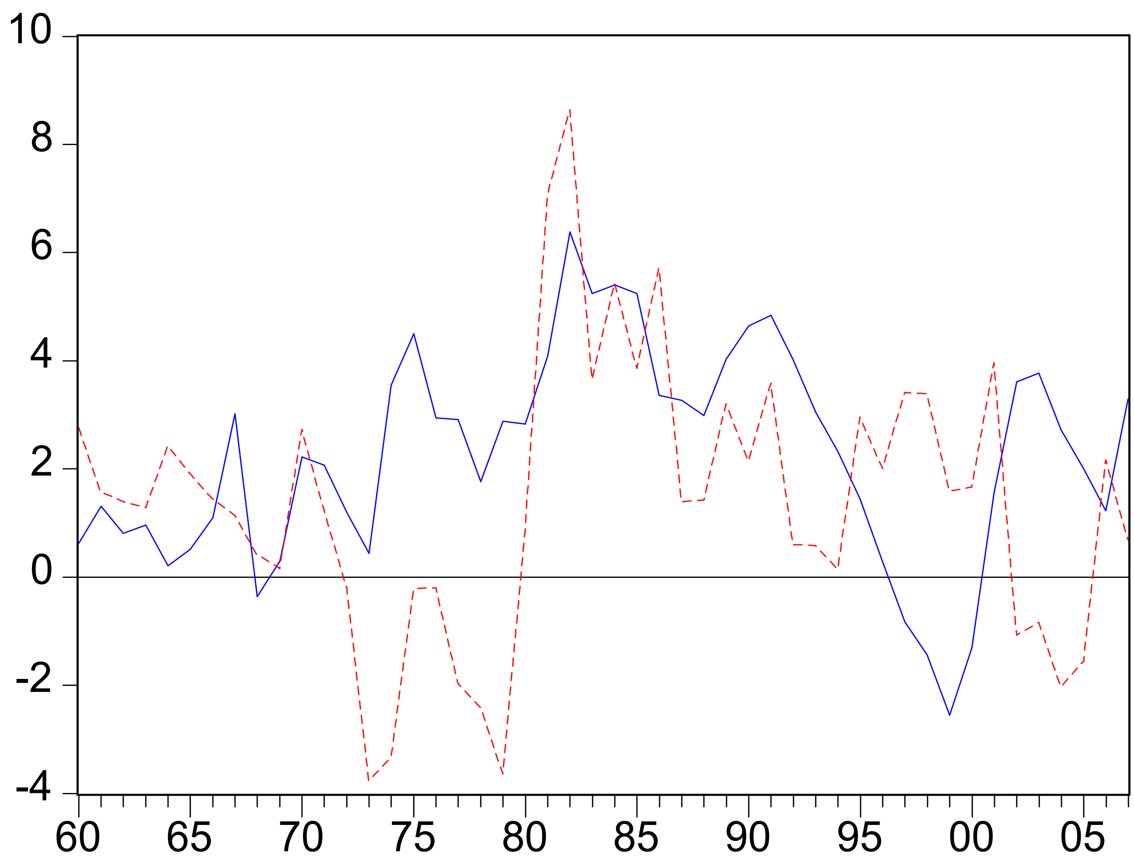

Figure 1: Government Budget Deficit Relative to GDP (solid line) and Real Interest Rate (dotted line), 1960-2007