

Homework 4
Economics 101 - Chapters 10 and part of Chapter 11
Due 11-18-09 in class

- 1) Keynesian Multipliers: Suppose the president would like to stimulate the level of output in the economy by introducing a tax cut. However, he also would like to keep a balanced budget if possible. Let's consider if these two objectives can be consistent with each other. Assume a consumption function $C = 100 + 0.75(Y-T)$, and let $G = 100$, $T = 100$, $I = 100$ (investment is not a function here of the interest rate).
- First, suppose there is just a tax cut alone, lowering T from 100 to 90. Use the Keynesian multipliers to compute the change in output. Compute also the effect on government saving. Will the president be satisfied (did he get a rise in output and a balanced government budget)?
 - Now suppose he combines the tax cut with spending cuts to keep the budget balanced. So supposed taxes and government spending both are cut from 100 to 90. What is the effect on government saving and output? Will the president be satisfied?
 - Now suppose that the president instead uses a rise in government purchases to stimulate the economy, and then raises taxes to pay for these purchases. In particular, suppose government purchases and taxes both are raised from 100 to 130. Compute the effects on output and government saving. Will the president be satisfied now? Explain how this result is possible and why it is so different from the result in part (b) above.
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- 2) Deriving the IS-LM model: Assume an economy is characterized in the short run by the following set of equations, with the price level fixed at 1.0 (SRAS is $P = 1$):

$C = 0.8(Y-T)$	$T = 1000$
$I = 800 - d r$, where $d=20$	$(M/P)^d = eY - f r$, where $e=0.4$, $f=40$
$G = 1000$	$(M/P)^s = 1,200$
(Use the SRAS curve: $P=1$).	

Where C is consumption, I investment, G government purchases, T taxes, P price level, and $(M/P)^d$ real money demand.

- Write a formula for the IS curve, expressing r as a function of Y . Graph it.
- If firms did not care at all about the interest rate when making investment expenditure plans (such as if $d=0$), how would this affect the slope of the IS curve?
- Write a formula for the LM curve expressing r as a function of Y . Graph it.
- If people did not care at all about their income level when deciding how much money to hold (if $e=0$), what would be the slope of the LM curve?
- What are the short-run equilibrium values for GDP, real interest rate, consumption, and investment in the economy described by the equations in the box above?
- Suppose that the Fed stimulates the economy by raising the money supply by 200. By how much will Y increase in the short-run equilibrium? Illustrate this with a graph of the IS-LM curves. What happens to investment (rise, fall, no change; explain why)? What happens to consumption?
- Discuss how the impact on Y in part (f) depends on the value of the parameter d , which summarizes the responsiveness of investment expenditure to the interest rate.

3) Suppose Congress passes a law for a permanent tax cut.

- a) Draw the IS-LM and AS-AD graphs to show the short run and long run equilibria following this permanent tax cut.
(Assume that prices are completely fixed in the short run, consumption just depends on disposable income, and investment just responds to the interest rate.)
- b) What happens to output, interest rate, investment and consumption in the short run?
- c) What happens to these variables in the long run? Discuss how this result compares to the result you got when discussing a similar tax cut for the Neoclassical model in homework #1 (problem #4, part b).

11/9/09
