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ECON 202
MACROECONOMIC THEORY **5 April 2013**
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Midterm Exam I

1. (**15 Points**) Calculate the GDP of **KingLand**, a fictitious economy whose numbers are listed below. Do so using all three methods (value added approach, income approach, and expenditure approach) and do not forget to indicate your calculations clearly.

KingLand, year 2012

Farmer King, (private firm)	
Corn Sold to Govt	**$30**
Corn Sold to Singapore	**$25**
Corn Sold to KingFoodCo, Inc	**$20**
Payment to workers	**$40**
Tax on profit	**$25**
Pesticides imported for Corn Production	**$5**

KingFoodCo, Inc	
Corn Flakes Sold to Consumers	**$100**
Corn Flakes Sold to Govt	**$20**
Corn bought from Farmer King	**$20**
Salt bought from Egypt for Corn Flakes	**$10**
Payment to workers	**$20**
Tax on Profit	**$30**
Corn Inventory	
Beginning of Year	**$10**
End of Year	**$5**

Govt	
Total Tax Income	**$65**
Payment to workers	**$15**
Purchase of Corn	**$30**
Purchase of Corn Flakes	**$20**
Unemployment benefits Paid	**$5**

Households	
Taxes on wage income	**$10**
Unemployment benefits Received	**$5**
Corn Flakes purchased	**$100**

2. (**15 Points, 5 points each**) The country of Old Jersey produces milk and butter, and it has published the following macroeconomic data, where quantities are in gallons and prices are dollars per gallon.

	Year 1		Year 2	
Good	**Quantity**	**Price**	**Quantity**	**Price**
Milk	500	$2	900	$3
Butter	2000	$1	3000	$2

a) Calculate the percentage change in *nominal* GDP between Year 1 and Year 2.
b) Calculate the percentage change in *real* GDP (take **Year 2** as the base year) between Year 1 and Year 2.
c) Compute the GDP deflator for year 1 and year 2 and compute the rate of inflation from year 1 to year 2.

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3. (**20 Points**) Suppose the economy of Hope is represented by the following equations:

AE=C+I+G $\qquad$ **C = 500 + 0.5Y_D** $\qquad$ **Y_D =Y–T** $\qquad$ **T=600** $\qquad$ **I=300 G=2000**

a) (5 points) Given the above variables, calculate the equilibrium level of output.
b) (5 points) Graphically illustrate the equilibrium level of output for this economy.
c) (5 points) Now, assume that taxes increase from 600 to 700. What is the new equilibrium level of output? How much does income change as a result of this event? What is the multiplier for this economy?
d) (5 points) (Graphically illustrate the effects of this tax increase on the demand line and Y. Clearly indicate in your graph the initial and final equilibrium levels of output.

4. (**15 Points**) Use the IS-LM model to answer this question. Suppose there is a simultaneous increase in government spending and reduction in the money supply (assume that GDP remains intact after all changes). **Explain** what effect this particular policy mix will have on **investment** and **consumption**. **Do not forget to support your answer by a figure**.

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5. (**30 Points**) Consider the following IS-LM model:

$C = 400 + 0.75\text{YD}$; $\text{T} = 400 + 0.1 \cdot Y$; $I = 300 - 1500i$; $G = 600$; $P = 0.5$
$M^d = 3 \cdot Y - 12000 \cdot i$ (real money demand); $M^s = 3000$ (**nominal money supply**). If you solve this model, you find that **IS** equation is $\text{i} = \frac{1000}{1500} - \frac{0.325}{1500}\text{Y}$ and $i = \frac{3}{12000}Y - \frac{6000}{12000}$ is **LM** equation. And equilibrium values are $\text{Y}^* = 2500$ and $i^* = 0.125$ (=12.5%).

(a) (**7 points**) Suppose now that government spending is increased by 100 (from 600 to 700). What is the **government spending multiplier**? **Calculate**.
(b) (**8 points**) Solve for new Y, i, C, and I and describe in words the effects of an expansionary fiscal policy.
(c) (**7 points**) Go back to original question. Suppose now that there is a policy mix and that government spending is increased by 100 (from 600 to 700) and **Nominal MS** from **3000** to **3500**. What is the **mixed policy multiplier**? **Calculate**.
(d) (**8 points**) Solve for new Y, i, C, and I and describe in words the effects of an expansionary fiscal policy.

6. (**5 Points**) Indicate for each of the following transactions whether they raise GDP or not. If your answer is YES, which component of GDP increases?

a) The government gives you an unemployment benefit.
b) You pay a broker who helped you with your purchase of bonds and stocks.
c) You buy a DVD from a DVD pirate.
d) You buy a new car.
f) You sell your home-made cakes to a friend.