

Problem Set # 2

This problem set is due Thursday, November 2nd at the beginning of the class period. All text answers must be typed. Unstapled problem sets will not be accepted. Late problem sets are unacceptable also.

1. In 2006 Brazil faces a large international trade deficit (or negative net exports).
 - a) Draw a diagram representing the Brazilian economy during 2006 (Hint: In this diagram, equilibrium output must occur at a level in which net exports are negative; and this should be shown in your diagram).
 - b) Assume that the government wants to reduce the trade deficit without changing the level of national output. Describe the changes in fiscal policy and in the exchange rate that would be necessary to achieve these objectives. Use a diagram to show the effects of your proposed policy changes.

2. You are given the following information about Sugarland's economy:
 - Each year consumers spend \$4,200 million (or \$4.2 billion) regardless of the level of their disposable income. In addition to those \$4,200 million, they always spend 80% of their yearly disposable income.
 - Investment is fixed at \$2,500 million.
 - Government expenditures are \$1,900 million.
 - Net taxes equal \$1,500 million.
 - Exports are \$3,100 million.
 - Imports are always equal to 20% of the level of disposable income.
 - a) How much would Sugarland's equilibrium level of output be?
 - b) How much would net exports be when this economy is at equilibrium output?
 - c) Sugarland's main exports are candy bars. Due to recent research that proved that daily consumption of candy bars enhances soccer skills, Sugarland's exports increased by \$600 million to a new level of \$3,700 million. How much would Sugarland's new equilibrium level of output be?
 - d) How much would net exports be when this economy is at its new equilibrium output?
 - e) Dr. Jennifer Nettles, Sugarland's President, decides that she wants equilibrium output to go back to its original level. How much would she have to increase taxes to achieve her objective?
 - f) How much would net exports be when the policies of President Nettles bring equilibrium output back to its original level?

3. You are given the following information about the French economy: When unemployment is at its natural rate, which is 8 percent, government outlays are 16 percent of GDP, while taxes and other government revenues are equal to 12 percent of GDP. For each 1 percentage point increase in the unemployment rate, government outlays increase by 2 percentage points of GDP and taxes fall by 1 percentage point of GDP. There is no inflation.

a) In 2006, the unemployment rate is 12%. Calculate the actual, structural, and cyclical deficits (as percentages of GDP) of the French government.

b) In 2007, the unemployment rate is 10%. Calculate the actual, structural, and cyclical deficits (as percentages of GDP) of the French government.

c) In 2008, the unemployment rate is 9%. Calculate the actual, structural, and cyclical deficits (as percentages of GDP) of the French government.

d) In 2009, the French government decides to increase taxes and cut government expenditures to improve its fiscal position. Now you are told that when unemployment is 8 percent, government outlays are 15 percent of GDP, while taxes and other government revenues are equal to 14 percent of GDP. Furthermore, as happened before, for each 1 percentage point increase in the unemployment rate, government outlays increase by 2 percentage points of GDP and taxes fall by 1 percentage point of GDP. Assuming that the unemployment rate remains at 9% after these policies are implemented; calculate the actual, structural, and cyclical deficits (as percentages of GDP) of the French government.

e) In 2010, the unemployment rate is 10%. Calculate the actual, structural, and cyclical deficits as percentages of GDP) of the French government (Assume that the changes that took place in 2009 are permanent).

4. You are given the following information about Molotov's economy:

- Each year consumers spend \$1,200 million (or \$1.2 billion) regardless of the level of their disposable income. In addition to that \$1,200 million, they always spend 85% of their yearly disposable income.
- Investment is fixed at \$900 million.
- Government expenditures are \$800 million.
- Taxes equal 20% of income.
- Exports are \$1,000 million.
- Imports are always equal to \$400 million plus 10% of the level of disposable income.

a) How much would Molotov's equilibrium level of output be?

b) How much would net exports be when this economy is at equilibrium output?

c) How much would the net government surplus (or deficit) be when this economy is at equilibrium output?

d) President Fuentes decides to cut government expenditures by \$200 million to a new level of \$600 million. How much would Molotov's new equilibrium level of output be?

e) How much would the net government surplus (or deficit) be when this economy is at its new equilibrium output? Was this change in the surplus (or deficit) due to structural or cyclical reasons? Explain.

f) Dr. Tito Fuentes, Molotov's President, decides to follow supply-side ideas to stimulate the economy. He cuts taxes from 20% of income to a new level of only 12.5% of income. How much would Molotov's new equilibrium level of output be?

5. Visit the U.S. Office of Management and Budget web site (<http://www.gpoaccess.gov/usbudget/>) and use the FY 2007 Federal Budget Publications to obtain the data necessary to answer the following questions (use the "Browse the FY07 budget" link).

a) How much was the total budget surplus or deficit of the Federal Government **for each year** from 1980 until 2005? (Note: You should look for the Historical Tables section, "Table 1.1-Summary of Receipts, Outlays, and Surpluses or Deficits: 1789-2011" to get these numbers)

b) Was the change in the actual deficit from 1980 to 1983 mainly due to cyclical or structural reasons? Explain.

c) Was the change in the actual deficit from 1984 to 1986 mainly due to cyclical or structural reasons? Explain.

d) Was the change in the actual deficit from 1990 to 1992 mainly due to cyclical or structural reasons? Explain.

e) Was the change in the actual deficit (or surplus) from 1992 to 2000 mainly due to cyclical or structural reasons? Explain.

f) Was the change in the actual deficit (or surplus) from 2001 to 2004 mainly due to cyclical or structural reasons? Explain.

g) Was the change in the actual deficit (or surplus) from 2004 to 2005 mainly due to cyclical or structural reasons? Explain.

h) How much was the estimated total budget surplus or deficit of the Federal Government for each year from 2006 until 2011 according to the Historical Tables (these estimations were prepared at the beginning of 2006)?

i) Why do you think the government is estimating a decline in the future deficit? Is this due to cyclical or structural reasons? Explain.

6. Assume that you are hired as an economic advisor to the Chairperson of the Federal Reserve Bank. Your boss is interested in knowing the different levels of investment that would take place when the interest rate changes. She gives you the following information about the projects that investors are contemplating for this year (Note: Operation costs do not include financial costs):

<u>Project</u>	<u>Total Investment</u>	<u>Revenues</u>	<u>Operation Costs</u>
A	90	25	20
B	120	45	30
C	75	10	2
D	140	40	32
E	200	90	74

- How much would the level of investment be when the interest rate equals 7%? Explain fully.
- How much would the level of investment be when the interest rate equals 9%? Explain fully.
- Use the information from parts a) and b) to draw the investment demand curve for this economy.
- The Chairperson of the Federal Reserve System is contemplating a contractionary monetary policy that would result in an increase in the interest rates from 7% to 9%. Assuming that you are a mainstream economist, what would you predict the result of this policy would be on the level of real GDP and on the price level? Draw a diagram in support of your answer and explain fully (Note: You do not have sufficient data to provide exact numbers for real GDP nor price level, however, you can discuss the direction of their changes).

7. Visit the Bureau of Economic Analysis web site (<http://www.bea.gov/>). Click on “Gross Domestic Product.” Then click on “Interactive NIPA tables” and then on “Frequently Requested NIPA Tables.” Look for “Table 1.1.5 Gross Domestic Product (A) (Q)” and search for the annual data from 2001 until 2005.

- Write down the Gross Domestic Product, Personal Consumption Expenditures, and Imports for every year from 2001 until 2005 (use yearly data). Use this dataset to calculate the implied values for the marginal propensity to consume and the marginal propensity to import for 2002, 2003, 2004, and 2005 (assume that taxes do not vary with income).
- Calculate the open economy multiplier for 2002, 2003, 2004, and 2005 (assume that taxes do not vary with income).
- What happened to the open economy multiplier from 2002 to 2005? Why did it increase (or decrease)? What does this imply for the effect of a change in taxes on GDP?