

Problem Set # 1

This problem set is due Thursday, February 9, 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) The following information is from the 2004 United States' national income accounts:

| | | |
|--|----|--------|
| 1. Government transfer payments | \$ | 1394.5 |
| 2. Personal income taxes | | 1049.1 |
| 3. Consumer purchases of goods and services | | 8214.3 |
| 4. Rental income | | 134.2 |
| 5. Government expenditures on goods and services | | 2215.9 |
| 6. Value of leisure time | | 9935.6 |
| 7. Imports of goods and services | | 1797.8 |
| 8. Gross domestic investment | | 1928.1 |
| 9. Depreciation | | 1435.3 |
| 10. Pollution damage | | 4231.8 |
| 11. Exports of goods and services | | 1173.8 |
| 12. Proprietors' income | | 889.6 |
| 13. Corporate profits | | 1161.5 |
| 14. Receipts of factor income from the rest of the world | | 415.4 |
| 15. Indirect business taxes | | 974.3 |
| 16. Social Security taxes | | 822.2 |
| 17. Household production | | 6771.1 |
| 18. Corporate profits tax | | 389.2 |
| 19. Personal dividend income | | 490.6 |
| 20. Personal interest income | | 905.9 |
| 21. Payments of factor income to the rest of the world | | 361.7 |
| 22. Net interest | | 505.5 |
| 23. Business transfer payments | | 33.0 |
| 24. Wages and salaries | | 6687.6 |

- Compute the U.S. GDP for 2004 using the flow-of-expenditures approach.
- Compute the U.S. GDP for 2004 using the flow-of-earnings approach.
- Compute the U.S. GNP for 2004. Was the 2004 GNP higher or lower than GDP? Why?
- Compute the U.S. NNP, PI, and DI for 2004.

2. a) Use aggregate supply and demand analysis to explain the macroeconomic consequences of a doubling in the price of oil due to military conflicts in the Middle East.

b) Assume that the President Bush says that he wants to follow non-accommodative economic policy in response to the changes in part a). What fiscal policies would you suggest be used? What monetary policies could also be used? Use a diagram to show the effects of your suggested policies.

3. You are the President's economic advisor and you are trying to figure out where the U.S. economy is headed next year. You have the following forecasts for next year's AD, short-run AS, and long-run AS curves (output is given in trillions of 2005 dollars):

| <u>Price Level</u> | <u>Real GDP Demanded</u> | <u>Real GDP Supplied in the short run</u> | <u>Long-run Aggregate Supply</u> |
|--------------------|--------------------------|---|----------------------------------|
| 196 | 13.5 | 11.1 | 12.6 |
| 202 | 12.9 | 11.7 | 12.6 |
| 208 | 12.3 | 12.3 | 12.6 |
| 214 | 11.7 | 12.9 | 12.6 |

This year, real GDP is \$11.8 trillion, potential GDP is \$11.8 trillion, and the price level is 200. The President wants answers to the following questions:

- What is your forecast of next year's real GDP?
- What is your forecast of next year's price level?
- What is your forecast of the inflation rate?
- Will real GDP be above or below potential output? By how much?
- What will happen to the unemployment rate?

4. Use the information in problem 3 to answer the following questions (use diagrams in your answers):

a) What will have to be done to aggregate demand to move the economy to potential output? What type of monetary policy could be used to achieve this objective? What fiscal policy could be used to achieve this objective?

b) What will the price level be if aggregate demand is manipulated to move the economy to potential output? (For simplicity you can assume that the AD and AS are straight lines).

5. Use the information available at the Federal Reserve Bank of St. Louis' webpage (<http://research.stlouisfed.org/fred2/categories/22>) to obtain the data necessary to answer the following questions.

a) What were the interest rates on 3-month U.S. Treasury bills (the data series is called: 3-Month Treasury Constant Maturity Rate –**daily**-) on:

- October 2, 2000
- January 3, 2005
- April 1, 2005
- July 1, 2005
- October 3, 2005
- January 27, 2006

b) What were the interest rates on 10-year U.S. Treasury bonds (the data series is called: 10-Year Treasury Constant Maturity Rate –**daily**-) on:

- October 2, 2000
- January 3, 2005
- April 1, 2005
- July 1, 2005
- October 3, 2005
- January 27, 2006

c) Draw the yield curves for:

- October 2, 2000
- January 3, 2005
- April 1, 2005
- July 1, 2005
- October 3, 2005
- January 27, 2006

d) What was the yield curve from October 2, 2000 predicting about the future of the U.S. economy for 2001?

e) What was the probability of a recession according to the yield curve of October 2, 2000? (Note: Use the diagram from the WSJ article (Aug. 12, 1996) that we discussed in class to answer this question). On the basis of that information, what actions would you have recommended the Fed take at that time? Why?

f) What were the changes in the yield curve from Jan. 3, 2005 to January 27, 2006 predicting about the future of the U.S. economy for 2006? Explain.

g) What is the probability of a recession for 2006 according to the yield curve of January 27, 2006 (Note: Use the diagram from the WSJ article -Aug. 12, 1996- that we discussed in class to answer this question). On the basis of that information, what actions would recommend the Fed take at this time? Why?

6. The country of Tacuba has 280 million people over the age of 16. You are told that there is only one wage in the economy and that it is equal to \$35 per hour. At this wage 190 million people are willing to work. You are told that when the wage equals \$30 per hour there is no involuntary unemployment in Tacuba.

a) Use the geometry of supply and demand to describe the labor market of Tacuba (Make sure that you show the number of workers employed, voluntarily unemployed, and the total population).

b) Suppose that as a result of a decline in consumption and investment expenditures, 40 million workers become involuntarily unemployed. Illustrate these changes with the use of a new diagram (Make sure that you show the number of workers that are employed, involuntarily unemployed, voluntarily unemployed, and the total population).

c) What assumption is necessary to generate involuntary unemployment in the labor market?

7. Find a newspaper or magazine article published between February 1, 2006 and February 8, 2006 describing an event that may affect the U.S. price level and real GDP. Draw an initial set of AD and AS curves, then determine which curve will be affected, and in which direction it will shift. What do you predict will happen to the price level and real GDP? Your answer must include a short summary of the article and an explanation of how the event affects AD or AS (you should also attach a copy of the article).