Economics 1021 **Homework Problems: Part 2**
Prof. Steve Fazzari **Spring, 2013**

Due: Wednesday, February 6

1. Suppose that a mythical economy produces just one kind of output that is called "stuff." The table below gives the economy's output of stuff and the corresponding prices for 2003, 2004, and 2005. Use these data to answer the questions below. For parts (b) through (d), show the details of your calculations and express your answers in percentage terms to two decimal places.

Year	Units of Stuff Produced	Price of Stuff
2003	500	$20
2004	520	$21
2005	560	$24

a) Calculate nominal GDP for each year. Because the structure of this economy is so simple, it is easy to calculate the GDP price index. Calculate the price index for each year *using 2004 as the base year*, with a value of 100. Then, calculate real GDP for each year.

b) What is the growth rate in nominal GDP between 2004 and 2005?

c) What is the inflation rate between 2003 and 2004?

d) What is the *annualized growth rate* in real GDP between 2003 and 2005? (Hint: see the discussion from class about measuring "long-term" annualized growth rates.)

2. Use online sources to look up GDP data for the first three quarters of 2012 (fourth quarter data may not be available yet). A particularly nice source is the "FRED" database maintained by the Federal Reserve Bank of St. Louis: http://research.stlouisfed.org/fred2/. But you can find the data in a wide variety of locations. Find the data for nominal GDP, the GDP price index (or implicit price deflator), and real GDP. Answer the following questions using the data you find.

a) Provide a small table that shows your data.
b) You should find data designated as "seasonally adjusted annual rates." What does it mean to say that the data are expressed at annual rates? What is seasonal adjustment?
c) Calculate the growth rate of real GDP between each of the quarters given above. Show the actual and annualized growth rates and show how you did the annualization calculations
d) What was the annualized inflation rate in the GDP price index between the **first and third** quarters of 2012? (Hint: The answer to this question does not follow directly from the specific formulas given in class, but I hope that you can use the general principles discussed in class to answer this question.)

3. In 2005 dollars, U.S. GDP was $2,828.5 billion in 1960 and $13,299.1 billion in 2011.

a) What does the phrase "in 2005 dollars" mean? Why is it important that GDP be expressed in dollars for a given year?
b) Compute the average annual growth rate of real output between 1960 and 2010. You may use your calculator, but show your work.

4. What were the two worst economic downturns of the past 85 years in the U.S.? What criteria did you use to make this judgment?

5. The table below provides some data about a hypothetical future business cycle. Answer the questions below using these data.

Quarter	Real GDP Growth Rate	Unemployment Rate	Inflation Rate
2014:3	2.9	6.4	2.5
2014:4	3.6	6.2	3.0
2015:1	2.8	6.2	3.7
2015:2	-0.4	6.0	5.1
2015:3	-1.6	6.4	6.8
2015:4	-2.8	7.5	6.5
2016:1	0.4	8.0	6.0
2016:2	0.6	8.2	5.9
2016:3	1.0	8.2	6.1
2016:4	0.9	8.1	5.8

a) In which quarter does the cycle reach a peak? In which quarter does the cycle hit a trough?

b) Does the unemployment rate move pro- or counter-cyclically? Is it a leading or lagging indicator of the cycle? Give examples from the data above to support your conclusions.

c) The behavior of the inflation rate in the data above is rather unique relative to most U.S. cycles. Briefly explain why. In which particular historical event in recent U.S. economic history did inflation move this way? Briefly discuss the historical reason for this somewhat unusual movement.

d) In spite of the fact that the economy is recovering in the year 2016, one might expect that the incumbent party will have some difficulty holding the presidency in the election of 2016 because of the state of the economy. Explain why this would likely be the case, referring to all three series of data.

Important Note: The following problems are based on the topics II.B and II.C in the on-line course notes for the unemployment and inflation topics. You are responsible for studying this material on your own; it will not be covered in class.

6. Which of the following people is considered unemployed by the Bureau of Labor Statistics? Explain your answer in each case.

a) A housewife or househusband.
b) An inmate in the state prison.
c) A college student who is not looking for work.
d) A college student who has just graduated and is looking for a job.
e) A person who was fired 3 months ago and has been looking for a job ever since.
f) A person who was fired 3 months ago and unsuccessfully looked for a job for 1 month, but has not looked for a job recently.

7. The U.S. unemployment survey puts individuals into one of three categories: working, unemployed, or out of the labor force. Define the unemployment rate and the labor force in terms of the survey categories. Also, refer to the survey categories to explain how the unemployment rate might *fall* even though there is *no change* in the number of people working. Also describe a situation in which a *rise* in the unemployment rates might correspond to an improving labor market. Briefly explain your answers.

8. "Because unemployed workers receive unemployment benefits and other benefits that make up for most of their lost wages, unemployment is no longer a social problem." Comment.

9. Suppose government data showed an unemployment rate of 5.0 percent. Do you think the government would surely take action to create new jobs to reduce this rate? Explain your answer.

10. Suppose you agree to lend money to your friend on the day you both enter college, at what you both expect to be a *zero real* rate of interest. Payment is to be made at graduation, with interest at a fixed *nominal* rate. If inflation proves to be *lower* during your four years in college than what you both had expected, who will gain and who will lose? Explain.

11. In 1974, the yield (interest rate) on 10-year U.S. Treasury securities averaged 7.56 percent. The inflation rate (measured by the GDP deflator) was 8.7 percent. What was the real interest rate on these securities? Do you think the level of inflation in 1974 was fully anticipated by individuals who bought these Treasury bonds at the time of their purchase? Why or why not?