

Economics 132.03
Principles of Macroeconomics
Spring 2009

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<http://www2.bc.edu/~irelandp/ec132.html>

First Midterm Exam

This exam has 9 questions on 3 pages; before you begin, please check to make sure your copy has all 9 questions and all 3 pages. Each of the 9 questions will receive equal weight in determining your overall exam score. You can work on the questions in any order, but please be sure to keep your answers to all of the parts of a specific question together in your exam book.

1. What happens to US gross domestic product (GDP) and its four main components when ...
 - a. A US household buys a new refrigerator, manufactured by a US firm?
 - b. Ford Motor Company (a US firm) produces a new car, which sits in a US auto dealer's lot instead of being sold to a US consumer?
 - c. The State of Massachusetts repaves part of the Massachusetts Turnpike?
 - d. Honda (a Japanese firm) expands one of its factories that is located in the US?
 - e. The value of assets like stocks, bonds, and mutual funds falls in the US?

2. The American Bakeries Corporation purchases \$1 million worth of flour, eggs, and other ingredients to make cakes. At the same time, however, it pays its workers \$500,000 in wages. American Bakeries then sells the cakes to a chain of grocery stores for \$3 million. The grocery stores sell the cakes to individual consumers for \$4 million, but then have to pay their employees \$250,000 in wages. By how much does GDP go up as a result of all these transactions?

3. Consider a simple economy in which only two goods are produced and sold: pizza and beer. The prices and quantities produced of these two goods over a three-year period are shown in the table below.

Year	Price of Pizza	Quantity of Pizza	Price of Beer	Quantity of Beer
2006	\$2	1	\$2	1
2007	\$2	3	\$2	2
2008	\$4	3	\$8	2

- Calculate nominal GDP in 2006, 2007, and 2008.
 - Next, using 2006 as your base year, calculate real GDP in 2006, 2007, and 2008.
 - Does the GDP deflator rise between 2006 and 2007? Why or why not?
 - Does the GDP deflator rise between 2007 and 2008? Why or why not?
4. Go back to the same example from question 3, just above. Consumers in the economy like two goods: pizza and beer. Prices and quantities consumed are the same as before:

Year	Price of Pizza	Quantity of Pizza	Price of Beer	Quantity of Beer
2006	\$2	1	\$2	1
2007	\$2	3	\$2	2
2008	\$4	3	\$8	2

- As a first step in computing the consumer price index (CPI), the Bureau of Labor Statistics surveys consumers to determine the “basket of goods” purchased by a typical consumer. Using 2006 as your base year, what is the basket of goods in this economy?
 - What is the cost of the basket in each year: 2006, 2007, and 2008?
 - Still using 2006 as the base year, what is the CPI in each year: 2006, 2007, 2008?
 - Is percentage change in the CPI between 2006 and 2008 in this question larger than, smaller than, or the same as the percentage change in the GDP deflator between 2006 and 2008 in question 3? What explains the difference, if any?
5. Suppose that we see the GDP deflator rising at a faster rate than the CPI.
- Could this be because of a rapid rise in the price of imported oil? Why or why not?
 - Could this be because of a rapid decline in the price of equipment and machinery purchased by firms, and therefore included in the investment component of GDP, because those goods contain microprocessors that are falling in price? Why or why not?

6. You are just appointed CEO of a large US corporation and sign a two-year contract that pays \$1,000,000 (that is, \$1 million) for 2009 and \$1,050,000 (that is, \$1 million plus 5 percent) for 2010, under the expectation that the inflation rate between this year and next will be 5 percent.
 - a. Suppose that the inflation rate turns out to be 10 percent instead. Do the terms of your contract mean that you “win” or “lose” when inflation turns out to be higher than expected?
 - b. Suppose that the inflation turns out to be 1 percent instead. Do the terms of your contract mean that you “win” or “lose” when inflation turns out to be lower than expected?
 - c. Explain briefly how the consumer price index could be used instead to provide you with different contractual terms that would protect your 2010 salary against inflation but, at the same time, not expose you to this “gamble” as to whether you will “win” or “lose” if inflation comes in higher or lower than expected.

7. To measure most accurately the standard of living within any given country at any given point in time:
 - a. Which measure of national income would be better to use, nominal GDP or real GDP? Why?
 - b. And which is better: GDP (either nominal or real, depending on your answer from part (a) above) itself or GDP per person? Why?

8. Macroeconomists often use the story of Robinson Crusoe to help identify and understand the determinants of productivity in the United States.
 - a. When macroeconomists say that Robinson Crusoe’s productivity depends on how much training he has in the latest fishing techniques, what counterpart do they have in mind as to how productivity is determined in more complex economies like the US?
 - b. When they say that Robinson Crusoe’s productivity depends on how plentiful fish are in the waters surrounding his island, what counterpart do they have in mind as to how productivity is determined in more complex economies like the US?
 - c. When they say that Robinson Crusoe’s productivity depends on how many fishing poles he has, what counterpart do they have in mind as to how productivity is determined in more complex economies like the US?
 - d. When they say that Robinson Crusoe’s productivity depends on how good he is at inventing new techniques for fishing, what counterpart do they have in mind as to how productivity is determined in more complex economies like the US?

9. In the 1980’s, Japanese investors made significant investments in the United States, both in the form of direct investments and portfolio investments. At the time, many Americans were unhappy with the fact that this investment was occurring.
 - a. In what way was it better for the United States to have received this foreign investment than to not have received it?
 - b. In what way would it have been better still if Americans themselves had made these investments?