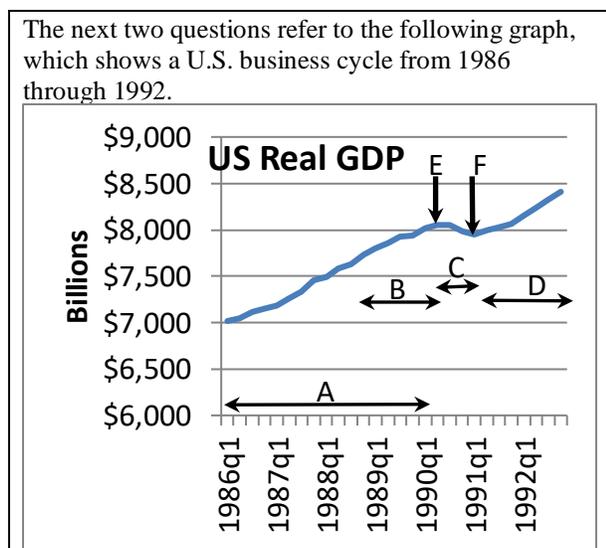


EXAMINATION #2 VERSION C
"National Income and Product Accounts"
October 9, 2012

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators or calculators with alphabetical keyboards are NOT permitted. Cell phones or other wireless devices are NOT permitted. Point values for each question are noted in brackets. Points will be subtracted for illegible writing or incorrect rounding. Maximum total points are 100.

I. Multiple choice: Circle the one best answer to each question. [1 pt each, 9 pts total]

The next two questions refer to the following graph, which shows a U.S. business cycle from 1986 through 1992.



(1) A *recovery* is marked in the graph above by the letter

- a. A.
- b. B.
- c. C.
- d. D.
- e. E.
- f. F.

(2) A *peak* is marked in the graph above by the letter

- a. A.
- b. B.
- c. C.
- d. D.
- e. E.
- f. F.

(3) At a peak in the business cycle, which is larger-- actual GDP or potential GDP?

- a. Actual GDP.
- b. Potential GDP.
- c. Actual GDP is roughly equal to potential GDP.
- d. Cannot be determined from information given.

(4) In the early 1930s, the price level in the United States dropped by about 20%. This is an example of

- a. reflation.
- b. hyperinflation.
- c. disinflation.
- d. deflation.

(5) Taxes and government spending are components of

- a. monetary policy.
- b. international trade policy.
- c. fiscal policy.
- d. foreign policy.

(6) Investment spending in the national accounts does *not* include purchases of

- a. new homes.
- b. tractor-trailer trucks.
- c. telecommunications equipment.
- d. certificates of deposit in banks.
- e. new factories.

(7) Government purchases in the national accounts do *not* include

- a. spending on highway construction.
- b. salaries of public school teachers.
- c. pay for members of the armed services.
- d. unemployment benefits.
- e. spending on national parks.

- (8) If a country's investment spending (I) is greater than its national savings, then the country must have
- a. a trade surplus.
 - b. a trade deficit.
 - c. zero net exports.
 - d. cannot be determined from information given.

- (9) The exchange rate was 0.68 euros per U.S. dollar in 2008, and 0.78 euros per U.S. dollar in 2012. Clearly, the
- a. dollar depreciated against the euro.
 - b. euro appreciated against the dollar.
 - c. both of the above.
 - d. none of the above.

II. Problems: Insert your answer to each question in the box provided. Use graphs and margins for scratch work. Only the answers in the boxes will be graded. Work carefully: partial credit is not normally given for questions in this section.

(1) [Macroeconomic record: 8 pts] Which of the following show an upward trend in the U.S. over the last 50 years? Which show no particular long-run trend? Write "TRENDED" for items with a long-run upward trend. Write "NOT TRENDED" for other items.

- a. The interest rate.
- b. Nominal GDP.
- c. Real GDP per capita.
- d. The inflation rate.

- e. The Consumer Price Index.
- f. Population.
- g. The unemployment rate.
- h. Productivity.

(2) [Inflation: 2 pts] According the U.S. Bureau of Labor Statistics, the CPI was 220.414 in December 2010, and was 227.033 in December 2011. Compute the annual rate of inflation over this period to the nearest tenth of a percentage point.

%

(3) [Real interest rate: 2 pts] Suppose banks pay an interest rate of 3 percent on deposits and the expected inflation rate is 1 percent. Compute the real rate of interest.

%

(4) [Spending approach to GDP: 16 pts] Consider each of the following items sold in 2012. Should the item be counted as part of U.S. GDP for 2012—*YES* or *NO*? If *YES*, in which spending component of GDP—consumption (C), investment (I), government purchases (G), or net exports (X)—does it belong? If *NO*, explain why not.

	<i>Part of U.S. GDP for 2012? (YES or NO)</i>	<i>If YES, then which spending component (C, I, G, or X)? If NO, why not?</i>
a. A new truck made in Michigan, purchased by a business in California.		
b. A new tractor made in Illinois, purchased by a farmer in Canada.		
c. A new shirt made in North Carolina, purchased by a consumer in New York.		
d. A Civil-War era house, purchased by a local historical society.		

(5) [Components of GDP: 16 pts] The imaginary country of Concrete Land has just four industries: the Raw Concrete Industry, the Building Construction Industry, the Road Construction Industry, and the Birdbath Industry. There are no other goods and no foreign trade. In a recent year:

- The Road Construction Industry produced and sold \$80 billion of roads for the government.
- The Birdbath Industry produced and sold \$300 billion of birdbaths to consumers.
- The Building Industry produced and sold \$50 billion of buildings (a capital good) to each industry (including itself) for a total of \$200 billion in sales.
- The Raw Concrete Industry produced and sold \$10 billion of raw concrete to the Building Industry, \$10 billion to the Road Construction Industry, and \$20 billion to the Birdbath Industry for a total of \$40 billion in sales.

a. Compute the spending components of Concrete Land's GDP.

Consumption (C)	\$	billion
Investment (I)	\$	billion
Government purchases (G)	\$	billion
Total GDP (Y)	\$	billion

b. Compute value added by each industry in Concrete Land.

Raw Concrete Industry	\$	billion
Building Industry	\$	billion
Road Construction Industry	\$	billion
Birdbath Industry	\$	billion

(6) [Investment spending: 4 pts] The table below shows data for the United States as reported by the Bureau of Economic Analysis. [Hint: Some of the data are extraneous and not needed for solving this problem.]

	2009
Depreciation ("consumption of fixed capital, private")	\$1.5 trillion
Personal consumption expenditures, durable goods	\$1.0 trillion
Corporate profits	\$1.3 trillion
Compensation of employees	\$7.8 trillion
Residential investment	\$0.4 trillion
Borrowing by nonfinancial corporate businesses	\$-0.1 trillion
Exports	\$1.6 trillion
Personal dividend income	\$0.5 trillion
Business fixed investment	\$1.4 trillion
Change in private inventories	\$-0.2 trillion

a. Compute gross investment (I).

\$	trillion
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b. Compute net investment.

\$	trillion
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(7) [Stocks v. flows: 4 pts] Are the following quantities stocks or flows? Write "STOCK" or "FLOW" in each box.

a. The amount of economic capital currently available in the economy.

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b. The amount of investment spending per year.

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c. The number of students attending Drake as of today.

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d. The number of students graduating from Drake in 2011.

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(8) [Spending components of GDP: 8 pts] The table below shows data for the United States as reported by the Bureau of Economic Analysis. [Hint: Some of the data are extraneous and not needed for solving this problem.]

	2003
National defense	\$0.5 trillion
Exports	\$1.0 trillion
Personal current transfer receipts	\$1.3 trillion
Consumption	\$7.8 trillion
Social Security and other social insurance payments	\$1.3 trillion
Gross investment	\$1.6 trillion
Government purchases	\$2.1 trillion
Imports	\$1.5 trillion

a. Does the U.S. have a trade *surplus* or a trade *deficit* ?

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b. Compute net exports (X).

\$	trillion
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c. Compute GDP.

\$	trillion
----	----------

d. Compute national saving (S).

\$	trillion
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(9) [Value added: 2 pts] Suppose a coffee shop has sales of \$140,000 in a year. Over the same year, it pays its employees \$60,000, it leases the shop for \$20,000, and it purchases \$50,000 in ingredients. Compute the value added by the coffee shop.

\$

(10) [GDP and real GDP: 8 pts] In an imaginary country, only two final goods are produced, as shown in the following table.

Year	Food		Shelter	
	Price	Quantity	Price	Quantity
2010	\$5	20	\$10	10
2011	\$5	24	\$15	10

- Compute the growth rate of *nominal GDP* (also called "current-dollar GDP") from 2010 to 2011.
- Compute the growth rate of GDP from 2010 to 2011 *in constant 2010 prices*.
- Compute the growth rate of GDP from 2010 to 2011 *in constant 2011 prices*.
- Compute the growth rate of *real GDP* from 2010 to 2011, as it would be computed by the U.S. Bureau of Economic Analysis.

%
%
%
%

(11) [Real GDP and inflation: 12 pts] Fill in the six blanks in the following table. Compute the GDP deflator to the nearest tenth. Compute the inflation rate to the nearest tenth of a percentage point.

	2009	2010	2011
Nominal GDP	\$13,974 billion	\$ _____ billion	\$15,076 billion
Population	307 million	310 million	_____ million
Real GDP	\$12,758 billion	\$13,063 billion	\$ _____ billion
Real GDP per capita	\$ _____	\$42,169	\$42,620
GDP deflator (or price index)	_____	110.99	113.36
Annual inflation rate	_____	_____ %	2.13%

(12) [Using the CPI: 2 pts] Chevrolet introduced the Corvette car in 1954 at a price of \$2,774. In that year, the CPI was about 27. The CPI is now about 230. Compute the price of 1954 Chevrolet in today's dollars, to the nearest whole dollar.

\$

(13) [PPP exchange rate: 2 pts] Suppose a basket of goods bought by a typical consumer that costs 8500 yen in Japan would cost \$100 in the United States. What is the purchasing-power-parity exchange rate?

yen per US dollar

(14) [Using market exchange rate: 2 pts] Suppose the exchange rate for euros is 0.77 euros per U.S. dollar. Then a software program that costs 50 euros in Germany will cost how much in U.S. dollars, to the nearest whole dollar?

\$

III. Critical thinking: Write a one-paragraph essay answering one question below (your choice). [3 pts]

- (1) Which usually grows faster in a country—real GDP or real GDP per capita? Explain your reasoning.
- (2) Suppose the value of final goods and services produced annually in Country A is identical to that in Country B: \$3 trillion. However, Country A has few very rich people or very poor people, while income and wealth are more unequal in Country B. On the other hand, Country A has major pollution problems, while Country B has almost no pollution. Which country has higher GDP? Justify your answer.

Please circle the question you are answering and write your answer below. Full credit requires correct economic reasoning, legible writing, good grammar including complete sentences, and accurate spelling.

[end of exam]