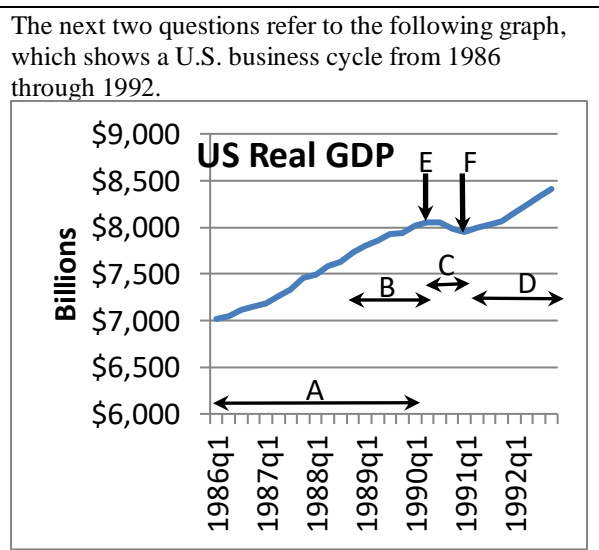


EXAMINATION #2 VERSION A
"National Income and Product Accounts"
October 9, 2012

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]



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

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

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

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

- (3) At the peak of a business cycle, actual GDP is
 - a. above potential GDP.
 - b. below potential GDP.
 - c. equal to potential GDP.
 - d. cannot be determined from information given.

- (4) In the early 1980s, the inflation rate in the U.S. decreased from about 10 percent to about 4 percent per year. This is an example of
 - a. deflation.
 - b. reflation.
 - c. hyperinflation.
 - d. disinflation.

- (5) Monetary policy concerns
 - a. government spending.
 - b. the money supply.
 - c. government borrowing.
 - d. taxes.
 - e. All of the above are part of monetary policy.

- (6) Investment spending in the national accounts does *not* include purchases of
 - a. trucks and heavy equipment.
 - b. new factories.
 - c. shares of stock in corporations.
 - d. new homes.
 - e. business software.

- (7) Government purchases in the national accounts do *not* include
 - a. pay for members of the armed services.
 - b. spending for social security benefits.
 - c. spending on national parks.
 - d. spending on highway construction.
 - e. salaries of public school teachers.

- (8) If a country's national savings exceed its investment spending (I), 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 1.67 Brazilian *reals* per U.S. dollar in 2011 and 1.92 *reals* per U.S. dollar in 2012. Clearly, the
- a. dollar depreciated against the *real*.
 - b. *real* depreciated 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. Productivity.
- b. The Consumer Price Index.
- c. Population.
- d. The unemployment rate.

- e. The inflation rate.
- f. The interest rate.
- g. Nominal GDP.
- h. Real GDP per capita.

(2) [Inflation: 2 pts] According the U.S. Bureau of Labor Statistics, the CPI was 211.401 in December 2008, and was 217.330 in December 2009. Compute the annual rate of inflation over this period to the nearest tenth of a percentage point.

	%
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(3) [Real interest rate: 2 pts] Suppose banks pay an interest rate of 6 percent on deposits and the expected inflation rate is 2 percent. Compute the real rate of interest.

	%
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(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 house in Des Moines built in 1955 and resold to a family in March 2012.		
b. A tractor made in Illinois in July 2012 and purchased by a farmer in Canada.		
c. A county office building built in Iowa in spring 2012.		
d. A computer system built and installed in a Cedar Rapids bank in June 2012.		

(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 Raw Concrete Industry produced and sold \$150 billion of raw concrete to the Building Industry, \$50 billion to the Road Construction Industry, and \$50 billion to the Birdbath Industry for a total of \$250 billion in sales.
- The Road Construction Industry produced and \$100 billion of roads for the government.
- The Birdbath Industry produced and sold \$500 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.

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.]

	2007
Residential investment	\$0.6 trillion
Borrowing by nonfinancial corporate businesses	\$0.8 trillion
Exports	\$1.7 trillion
Personal dividend income	\$0.8 trillion
Business fixed investment	\$1.6 trillion
Change in private inventories	\$0.1 trillion
Depreciation ("consumption of fixed capital, private")	\$1.5 trillion
Personal consumption expenditures, durable goods	\$1.2 trillion
Corporate profits	\$1.5 trillion
Compensation of employees	\$7.9 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 number of cars parked on the lot at Bob Brown Chevrolet on October 1, 2010.

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b. The number of cars sold by Bob Brown Chevrolet between September 1, 2010, and September 30, 2010.

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c. The amount of investment spending in the U.S. in 2009.

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d. The amount of economic capital in the U.S. on January 1, 2010.

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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.]

	2001
Social Security and other social insurance payments	\$1.1 trillion
Gross investment	\$1.7 trillion
Government purchases	\$1.8 trillion
Imports	\$1.4 trillion
National defense	\$0.4 trillion
Exports	\$1.0 trillion
Personal current transfer receipts	\$1.1 trillion
Consumption	\$7.1 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
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d. Compute national saving (S).

\$	trillion
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(9) [Value added: 2 pts] Suppose a coffee shop has sales of \$120,000 in a year. Over the same year, it pays its employees \$40,000, it leases the shop for \$10,000, 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		Clothing	
	Price	Quantity	Price	Quantity
2010	\$3	20	\$2	20
2011	\$4	20	\$2	23

- 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.

	2002	2003	2004
Nominal GDP	\$10,642 billion	\$ _____ billion	\$11,853 billion
Population	288 million	291 million	_____ million
Real GDP	\$11,543 billion	\$11,836 billion	\$ _____ billion
Real GDP per capita	\$ _____	\$40,727	\$41,761
GDP deflator (or price index)	_____	94.14	96.79
Annual inflation rate	_____	_____ %	2.82%

(12) [Using the CPI: 2 pts] [Using the CPI: 2 pts] Ford Motor Company introduced the Mustang car in 1964 at a price of \$2,368. In that year, the CPI was about 31. The CPI is now about 230. Compute the price of 1964 Mustang 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 250 ringgits in Malaysia would cost \$100 in the United States. What is the purchasing-power-parity exchange rate?

ringgits per US dollar

(14) [Using market exchange rate: 2 pts] Suppose the exchange rate for Swiss francs is 0.93 francs per U.S. dollar. Then a software program that costs 50 francs in Switzerland 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]