

Homework 1
Principles of Macroeconomics: ECO 212
Due: Tuesday, February 14, 2006

Question 1 (20 points).

For each of the following, calculate the addition to the GDP (*if any*). Also give a one sentence explanation of your reasoning.

- a. Dave cooks a bowl of his famous lentil soup for dinner, which all agree is better than the lentil soup at Chartwells, which sells for \$2 per bowl.
- b. Deana buys a Starbuck's cookie for \$1.99 plus a 14 cent sales tax.
- c. Luca spends \$10,000 on various car accessories. His Cadillac increases in value from \$5,000 to \$20,000.
- d. HP makes 4 laptops, which it sells to Best Buy for a price of \$1,500 each. In turn, Best Buy sells 3 of the laptops for \$2,000 each. One laptop remains on the shelf.

Question 2 (30 points).

Calculate the macroeconomic statistics listed below for the economy "Pearson Dorm" described by Table 1. When calculating price indices, use 2003 as the base year. You may use a spreadsheet such as Excel for this problem.

Item	2003		2004		2005	
	quantity	price	quantity	price	quantity	price
Tickets for "Green Day" Concert	2	\$50	2	\$50	0	\$80
Beach Towels	30	\$7	40	\$7	50	\$7
Cell Phone Bill	20	\$40	22	\$45	10	\$65
Pizza	50	\$10	50	\$11	100	\$10
ITunes Downloads	60	\$1	40	\$1.25	20	\$1.50

Table 1: Purchases at Pearson Dorm

- a. Calculate the nominal gross domestic product (NGDP) for each year of the economy.
- b. Calculate the GDP deflator for each year of the economy.
- c. Calculate the real gross domestic product (real GDP) for each year of the economy.
- d. Calculate the consumer price index (CPI) for each year (assume all goods listed are purchased by a typical urban household).

- e. Calculate the percent change in the real GDP for 2004 and 2005. Was there a recession in 2004? Was there a recession in 2005?

Question 3 (10 points).

Below is a list of top selling movies (ticket sales only, in their initial theatre release). Convert the sales of each movie to December, 2005 dollars. The CPI in December, 2005 is 197.7. Rank the movies from highest to lowest sales in 2005 dollars.

Movie	year	Gross (millions)	cpi (1983=100)
Titanic	1997	\$601	161.8
Jurassic Park	1993	\$345	146.3
Jaws	1975	\$191	55.6
The Sound of Music	1965	\$114	31.9
The Godfather	1972	\$98	42.5
Gone With the Wind	1939	\$77	14.0
Star Wars (episode 4)	1977	\$461	62.3
Star Wars (episode 1)	1999	\$431	168.8
Shrek 2	2004	\$441	191.2

Table 2: Record Selling Movies

Question 4 (20 points).

In many countries, the prices of some goods are set by the government. Suppose:

Item	Quantity	Market Price	Controlled Price
AIDS Drugs	100	\$50	\$10
Heating oil	500	\$5	\$10

- a. Calculate the GDP using market prices and the GDP using government controlled prices. After moving from government controlled prices to market prices, does the GDP rise or fall?
- b. Which better measures welfare: GDP at market prices or GDP at government controlled prices? Explain.

Question 5 (20 points).

Consider a hypothetical economy that has only one finished good, Ipods. There are two stages of production. Scandisc Corp. produces the hard drives, which Apple buys and uses to produce Ipods. There are three firms, Apple, Scandisc, and ABC Properties, which rents a building to Apple.

- In 2005, Apple produced \$4 million worth of Ipods.
 - In 2005, households bought \$3 million worth of those Ipods.
 - Apple paid \$0.5 million to its workers, \$0.2 million to the CEO, \$0.3 million in rent, and \$2 million to Scandisc for the hard drives. Scandisc and ABC Properties have no costs.
- a. Calculate C and I and the GDP using the spending approach.
 - b. Calculate Apple's profits.
 - c. Calculate the GDP using the income approach.
 - d. Calculate the addition to the GDP using the value added approach. What was the value added of ABC Properties, Scandisc, and Apple?

HINT: You must get the same answer regardless of what approach is used.