EC132.03
Principles of Macroeconomics

Boston College

Tuesday, February 2

Reminders

1. Second problem set on GDP is due on Monday, February 8 at 9am.

2. Starting today: Ch 24, “Measuring the Cost of Living.”

3. Discussion sections will begin meeting on Monday, February 8.

Fourth Quarter 2009 GDP Growth

Real Gross Domestic Product	5.7%
Contribution made by:	
C	+1.44%
I	+3.82%
G	−0.02%
NX	+0.50%
Contribution made by:	
Equipment, Machinery, and Software	+0.81%
Nonresidential Structures	−0.52%
Residential Investment	+0.14%
Inventory Investment	+3.39%

Ch 24 Measuring the Cost of Living

In 1931, the Yankees paid Babe Ruth $80,000.

In 2007, the Yankees paid Alex Rodriguez $28 million.

But in 1931, a movie ticket cost 25 cents.

So who really made more, Ruth or Rodriguez, after adjusting for inflation?

Ch 24 Measuring the Cost of Living

1. The Consumer Price Index
   A. How the CPI is Measured
   B. Problems in Measuring the Cost of Living
   C. The GDP Deflator and the CPI
2. Correcting Economic Variables for the Effects of Inflation
   A. Dollar Figures at Different Points in Time
   B. Indexation
   C. Real and Nominal Interest Rates

The Consumer Price Index

The CPI is computed by the Bureau of Labor Statistics (BLS), a division of the US Department of Labor.

Mankiw's Table 1 highlights the 5 steps involved in measuring the CPI.

Measuring the CPI

Step 1 - Survey consumers to determine the relevant “basket of goods.”

Suppose the “typical American consumer” eats 4 hot dogs and 2 hamburgers.

Then the “basket” is 4 hot dogs and 2 hamburgers.

Measuring the CPI

Step 2 – Record the price of each good in the basket in each year.

Year	Price of HD	Price of HB
2008	$1	$2
2009	$2	$3
2010	$3	$4

Measuring the CPI

Step 3 – Compute the cost of the basket (4 HDs, 2 HBs) in each year.

Year	Price of HD	Price of HB
2008	$1	$2
2009	$2	$3
2010	$3	$4

2008: ($1 per HD) x (4 HDs) + ($2 per HB) x (2 HBs) = $4 + 4 = $8 per basket

2009: ($2 per HD) x (4 HDs) + ($3 per HB) x (2 HBs) = $8 + 6 = $14 per basket

2010: ($3 per HD) x (4 HDs) + ($4 per HB) x (2 HBs) = $12 + 8 = $20 per basket

Measuring the CPI

Step 4 – Choose a base year then compute the CPI for each year as

$$\text{CPI} = \frac{\text{Cost of the Basket in the Current Year}}{\text{Cost of the Basket in the Base Year}} \times 100$$

Measuring the CPI

$$\text{CPI} = \frac{\text{Cost of the Basket in the Current Year}}{\text{Cost of the Basket in the Base Year}} \times 100$$

Choosing 2008 as the Base Year

Year	Cost of the Basket	CPI
2008	$8	($8/$8) x 100 = 100
2009	$14	($14/$8) x 100 = 175
2010	$20	($20/$8) x 100 = 250

Measuring the CPI

Step 5 – Compute the inflation rate as the percentage change in the CPI from one year to the next:

$$\text{Inflation Rate} = \frac{\text{CPI in Current Year - CPI in Previous Year}}{\text{CPI in Previous Year}} \times 100$$

Measuring the CPI

$$\text{Inflation Rate} = \frac{\text{CPI in Current Year - CPI in Previous Year}}{\text{CPI in Previous Year}} \times 100$$

Year	Cost of the Basket	CPI
2008	$8	($8/$8) x 100 = 100
2009	$14	($14/$8) x 100 = 175
2010	$20	($20/$8) x 100 = 250

Inflation Rate for 2009 = (175 – 100)/100 x 100 = 75%

Inflation Rate for 2010 = (250 – 175)/175 x 100 = 43%

Measuring the CPI

Basket for the Typical American Consumer, December 2008

Type of Good	Percentage of Total
Shelter	43.4
Food	15.8
Transportation	15.3
Medical Care	6.4
Recreation	5.7
Apparel	3.7
Communication	3.2
Education	3.1
All Others	3.4