

EC132.02

Principles of Macroeconomics

Boston College

Thursday, January 31

Reminder and Announcement

Aplia homework on Supply and Demand due tomorrow, Friday, February 1, at 9am.

Aplia homework on GDP due next Friday, February 8, at 9am.

US GDP Growth, 2012 Q4

“Advance Estimate,” January 30, 2013

“Second Estimate,” February 28, 2013

“Third Estimate,” March 28, 2013

US GDP Growth, 2012 Q4

Annual Real GDP Growth	
2010	2.4%
2011	1.8%
2012	2.2%

Annualized Real GDP by Quarter	
2012 Q1	2.0%
2012 Q2	1.3%
2012 Q3	3.1%
2012 Q4	-0.1%

Components of GDP

The **national income accounting identity**

$$Y = C + I + G + NX$$

$Y = \text{GDP}$

$C = \text{consumption}$

$I = \text{investment}$

$G = \text{government purchases}$

$NX = \text{net exports}$

Sources of US GDP Growth, 2012 Q4

Component	Contribution to Total
Y	-0.1%
C	+1.5%
I	-0.1%
Nonresidential Fixed Investment	+0.8%
Residential Investment	+0.3%
Inventory Investment	-1.3%
G	-1.3%
NX	-0.3%
Exports	-0.8%
Imports	+0.6%

Components of GDP, 2012

	Total (Billions of Dollars)	Per Person (Dollars)	Percent Of Total
Y	15,676	49,894	
C	11,120	35,393	71
I	2,060	6,557	13
G	3,064	9,752	20
NX	-567	-1,805	-4

Note: Total US Population in 2012 was approximately 314 million.

Ch 23 Measuring a Nation's Income

1. Income and Expenditure ✓
2. Measuring GDP ✓
3. The Components of GDP ✓
4. Real and Nominal GDP ←
5. GDP and Economic Well-Being

Next week: Ch 24 Measuring the Cost of Living

Real and Nominal GDP

Gross Domestic Product (GDP) =

The **market value** of all final goods and services produced within a country in a given period of time.

Since it is based on market values and hence prices, GDP when it is first computed is a **nominal variable**.

Real and Nominal GDP

Growth in **nominal** GDP, 2012: +4.0%

Growth in **real** GDP, 2012: +2.2%

Just a little less than half of the growth in nominal GDP during 2012 reflects rising prices, not rising production.

Real and Nominal GDP

Year	Price of HD	Quantity of HD	Price of HB	Quantity of HB
2010	\$1	100	\$2	50
2011	\$2	150	\$3	100
2012	\$3	200	\$4	150

Use **Current** Prices to Calculate **Nominal** GDP:

$$2010: (\$1 \text{ per HD}) \times (100 \text{ HDs}) + (\$2 \text{ per HB}) \times (50 \text{ HBs}) = \$100 + 100 = \$200$$

$$2011: (\$2 \text{ per HD}) \times (150 \text{ HDs}) + (\$3 \text{ per HB}) \times (100 \text{ HBs}) = \$300 + 300 = \$600$$

$$2012: (\$3 \text{ per HD}) \times (200 \text{ HDs}) + (\$4 \text{ per HB}) \times (150 \text{ HBs}) = \$600 + 600 = \$1200$$

Real and Nominal GDP

Year	Price of HD	Quantity of HD	Price of HB	Quantity of HB
2010	\$1	100	\$2	50
2011	\$2	150	\$3	100
2012	\$3	200	\$4	150

Use **Constant** (Base Year 2010) Prices to Calculate **Real** GDP:

$$2010: (\$1 \text{ per HD}) \times (100 \text{ HDs}) + (\$2 \text{ per HB}) \times (50 \text{ HBs}) = \$100 + 100 = \$200$$

$$2011: (\$1 \text{ per HD}) \times (150 \text{ HDs}) + (\$2 \text{ per HB}) \times (100 \text{ HBs}) = \$150 + 200 = \$350$$

$$2012: (\$1 \text{ per HD}) \times (200 \text{ HDs}) + (\$2 \text{ per HB}) \times (150 \text{ HBs}) = \$200 + 300 = \$500$$

Real and Nominal GDP

Year	Price of HD	Quantity of HD	Price of HB	Quantity of HB
2010	\$1	100	\$2	50
2011	\$2	150	\$3	100
2012	\$3	200	\$4	150

Year	Nominal GDP	Real GDP	GDP Deflator
2010	\$200	\$200	$(\$200/\$200) \times 100 = 100$
2011	\$600	\$350	$(\$600/\$350) \times 100 = 171$
2012	\$1200	\$500	$(\$1200/\$500) \times 100 = 240$

$$\text{GDP Deflator} = (\text{Nominal GDP} / \text{Real GDP}) \times 100$$

GDP and Well-Being

Because GDP is based on **market** value, it does not account for:

- Volunteer work.
- Environmental quality.
- Equality in income distribution.

But Mankiw's table 3 shows that real GDP per capita is highly correlated with other measures of the quality of life.