

## Growth rate real GDP over 2014

### 4 Pieces of GDP

#### 1. Consumption C 70%~

Private spending on goods and services not intended for use in future production

ex: <sup>non-durable</sup> pizza, <sup>durable</sup> washing machine, scooter

#### 2. Investment I 16-17%~

Private spending on tools, plant, and equipment used to produce future output

ex: shovel <sup>\$30</sup>, tractor <sup>\$500,000</sup> or thing

#### 3. Government Spending G

Spending by all levels of government on final goods and services

ex: planes, govt jobs

#### 4. Net Exports NX

Exports - Imports

ex: Jeep Toyota

		2013 (in billion)	Percent of total GDP
Consumption	C	\$11,484.3	68.5%
Investment	I	2,648	15.8
Government	G	3,143.9	18.7
Net Exports	NX	-508.2	-3

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

### Growth Rates

$$\text{Growth Rate of } X = \% \Delta X$$

$$= \frac{\text{Change in } X}{\text{Starting } X}$$

$$= \frac{(X_1 - X_0)}{X_0}$$

Ex:

GDP @ end 12' = 16,163

GDP @ end 13' = 16,678

GDP growth 13' =  $\frac{16,678 - 16,163}{16,163} = 0.03743$   
 = 3.74%

## Real vs. Nominal GDP

Recall:

GDP is market values

$$GDP = \sum (p \times q)$$

Nominal GDP: GDP in current dollars

Raw GDP data, unadjusted for price changes

Real GDP: GDP adjusted for changes in overall price level

→ GDP in "constant dollars"

Notation:

$$\left. \begin{array}{l} Y = \text{Real GDP} \\ P = \text{Price Level} \end{array} \right\} PY = \text{nominal GDP}$$

Base Year = 2009

## Computing Real GDP

Two Steps:

PY

1. Divide to filter out old prices

2. Multiply to put in new

$$\text{Real GDP}_t = \frac{\text{Nominal GDP}_t}{\text{Price Level}_t} \times 100$$

step 1 step 2

For 2013:  $\frac{16,768}{106.7} \times 100 = \$15,715$

2013 GDP in 2009 prices

"2013 GDP in 2009 Dollars"

### Shortcomings of GDP Data

#### 1. Non-Market Production

A. Household Work

B. Volunteer Work

#### 2. Underground Activity

#### 3. Environmental Impacts

#### 4. Leisure Time

### Does GDP = Happiness?

1. Wealthier people report greater life satisfaction than poorer people in the same country
2. Nations that are wealthier report greater life satisfaction than nations that are poorer
3. Over time, as nations experience economic growth, the people in those nations report greater levels of life satisfaction