

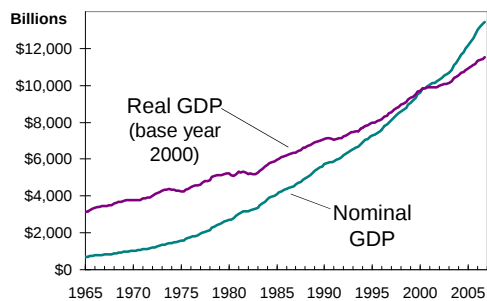
Tracking the Economy:

Measuring Changes in GDP over Time
Dealing with Inflation

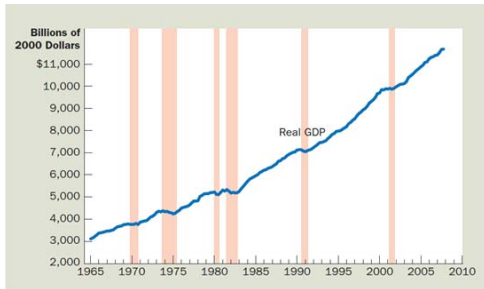
Tracking GDP Over Time

- **An Issue:** *Value of Money Not Constant*
 - A “dollar’s worth” of Spending Changes
 - “Money Doesn’t Buy What it Used To...”
- **Nominal GDP** values the production of goods and services at *current prices*
- **Real GDP** values the production of goods and services at *constant prices*

Time Path of U.S. GDP



Identifying Recessions



Nominal vs. Real Values

Prices and Quantities				
Year	Price of Hot dogs	Quantity of Hot dogs	Price of Hamburgers	Quantity of Hamburgers
2005	\$1	100	\$2	50
2006	\$2	150	\$3	100
2007	\$3	200	\$4	150

Calculating Nominal GDP				
2005	(\$1 per hot dog × 100 hot dogs) + (\$2 per hamburger × 50 hamburgers) = \$200			
2006	(\$2 per hot dog × 150 hot dogs) + (\$3 per hamburger × 100 hamburgers) = \$600			
2007	(\$3 per hot dog × 200 hot dogs) + (\$4 per hamburger × 150 hamburgers) = \$1,200			

Calculating Real GDP (base year 2005)				
2005	(\$1 per hot dog × 100 hot dogs) + (\$2 per hamburger × 50 hamburgers) = \$200			
2006	(\$1 per hot dog × 150 hot dogs) + (\$2 per hamburger × 100 hamburgers) = \$350			
2007	(\$1 per hot dog × 200 hot dogs) + (\$2 per hamburger × 150 hamburgers) = \$500			

Deflator: Ratio of Nominal/Real

2 TABLE

Real and Nominal GDP
This table shows how to calculate real GDP, nominal GDP, and the GDP deflator for a hypothetical economy that produces only hot dogs and hamburgers.

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2007	(\$1 per hot dog × 200 hot dogs) + (\$2 per hamburger × 150 hamburgers) = \$500			

Calculating the GDP Deflator				
2005	$\frac{\$600 \times \$200}{\$200 \times \$200} = 100\%$			
2006	$\frac{\$1,200 \times \$350}{\$200 \times \$600} = 140\%$			
2007	$\frac{\$1,200 \times \$500}{\$200 \times \$1,200} = 250\%$			

EXAMPLE: Nominal Values

	Pizza		Latte	
year	P	Q	P	Q
2006	\$10	400	\$2.00	1000
2007	\$11	500	\$2.50	1100
2008	\$12	600	\$3.00	1200

Compute **Nominal** GDP in each year:

$$\begin{array}{lcl}
 \text{2006: } \$10 \times 400 + \$2 \times 1000 & = & \$6,000 \\
 \text{2007: } \$11 \times 500 + \$2.50 \times 1100 & = & \$8,250 \\
 \text{2008: } \$12 \times 600 + \$3 \times 1200 & = & \$10,800
 \end{array}$$

Increase: 37.5%
30.9%

EXAMPLE: Real Values

	Pizza		Latte	
year	P	Q	P	Q
→ 2006	\$10	400	\$2.00	1000
2007	\$11	500	\$2.50	1100
2008	\$12	600	\$3.00	1200

Compute **Real** GDP in each year, using 2006 as the base year:

$$\begin{array}{lcl}
 \text{2006: } \$10 \times 400 + \$2 \times 1000 & = & \$6,000 \\
 \text{2007: } \$10 \times 500 + \$2 \times 1100 & = & \$7,200 \\
 \text{2008: } \$10 \times 600 + \$2 \times 1200 & = & \$8,400
 \end{array}$$

Increase: 20.0%
16.7%

EXAMPLE: Nominal vs. Real Values

year	Nominal GDP		Real GDP	
2006	\$6000		\$6000	
2007	\$8250	37.5%	\$7200	20.0%
2008	\$10,800	30.9%	\$8400	16.7%

■ Nominal GDP:

- Measured in "Current Prices"
- Change Reflects both Prices and Quantities

■ Real GDP: **GDP corrected for inflation**

- Measured in "Constant Prices" (a base year)
- Change Reflects only Quantities (prices held constant)

Wrap Up:

- Distinguished Real vs. Nominal Values
- Compare Dollar Values Over Time Carefully
- **REAL Values are What Matter**
- New Series: “Deflator Index” Isolates Prices

