

- Monday no school for fall break
- Tuesday was B-day, so we worked on Topic 2.2 from previous week
- Wednesday was PSAT day, therefore A-day classes didn't meet

Threadbare Thursday, October 13

Freelance Friday, October 14

- Warm up: TTYN re. the difference between nominal and real GDP. **NO NOTES!!**
- *Learning targets: I can define and calculate real and nominal GDP. I can calculate the GDP deflator.*
- **Homework due now: HW 2b and test corrections**
- **Quiz next week on circular flow and GDP**
- Agenda: Review warm up, short notes on GDP deflator, work on Fun Set 2.1.

Nominal vs. Real GDP Refresher

- Nominal GDP is a measure of how much is spent on output using current prices.
- Real GDP is a measure of how much is produced using constant prices.

Based on the definition of real GDP, do you predict real GDP should be higher or lower than nominal GDP?

Compare U.S. Nominal GDP To Real GDP (2012 To 2018)

The BEA has adjusted real GDP for inflation since 2012. The chart shows how much inflation has affected GDP since then.

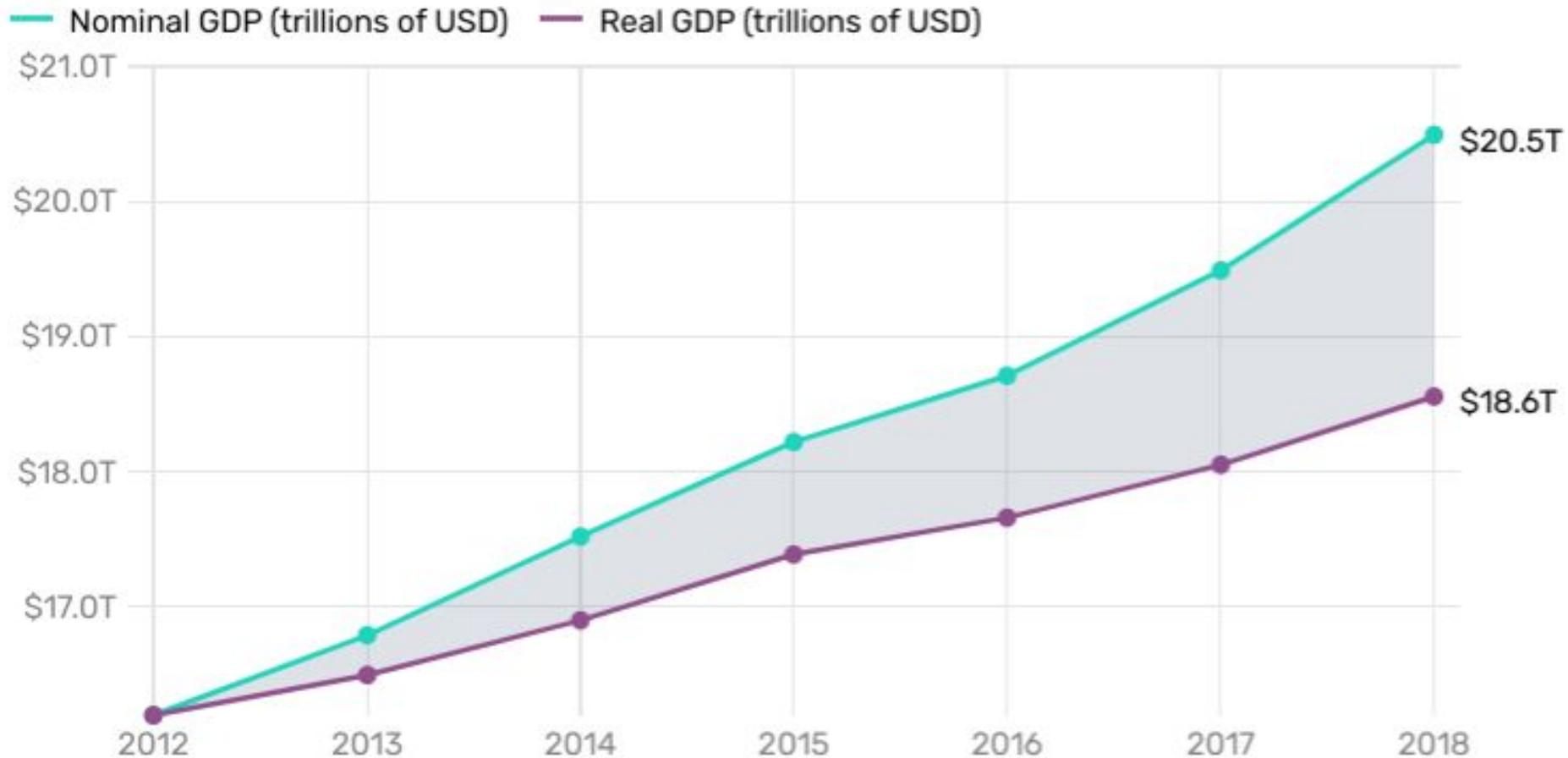


Chart: The Balance • Source: [U.S. Bureau of Economic Analysis](#)

What is Real GDP?

REAL GDP



Only growth

NOMINAL GDP



Prices and growth
(is higher)

$$\begin{array}{r} \$17.096 \text{ trillion} \\ \text{(REAL GDP)} \end{array} = \frac{\begin{array}{r} \$19.391 \text{ trillion} \\ \text{(NOMINAL GDP)} \end{array}}{\begin{array}{r} 1.13421 \\ \text{(DEFLATOR)} \end{array}}$$

Price Index and GDP Deflator

- A Price Index – used to measure price changes (inflation/deflation) from an agreed upon base year's prices
- GDP Deflator:
 - Reflects changes in the prices of goods and services but not quantities produced
 - Used to monitor average level of prices in the economy and thus inflation/deflation

The GDP Deflator

- The **GDP deflator** measures the changes in prices for all of the goods and services produced in an economy. Therefore, it measures the overall level of prices in an economy.
- Formula:

$$\text{GDP deflator} = 100 \times \frac{\text{nominal GDP}}{\text{real GDP}}$$

What does GDP Deflator show us and how can we use it?

- If **nominal GDP** shows us changes in quantities produced and changes in prices (QxP)
- If **real GDP** shows us changes in quantities only (Q)
- Then it follows that the **GDP Deflator** shows us changes in price!

$$\frac{Q \times P}{Q} = P$$

$$\frac{\text{Nominal}}{\text{Real}} = \text{GDP Defl.}$$

What does GDP Deflator show us and how can we use it?

- One way to measure the economy's **inflation rate** is to compute the percentage change in the GDP deflator from one year to the next:

$$\frac{\text{GDP Def Y2} - \text{GDP Def Y1}}{\text{GDP Defl Y1}} \times 100 = \text{Inflation!}$$

GDP per Capita = Real GDP ÷ population

- Is the best measurement of a country's standard of living (wealth, comfort, material goods, and necessities available).
- Shows how wealthy or well-off a country feels to its citizens
- It is **NOT** the average income of citizens

Two ways to calculate real GDP

Year	Pizza		Latte	
	<i>P</i>	<i>Q</i>	<i>P</i>	<i>Q</i>
2002	\$10	400	\$2.00	1000
2003	\$11	500	\$2.50	1100
2004	\$12	600	\$3.00	1200

5. Based on the data above, compute the nominal GDP for each year as well as the change in nominal GDP from 2002-2003 and 2003-2004.
6. Based on the data above, use 2002 as the base year and compute the real GDP for each year as well as the change in real GDP from 2002-2003 and 2003-2004.

1. Assume that the nominal GDP is \$60 billion and the real GDP is \$40 billion. Calculate the GDP deflator.
2. Assume that the nominal GDP is \$70 billion and the GDP deflator is 140. Calculate the real GDP.
3. Assume that the real GDP in Year 2022 is \$8000 and the GDP deflator is 200. Calculate the Nominal GDP.
4. In an economy, Nominal GDP for year 2005 (base year = 1996) is \$60 billion and the GDP deflator 2005 (base year = 1996) is 120. Calculate the Real GDP for 2005.

Fun Set 2.1!!!



OUTPUTS AND PRICES IN GALA LAND

This Year's Output	This Year's Price
400 loaves of bread	\$6 per loaf
1,000 gallons of water	\$2 per gallon
800 pieces of fruit	\$2 per piece

Gala Land produces three final goods: bread, water, and fruit. The table above shows this year's output and price for each good.

- Calculate this year's nominal gross domestic product (GDP).
- Assume that in Gala Land the GDP deflator (GDP price index) is 100 in the base year and 150 this year. Calculate each of the following.
 - The inflation rate, expressed as a percentage, between the base year and this year
 - This year's real GDP
- Since the base year, workers have received a 20 percent increase in their nominal wages. If workers face the same inflation that you calculated in part (b)(i), what has happened to their real wages? Explain.
- If the GDP deflator in Gala Land increases unexpectedly, would a borrower with a fixed-interest-rate loan be better off or worse off? Explain.