ECO 181 Lecture 03

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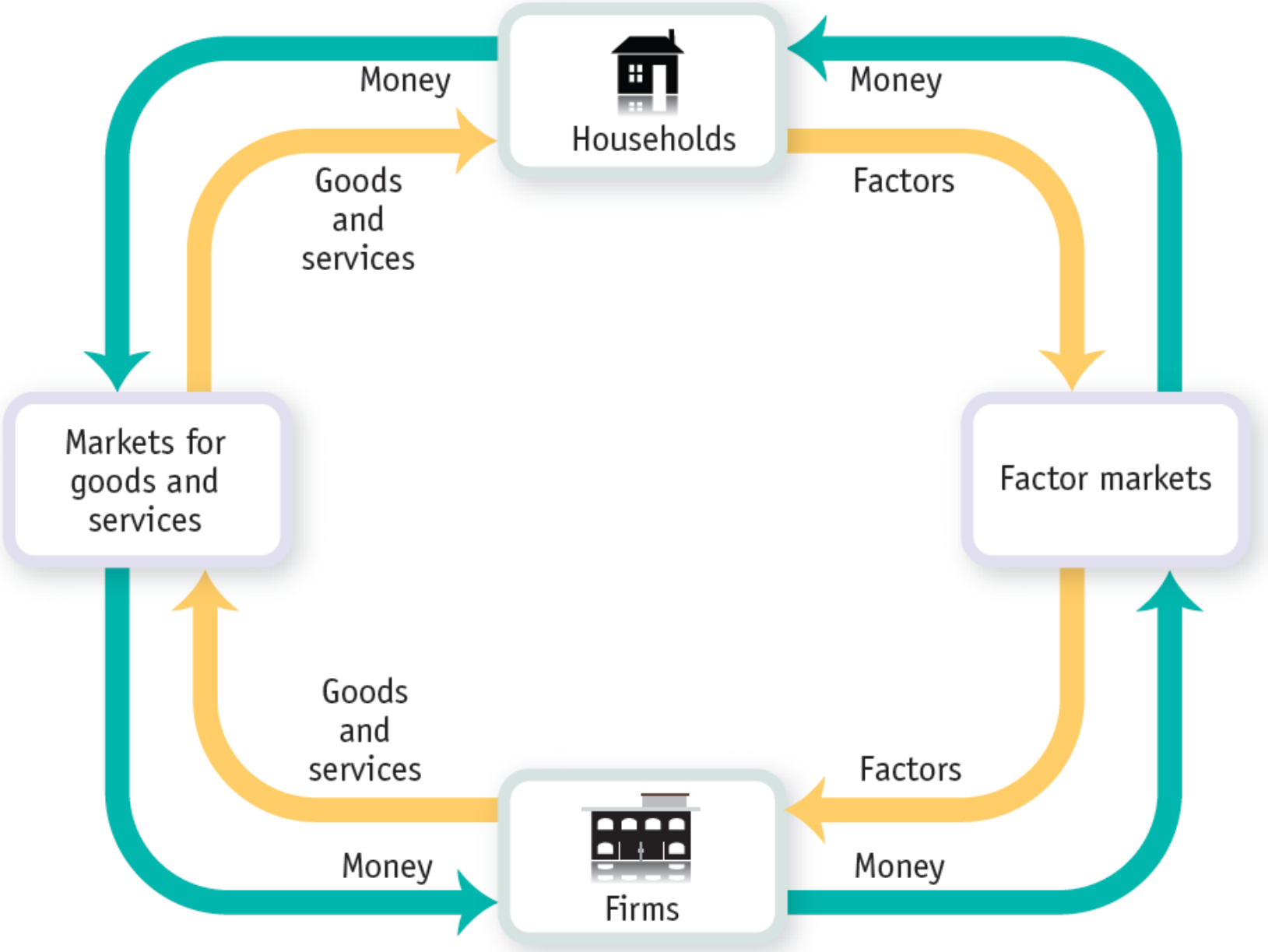
Microeconomics versus Macroeconomics

Microeconomic Questions	Macroeconomic Questions
Should I go to business school or take a job right now?	How many people are employed in the economy as a whole this year?
What determines the salary offered by Citibank to Cherie Camajo, a new MBA?	What determines the overall salary levels paid to workers in a given year?
What determines the cost to a university or college of offering a new course?	What determines the overall level of prices in the economy as a whole?
What government policies should be adopted to make it easier for low-income students to attend college?	What government policies should be adopted to promote employment and growth in the economy as a whole?
What determines whether Citibank opens a new office in Shanghai?	What determines the overall trade in goods, services, and financial assets between the United States and the rest of the world?

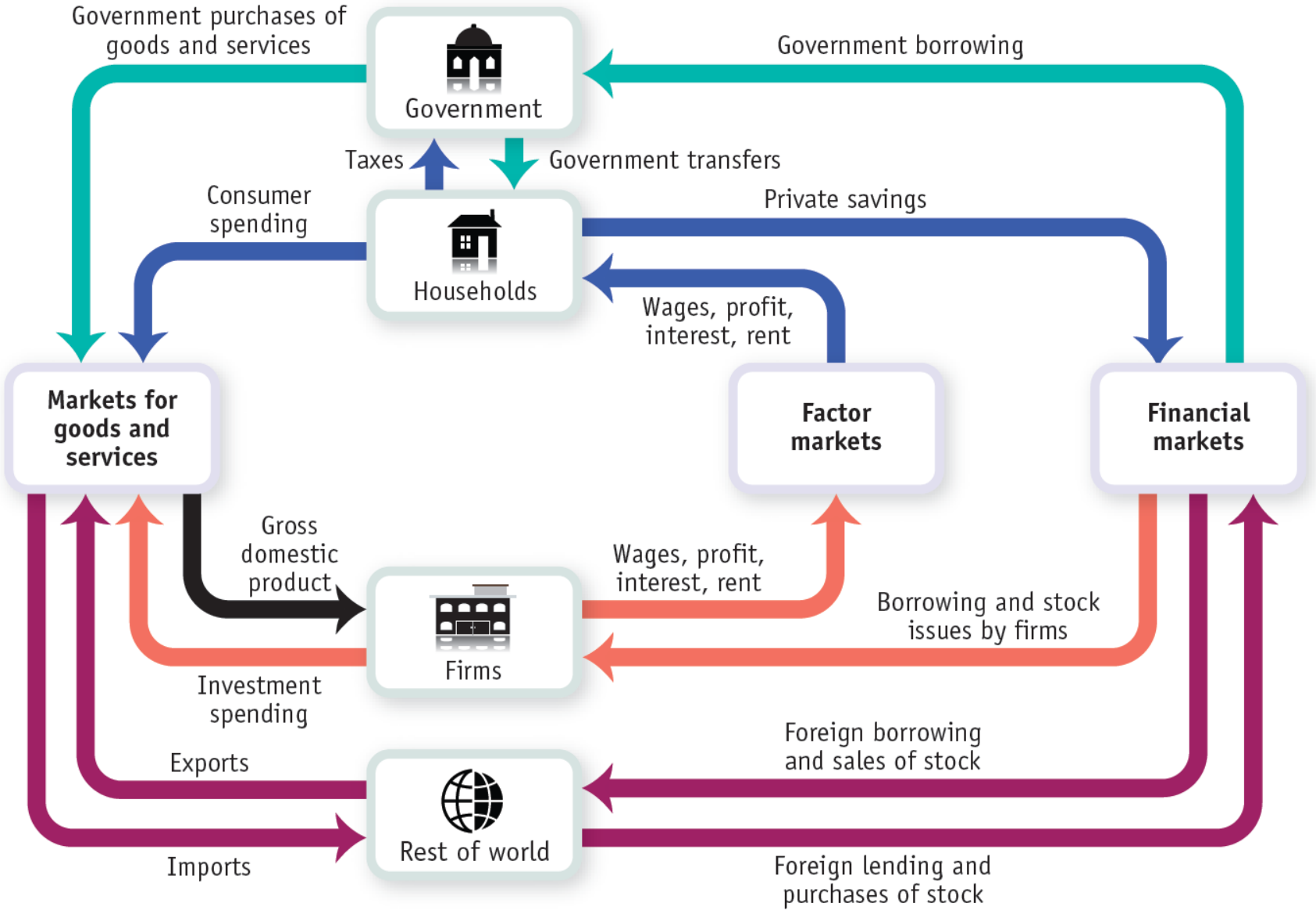
Real World Data

- Federal Reserve Economic Data
- Bureau of Economic Analysis (BEA)
- Bureau of Labor Statistics (BLS)
- NBER Public Use Data Archive

Circular-Flow Diagram



Circular-Flow Diagram



Gross Domestic Product

- **Gross domestic product**, or GDP, is the total value of all final goods and services produced in the economy during a given year.




Gross Domestic Product

- **Final goods and services** are goods and services sold to the final, or end, user.
- **Intermediate goods and services** are goods and services—bought from one firm by another firm—that are inputs for production of final goods and services.

Gross Domestic Product

- **Calculating GDP**
  1. Production Method: adding up total value of all final goods and services produced
  2. Expenditure Method: adding up spending on all domestically produced goods and services *(the most widely used approach)*
  3. Income Method: adding up total factor income earned by households from firms in the economy

Gross Domestic Product

2. Aggregate spending on domestically produced final goods and services = $21,500

	American Ore, Inc.	American Steel, Inc.	American Motors, Inc.	Total factor income
Value of sales	$4,200 (ore)	$9,000 (steel)	$21,500 (car)	
Intermediate goods	0	4,200 (iron ore)	9,000 (steel)	
Wages	2,000	3,700	10,000	$15,700
Interest payments	1,000	600	1,000	2,600
Rent	200	300	500	1,000
Profit	1,000	200	1,000	2,200
Total expenditure by firm	4,200	9,000	21,500	
Value added per firm = Value of sales – Cost of intermediate goods	4,200	4,800	12,500	

3. Total payments to factors = $21,500

1. Value of production of final goods and services, sum of value added = $21,500

Gross Domestic Product

$$GDP = C + I + G + X - IM$$

- C: consumption
- I: investment
- G: government spending
- X: exports
- IM: imports

$$\text{Net exports} = X - IM$$

Gross Domestic Product

- **Transfer Payment**: any payment by a government to a household that is not in exchange for a good or service.
- **Example**: Social Security benefits, unemployment insurance benefits, and welfare payments
  - In March 2020, the COVID-19 pandemic hit the United States and resulted in businesses, schools, and other non-essential operations being shut down. In response, the federal government passed and administered a series of historically robust cash transfer programs, including a series of Economic Impact Payments (EIPs or stimulus checks), expanded unemployment insurance, and an expanded child tax credit. Studies find these measures helped low- and middle-income families build their savings, and protected many families from rising poverty and hardship.

Gross Domestic Product

- Bureau of Economic Analysis (BEA)

Inflation and Deflation

- A rising overall level of prices is **inflation**.
- A falling overall level of prices is **deflation**.
- **Hyperinflation** refers to rapid and unrestrained price increases in an economy, typically at rates exceeding 50% each month over time.

Real and Nominal GDP

- **Real GDP** is the total value of all final goods and services produced in the economy during a given year, calculated using the prices of a selected base year.
- **Nominal GDP** is the value of all final goods and services produced in the economy during a given year, calculated using the prices current in the year in which the output is produced.

Real and Nominal GDP

Example: For an economy that produces only two goods: hot dogs and hamburgers. The table shows the prices and quantities produced of the two goods in the years 2019, 2020, and 2021.

Prices and Quantities

Year	Price of Hot Dogs	Quantity of Hot Dogs	Price of Hamburgers	Quantity of Hamburgers
2019	$1	100	$2	50
2020	2	150	3	100
2021	3	200	4	150

Difference between Real and Nominal GDP

Example: Assume: Two years (year 1 and year 2); Only produce apple

$P_1 = 0.5 dollars/lb$

$P_2 = 0.55 dollars/lb$

$Q_1 = 2000 lbs$

$Q_2 = 2000 lbs$

$$\text{Nominal } GDP_1 =$$

$$\text{Nominal } GDP_2 =$$

- Does the country produce more apples in year 2?

Difference between Real and Nominal GDP

Real and Nominal GDP

- **Nominal GDP** reflects both the quantities of goods and services the economy is producing and the prices of those goods and services.
- By contrast, by holding prices constant at base-year levels, **real GDP** reflects only the quantities produced.

- GDP deflator reflects only the prices of goods and services.

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

GDP deflator

Prices and Quantities

Year	Price of Hot Dogs	Quantity of Hot Dogs	Price of Hamburgers	Quantity of Hamburgers
2019	$1	100	$2	50
2020	2	150	3	100
2021	3	200	4	150

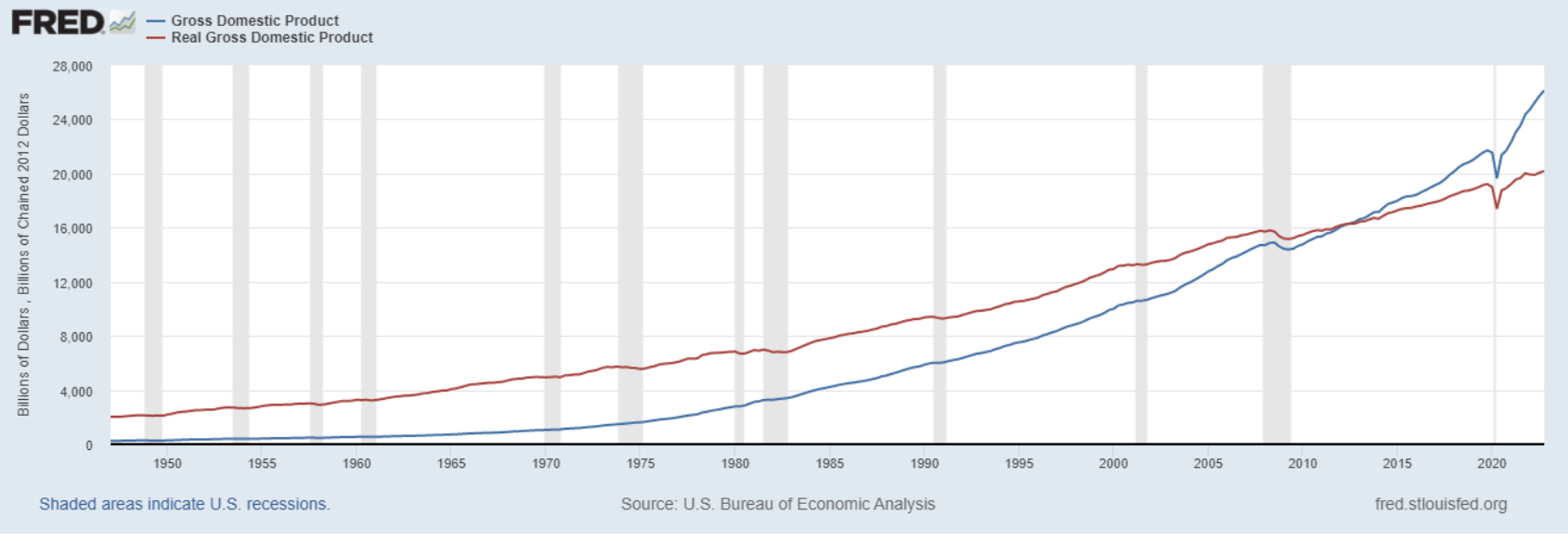
Inflation Rate

- **Inflation** describes a situation in which the economy's overall price level is rising.
- The **inflation rate** is the percentage change in some measure of the price level from one period to the next.

$$\text{Inflation rate in year 2} = \frac{\text{GDP deflator in year 2} - \text{GDP deflator in year 1}}{\text{GDP deflator in year 1}} \times 100$$

Real World Data

- Federal Reserve Economic Data



Real World Data

- Bureau of Economic Analysis (BEA)
- **Chained dollars** is the method of calculating changes in real GDP using the average between the growth rate calculated using an early base year and the growth rate calculated using a late base year. As a result, U.S. statistics on real GDP are always expressed in chained dollars.

Table 3. Gross Domestic Product: Level and Change from Preceding Period

Line		Billions of dollars						Billions of chained (2012) dollars								
		2022[r]	Seasonally adjusted at annual rates					2022[r]	Seasonally adjusted at annual rates					Change from preceding period		
			2021	2022					2021	2022				2022[r]	2022	
			Q4	Q1	Q2	Q3	Q4[r]		Q4	Q1	Q2	Q3	Q4[r]		Q3	Q4[r]
1	**Gross domestic product (GDP)**	25,462.8	**24,349.1**	**24,740.5**	**25,248.5**	**25,723.9**	**26,138.0**	**20,014.1**	**20,006.2**	**19,924.1**	**19,895.3**	**20,054.7**	**20,182.5**	**404.3**	**159.4**	**127.8**

The Consumer Price Index

- **Consumer price index (CPI)**: a measure of the overall cost of the goods and services bought by a typical consumer
- **Example**: Survey Consumers to determine a fixed basket of goods: Basket = 4 hot dogs, 2 hamburgers

Year	Price of Hot Dogs	Price of Hamburgers
2019	$1	$2
2020	2	3
2021	3	4

The Consumer Price Index

- **Example**: Survey Consumers to determine a fixed basket of goods: Basket = 4 hot dogs, 2 hamburgers

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- Compute the Cost of the Basket of Goods in Each Year

The Consumer Price Index

- Choose One Year as a Base Year (2019) and Compute the CPI in Each Year

$$CPI = \frac{\text{Price of basket in current year}}{\text{Price of basket in base year}} \times 100$$

The Consumer Price Index

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

$$CPI = \frac{\text{Price of basket in current year}}{\text{Price of basket in base year}} \times 100$$

$$\text{Inflation rate in year 2} = \frac{\text{GDP deflator in year 2} - \text{GDP deflator in year 1}}{\text{GDP deflator in year 1}} \times 100$$

$$\text{Inflation rate in year 2} = \frac{\text{CPI in year 2} - \text{CPI in year 1}}{\text{CPI in year 1}} \times 100$$

The Consumer Price Index

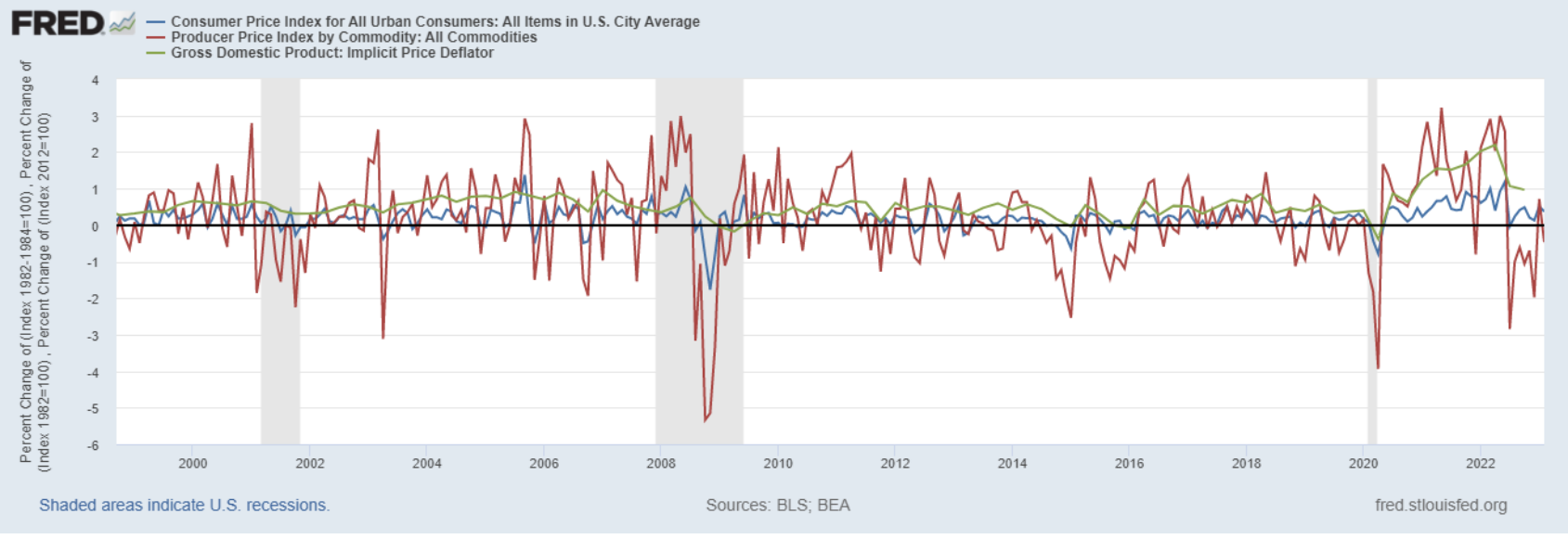
- Use the CPI to Compute the Inflation Rate from Previous Year

The Consumer Price Index

- The most widely used measure of prices in the United States is the consumer price index (often referred to simply as the CPI), which is intended to show how the cost of all purchases by a typical urban family has changed over time. It is calculated by surveying market prices for a market basket that is constructed to represent the consumption of a typical family of four living in a typical American city.
- Federal Reserve Economic Data

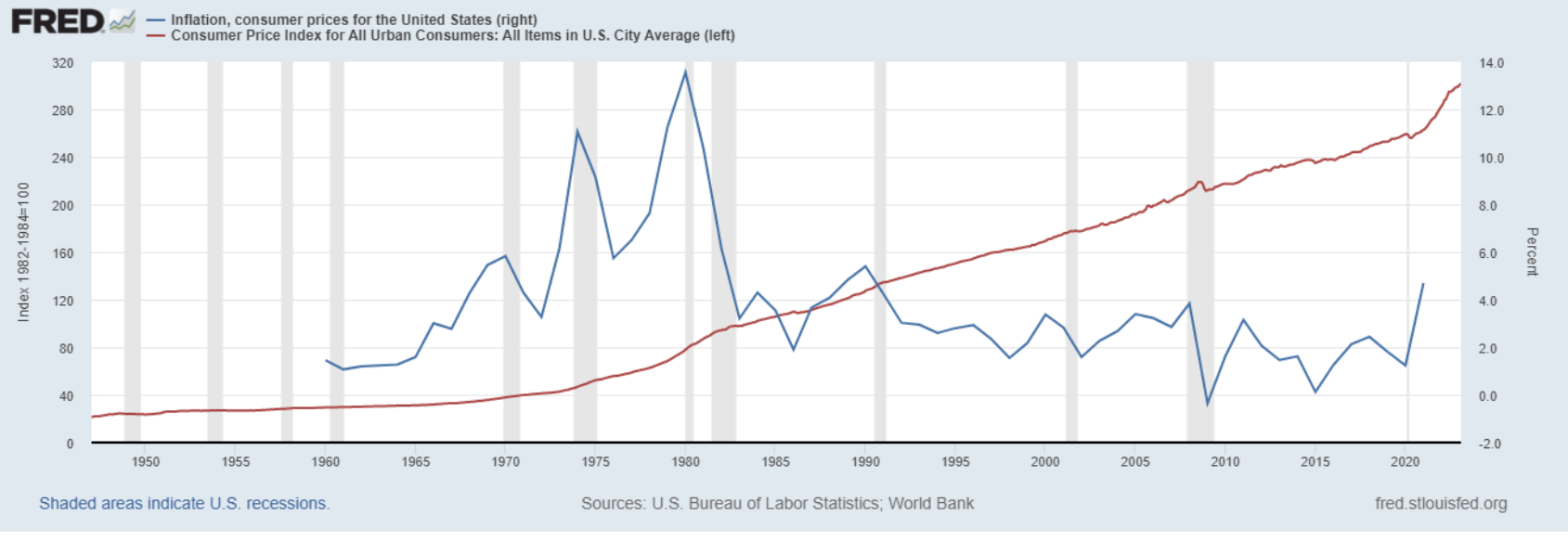
Other Price Measures

- **The producer price index**: or PPI, measures changes in the prices of goods purchased by producers.



Inflation and Deflation

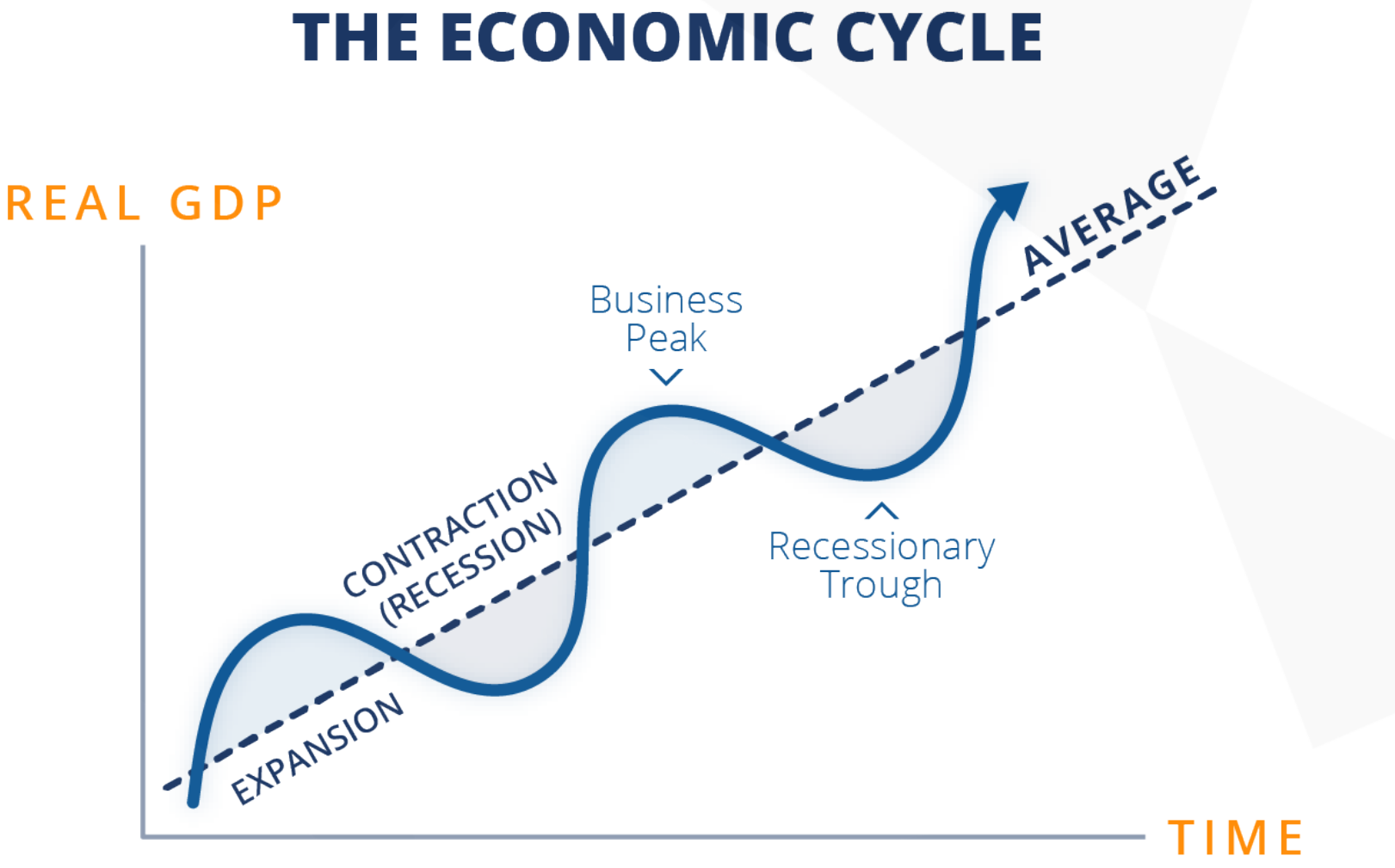
- **Inflation**: A rising overall level of prices.
- **Deflation**: A falling overall level of prices. **Disinflation** refers to a slowing in the rate of inflation.
- The economy has **price stability** when the overall level of prices changes slowly or not at all.



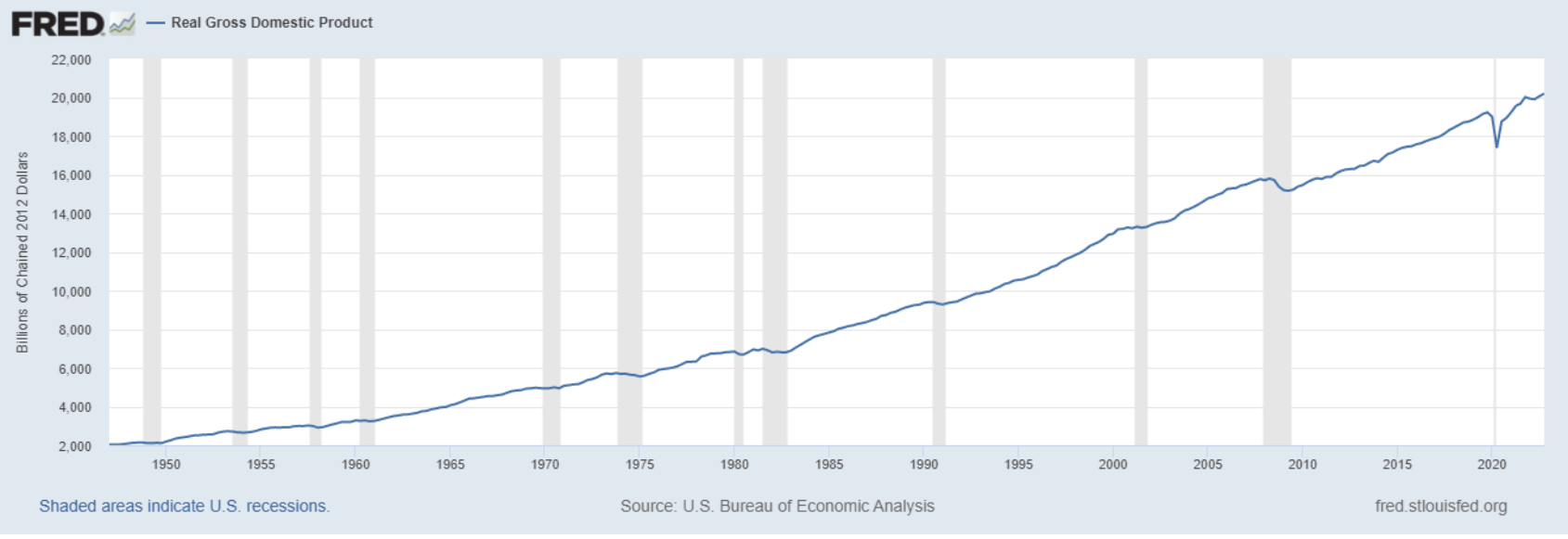
Business Cycle

- **Recessions**, or contractions, are periods of economic downturn when output and employment are falling.
- **Expansions**, or recoveries, are periods of economic upturn when output and employment are rising.
- **The business cycle** is the short-run alternation between recessions and expansions.

Business Cycle

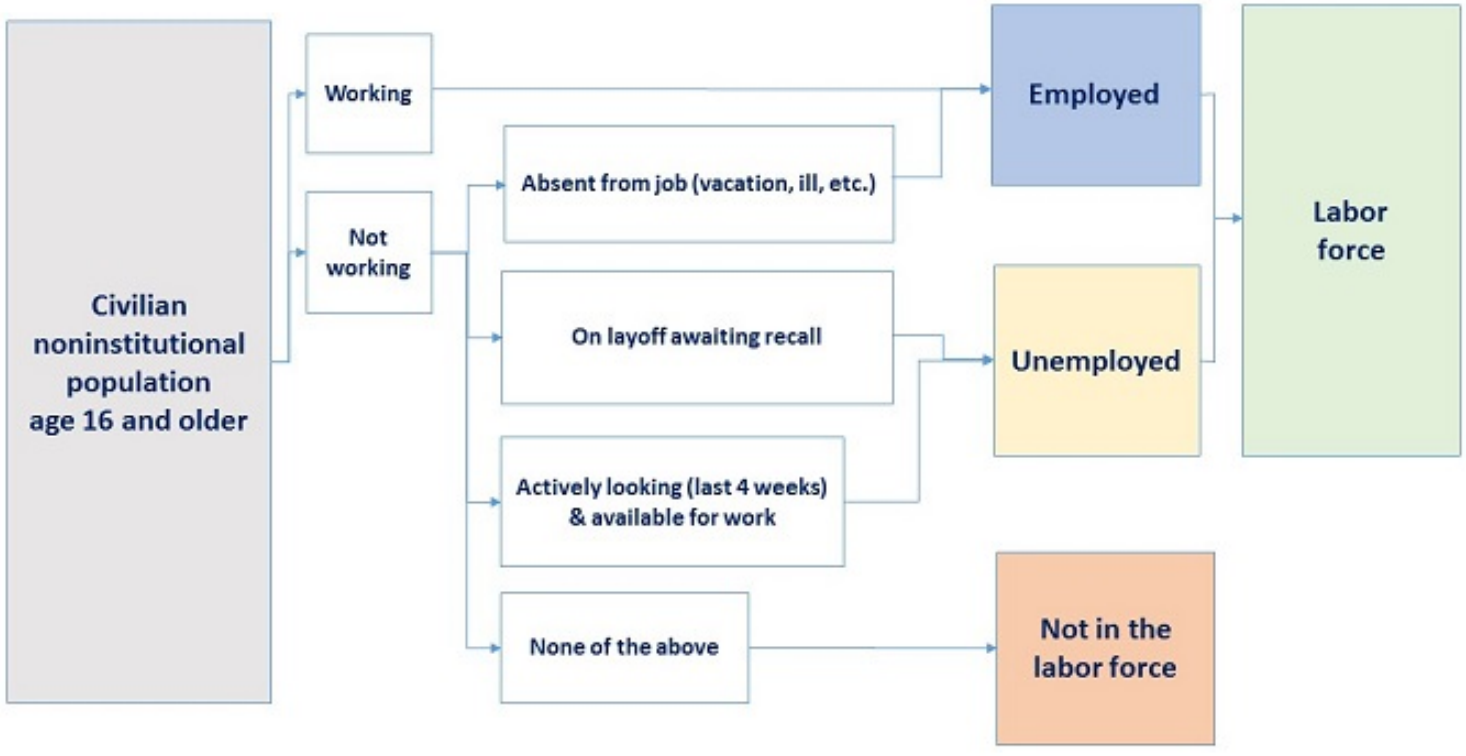


Business Cycle



U.S. Laber Market

- U.S. Bureau of Labor Statistics



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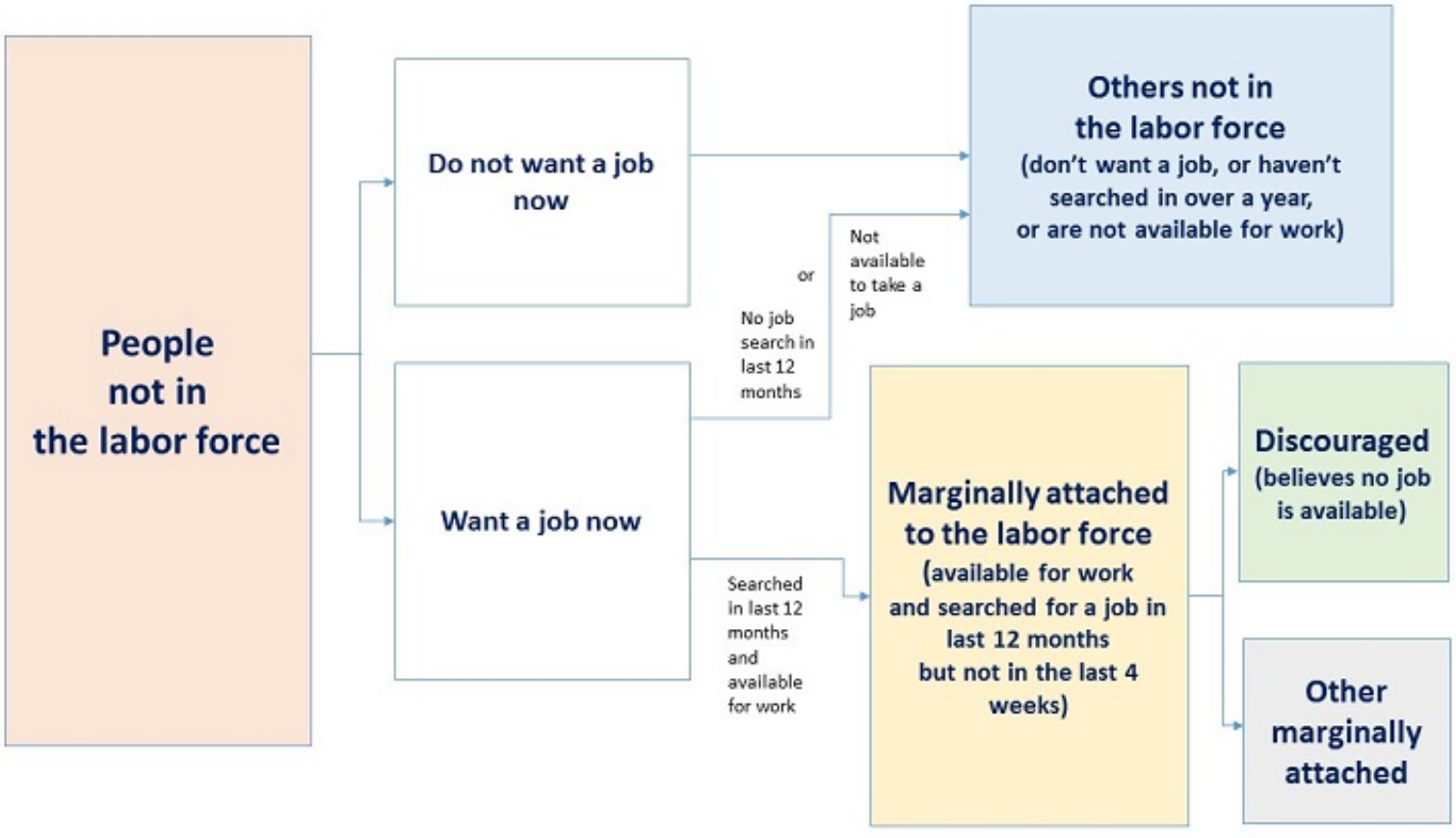
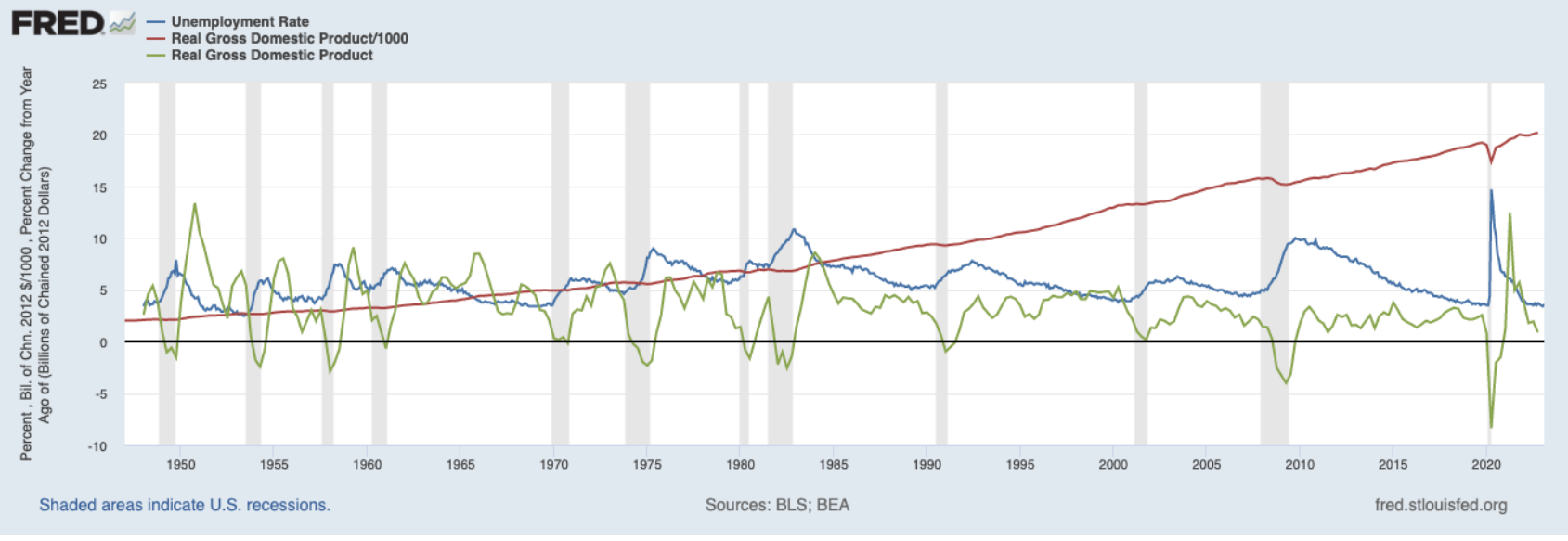


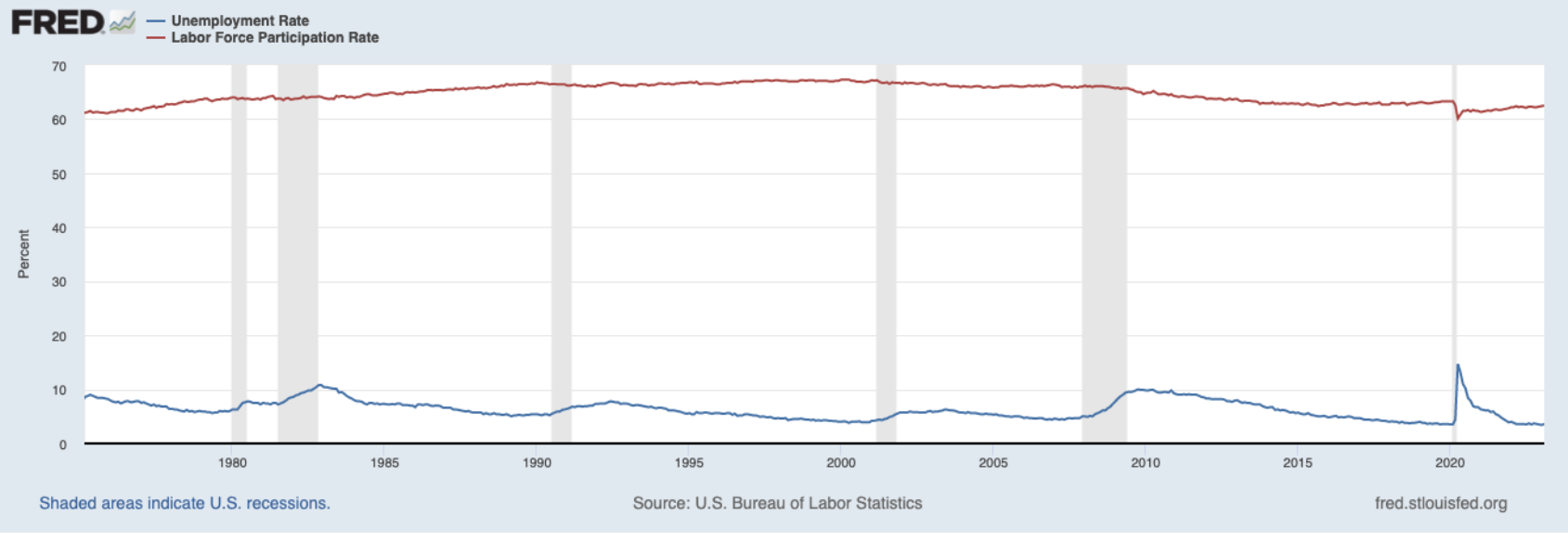
Unemployment Rate

$$\text{Unemployment rate} = \frac{\text{Number of unemployed workers}}{\text{Labor force}} \times 100$$

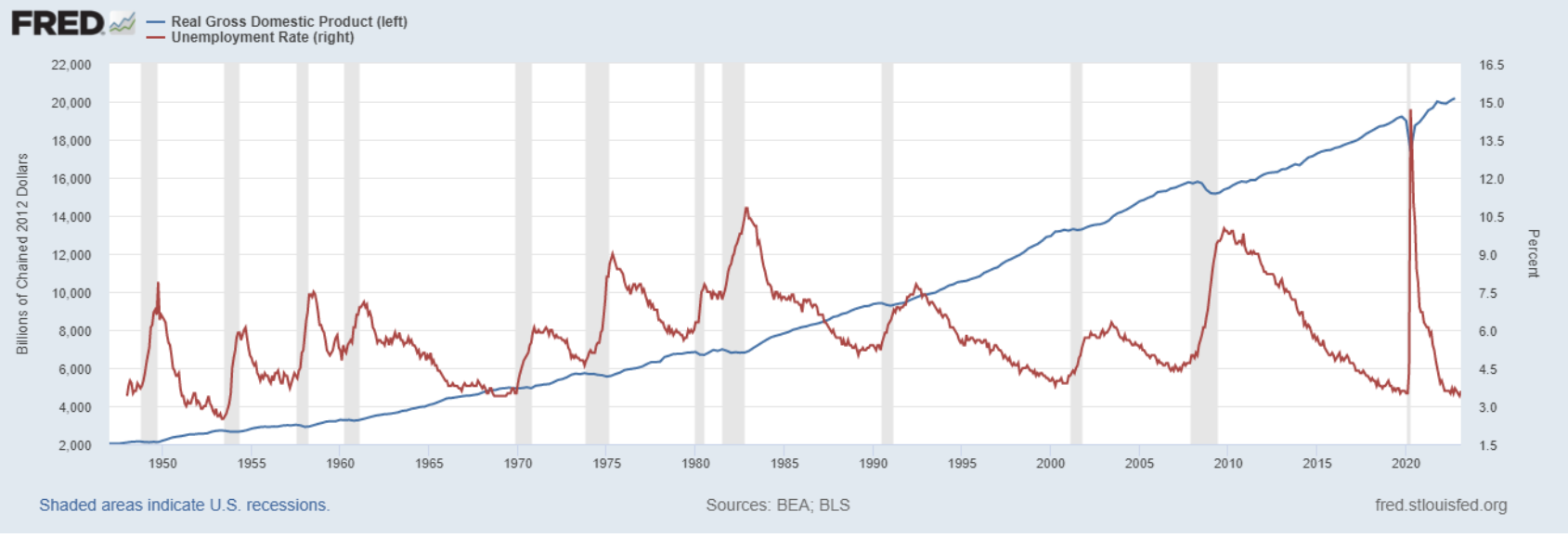


Labor force participation rate

$$\text{Labor force participation rate} = \frac{\text{Labor force}}{\text{Population age 16 and older}} \times 100$$

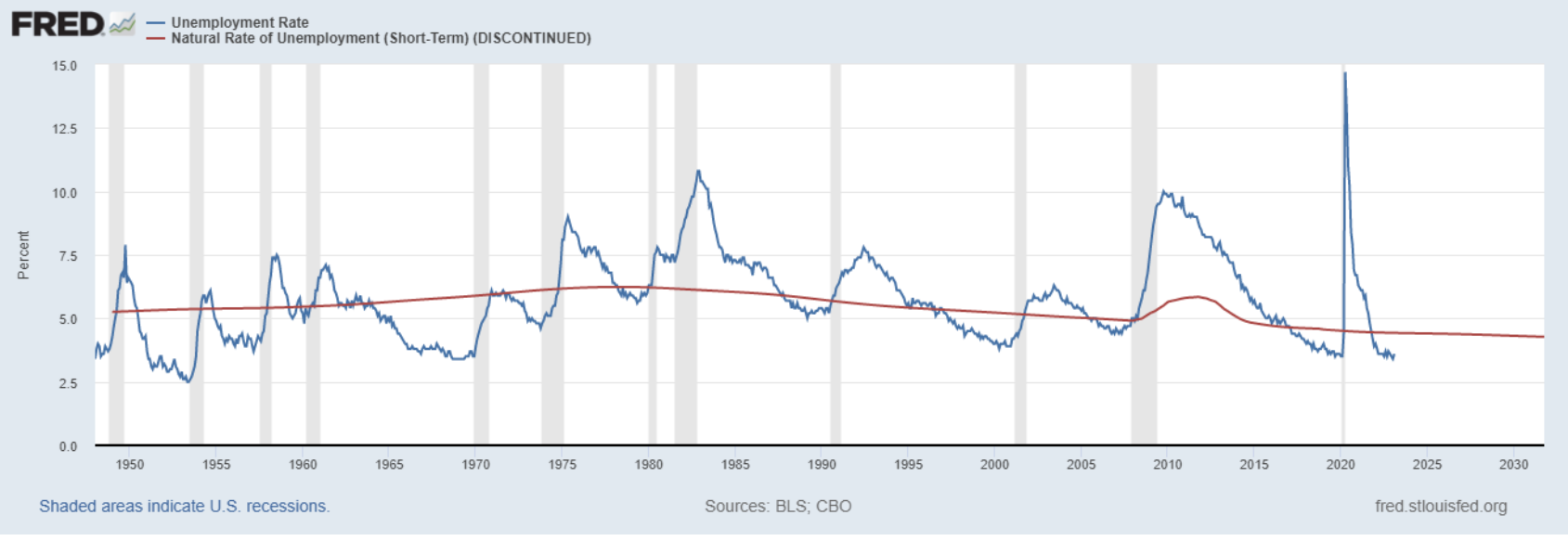


Unemployment Rate and Business Cycle



The Nature Rate of Unemployment

- **The natural rate of unemployment** is the normal unemployment rate around which the actual unemployment rate fluctuates.



Types of Unemployment

- **Frictional unemployment** is unemployment due to the time workers spend in job search.
- **Structural unemployment** is unemployment that results when there are more people seeking jobs in a particular labor market than there are jobs available at the current wage rate.
- **Cyclical unemployment** is the deviation of the actual rate of unemployment from the natural rate due to downturns in the business cycle.

Types of Unemployment

$$\text{Natural unemployment} = \text{Frictional unemployment} + \text{Structural unemployment}$$

$$\text{Actual unemployment} = \text{Natural unemployment} + \text{Cyclical unemployment}$$