

Econ 2 - Lecture 6

Lecture Quiz 3 Released Today, Due Monday @ 12:30^{PM}

Discussion Activity # 2 This Week (top 3 of 5 count)

Midterm Exam on Monday, April 28th (Chapters 1-3)

↳ Old Midterm posted this week

Weekly Review Session on Thursday, 5:30^{PM} NH 1110

Today: CPI (3.2), Unemployment (3.3)

Monday: Unemployment (3.3), Midterm prep

Wednesday: Chapter 4.1 (not on midterm)

Last Class: Stable Prices

Policy makers target a 2% inflation rate

→ Avoid deflation ✓

→ Low, predictable inflation can help credit & labor markets operate more efficiently

→ what if inflation = 0%

GDP Deflator: can measure inflation using all GDP components

↓
workers do not like wage decreases!

Consumer Price Index (CPI): only consider the price of goods/services relevant to households

Inflation → real wages to fall

Step 1: Define basket of goods/services

↳ Include Consumption (C), Imports (M), used goods

Step 2: Weight goods/services based on relevance to household budget (relative importance)

Food = 13.6%, Coffee = 0.14%, Eye Care = 0.3%

Shelter = 35%, New Cars = 4.4%, Used Cars = 2.4%

Step 3: Calculate weighted basket cost for each year

2016

Good	Base Year Q / weight	Base Year P	Weighted Cost
Housing	30	100	$Q_{BY}^H \cdot P_{BY}^H = 30 \times 100 = 3000$
Food	50	10	$Q_{BY}^F \cdot P_{BY}^F = 50 \times 10 = 500$
Gas	20	4	$Q_{BY}^G \cdot P_{BY}^G = 20 \times 4 = 80$

Basket Cost_{BY} = \$3,580 (2016 Basket Cost) → Reference Point
 Compare future basket costs → keep Quantity Constant

Good	Base Yr Q	Base Yr P	2019 P
Housing	30	100	120
Food	50	10	20
Gas	20	4	2

$$\begin{aligned}
 \text{Basket Cost}_{2019} &= Q_{BY}^H \cdot P_{19}^H + Q_{BY}^F \cdot P_{19}^F + Q_{BY}^G \cdot P_{19}^G \\
 &= 30 \times 120 + 50 \times 20 + 20 \times 2 \\
 &= \$4,640
 \end{aligned}$$

Define **CPI**: Normalize base year basket cost to be 100

$$\text{CPI}_{cy} = \frac{\text{Basket Cost}_{cy}}{\text{Basket Cost}_{BY}} \times 100$$

$$\text{CPI}_{2019} = \frac{4,640}{3,580} \times 100 = 129.60$$

CPI vs. GDP Deflator

$$\begin{aligned}
 &\hookrightarrow \frac{Q_{BY} \times P_{cy}}{Q_{BY} \times P_{BY}} \times 100 \quad \hookrightarrow \frac{\text{Nom. GDP}}{\text{R. GDP}} \times 100 = \frac{Q_{cy} \cdot P_{cy}}{Q_{cy} \cdot P_{BY}} \times 100
 \end{aligned}$$

$$\text{Inflation Rate}_{y_1, y_2} = \frac{\text{CPI}_{y_2} - \text{CPI}_{y_1}}{\text{CPI}_{y_1}} \times 100$$

$$\text{CPI}_{BY} = \frac{Q_{2016} \times P_{2016}}{Q_{2016} \times P_{2016}} \times 100 = 100$$

$$\text{Inf. Rate}_{2014, 2019}^{BY, CY} = \frac{\text{CPI}_{19} - \text{CPI}_{14}}{\text{CPI}_{14}} \times 100 = \frac{129.60 - 100}{100} \times 100 = 29.6\%$$

$$\text{Inflation Rate}_{2020, 2025} = \frac{\text{CPI}_{25} - \text{CPI}_{20}}{\text{CPI}_{20}} \times 100$$

$$\text{CPI}_{2020} = 258.1$$

$$\text{CPI}_{2025} = 319.62$$

$$= \frac{319.62 - 258.1}{258.1} \times 100$$

$$= \frac{61.5}{258.1} \times 100 = 23.8\%$$

Goals:

* 1: High Standard of Living (GDP)

← GDP Deflator (inflation)

* 2: Stable Prices → CPI → ~2%/yr

* 3: Full Employment

What causes someone to become unemployed?

Many REASONS!

Role as Macroeconomist → isolate reasons for unemployment that represent economic health!

1.) Frictional Unemployment

- College student graduates decides to leave job on campus and search for work over the summer.
- Time lag in the hiring process
- friction in labor market: application, screening, interview, references, background, etc.

Not indicative of economic health

2. Seasonal Unemployment

predictable, annual patterns in employment (industry-specific)

Not indicative of economic health

3. Structural Unemployment

mismatch between employee skills and employer needs

Technology like AI, digitization → cause long-term unemployment

Usually positive for long-term economic growth

4. Cyclical Unemployment * = indicative of economic health

job loss from a decrease in production ($GDP = Y$)

Example: Covid Pandemic, movie theaters abandoned, $Y \downarrow$
jobs lost

Great Financial Crisis (2007 - 2009)

Declining auto sales, decrease in financial services

→ \downarrow in Y , job loss, unemployment \uparrow

Total Unemployment =

Frictional + Seasonal + Structural + Cyclical

Naturally Occurring
Unemployment

only occurs
when Y decreases

Goal \Leftrightarrow 0% cyclical

UE

Full-employment

- Natural Rate of Unemployment
- Not indicative of negative econ. activity

When cyclical UE = 0%

- ↳ Output is at "full-employment level of production"
- ↳ Full-Employment Output = \bar{Y} (Y -bar)

Calculate unemployment rate

329 mil \rightarrow Population

Working-Age Pop. 273.02 mil

Omit certain groups

< 16 years old,

institutionalized

↳ long-term care, prisons

Military (< 0.1%)

Labor force
= 170.59 mil

Not in Labor
force
= 102.4 mil

Employed
= 163.5 mil

Unemployed
= 7.08 mil

- Students

- Stay-at-home parents

- Retirees