

Econ 2 - Lecture 7 - 4/21/25

Lecture Quiz 4

Released 4/23, due 4/28

Midterm Exam in one week → Monday, April 28th

Head TA Assigning Seats → Left - Handers, email head TA!

Arrive early → maximize time

BRING A CALCULATOR (KENT IF NEEDED)

30 Multiple Choice Questions

We will provide

bubble sheet

↳ Bring Pencil/Pen

Equations

$$\text{Growth Rate}_{YrA, YrB} = \frac{\text{Value}_{YrB} - \text{Value}_{YrA}}{\text{Value}_{YrA}} \times 100$$

$$\text{CPI}_{\text{Current Year}} = \frac{\text{Basket Cost in Current Year}}{\text{Basket Cost in Base Year}} \times 100$$

$$\text{Weighted Basket Cost}_{\text{Current Year}} = p_{\text{Goods}_{\text{Current Year}}} \times Q_{\text{Goods}_{\text{Base Year}}}$$

$$\text{GDP Deflator}_{\text{Current Year}} = \frac{\text{Nominal GDP in Current Year}}{\text{Real GDP in Current Year}} \times 100$$

$$\text{Unemployment Rate} = \frac{\# \text{ Unemployed}}{\# \text{ in Labor Force}} \times 100$$

Today: finish up unemployment (3.3)

Wednesday: Introduction to Macroequilibrium (Chapter 4.1)

Not on exam

Goal #3: Full Employment

4 Categories of Unemployment

Frictional + Seasonal + Structural +

Naturally Occurring Unemployment

Potentially Long-term

Cyclical

Only occurs when output decreases

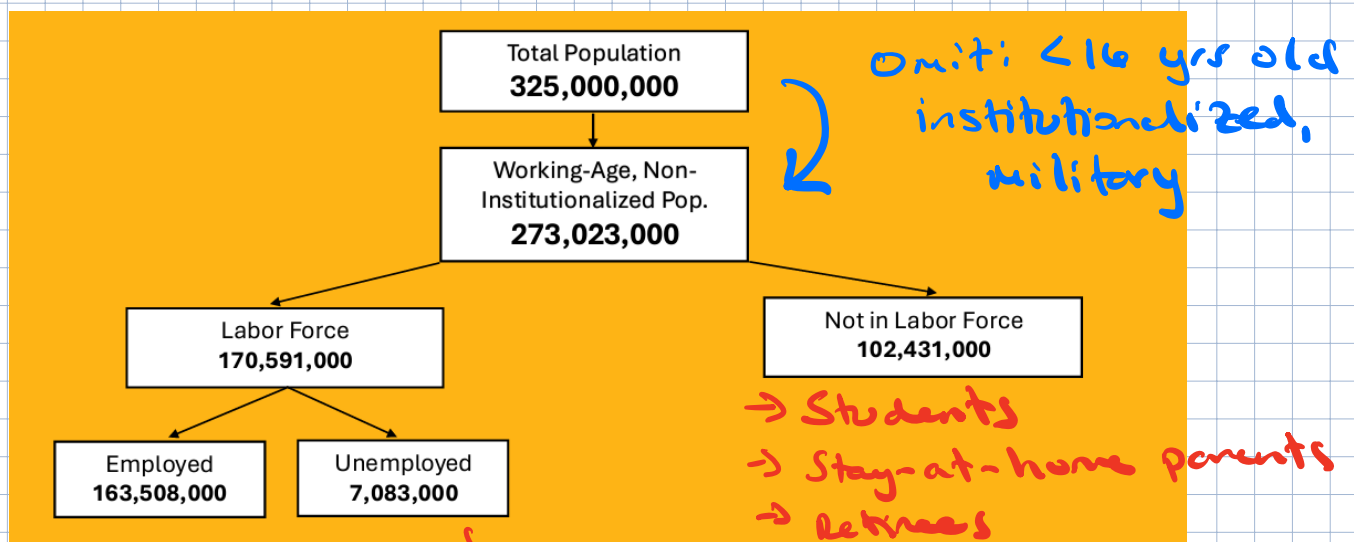
Full Employment = Cyclical UE = 0%

When cyclical UE = 0%

↳ output is at full-employment level of production

↳ Full-Employment Output = \bar{Y} (Y-bar)

A Picture of Unemployment



→ Worked for 1 hour last week

→ Vacation, sick leave, etc.

Employed

→ Do not have a job

→ Actively searching for work in past 4 weeks

→ Applying, interviewing, networking, etc.

If you "blitz apply" one day and wait for 6 weeks
→ Not in Labor force

Official Bureau of Labor Statistics (BLS)

→ Unemployment Rate = fraction of labor force that is unemployed

$$UE \text{ Rate} = \frac{\text{Unemployed}}{\text{Labor force}} \times 100 = \frac{\text{Unemployed}}{\text{Employed} + \text{Unemployed}} \times 100$$

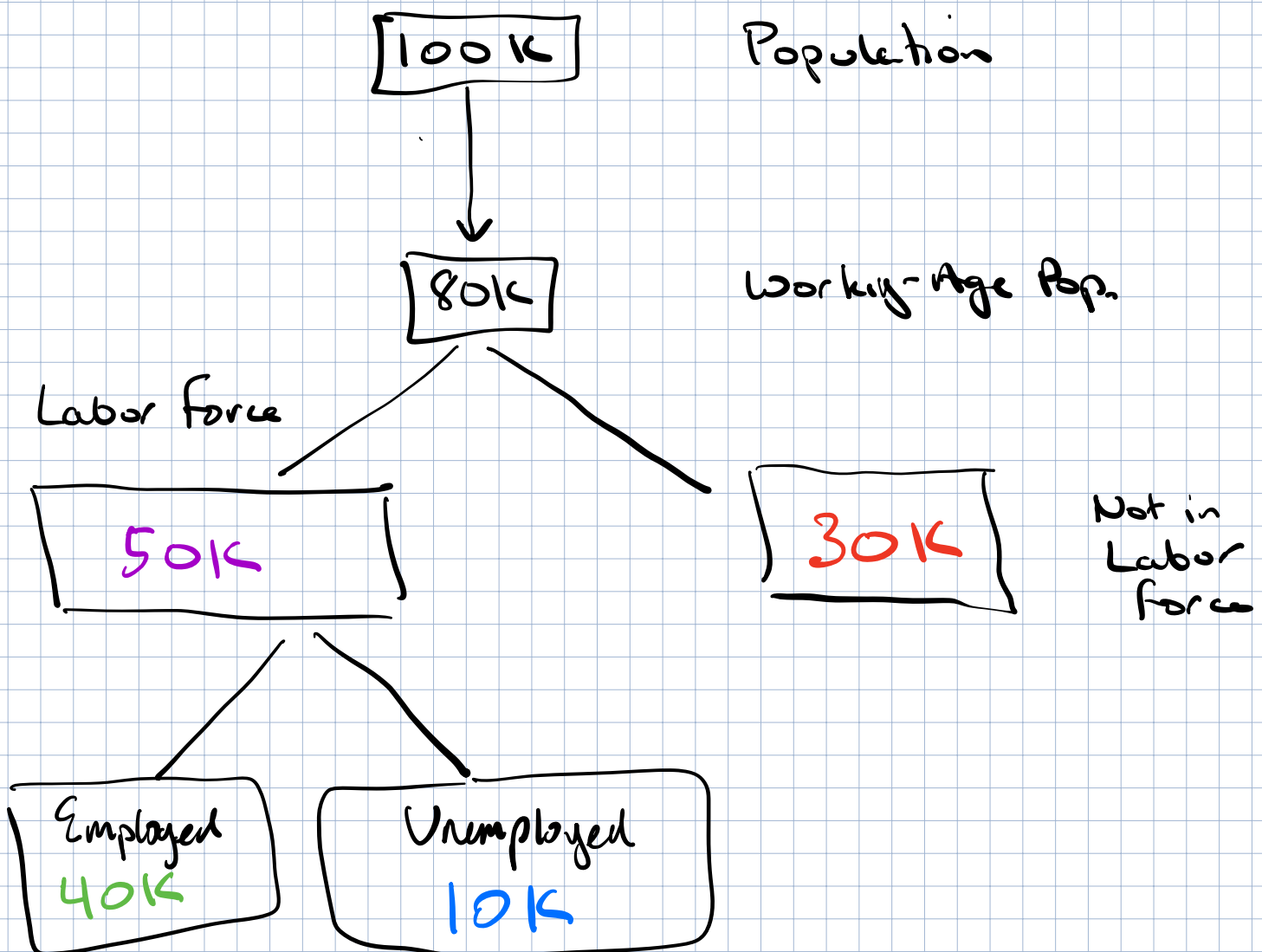
In March 2025

$$UE \text{ Rate} = \frac{7.1 \text{ mil}}{163.5 + 7.1} \times 100 = \frac{7.1 \text{ mil}}{170.6 \text{ mil}} \times 100 = 4.16\%$$

Labor Force Participation Rate

$$\text{LF Participation} = \frac{\text{Labor force}}{\text{Working-Age Pop.}} \times 100 = \frac{170.6}{273} \times 100 = 62.5\%$$

Calculation of UE Rate



$$\text{UE Rate} = \frac{10K}{50K} \times 100 = 20\%$$

Two Significant issues with our definition of unemployment

1.) 1 Hour of work = fully employed

Possible that some workers want more hours!

Involuntary Part-Time Workers (IPT)

Devin is unemployed \Rightarrow wants 40 hrs/week

Rachel is employed \Rightarrow works 20 hrs/week
but wants 40 hrs/week

Selene is employed \Rightarrow works 20 hrs/week
but wants 40 hrs/week

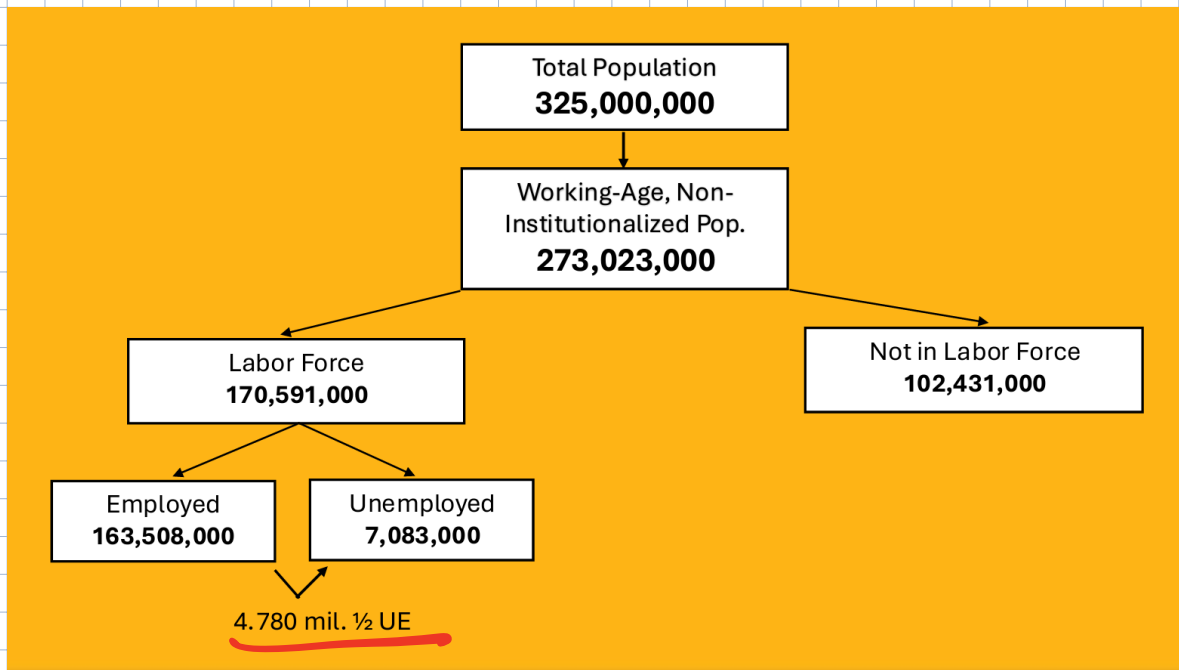
Devin = 1 unemployed worker

Rachel = 0.5 unemployed

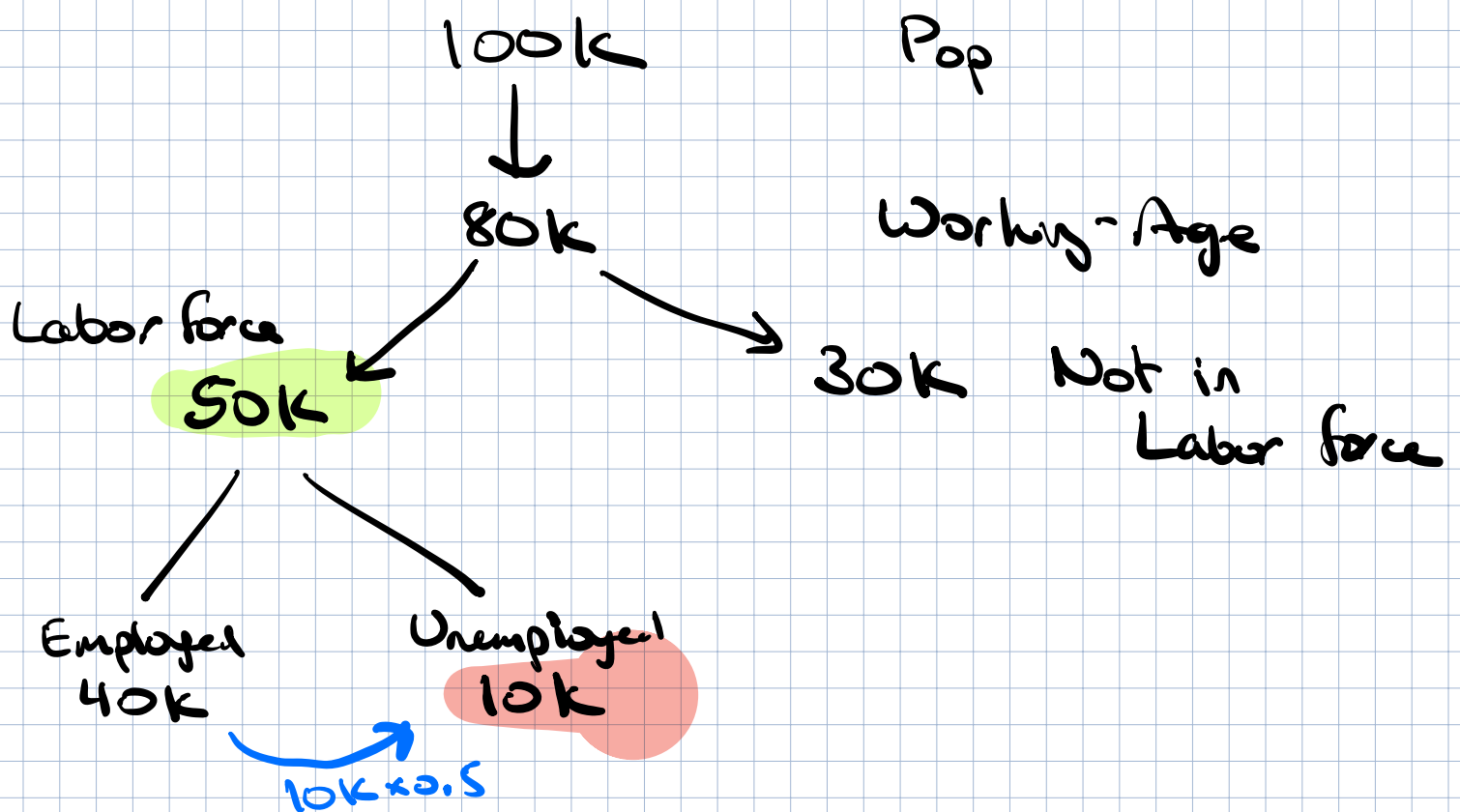
Selene = 0.5 unemployed

} 2 Involuntary x 0.5
Part-Time
workers

= 1 unemployed worker



$$\begin{aligned}
 \text{UE Rate considering IPT workers} &= \frac{\text{Unemployed} + 0.5 \cdot \text{IPT}}{\text{Labor Force}} \times 100 \\
 &= \frac{7.08 \text{ mil} + 0.5 \cdot 4.78 \text{ mil}}{170.6 \text{ mil}} \times 100 \\
 &= 5.56\%
 \end{aligned}$$



10k unemployed are 0.5 IPT

$$UE \text{ w/ IPT} = \frac{10k + 0.5 \times 10k}{50k} \times 100 = \frac{15k}{50k} \times 100$$

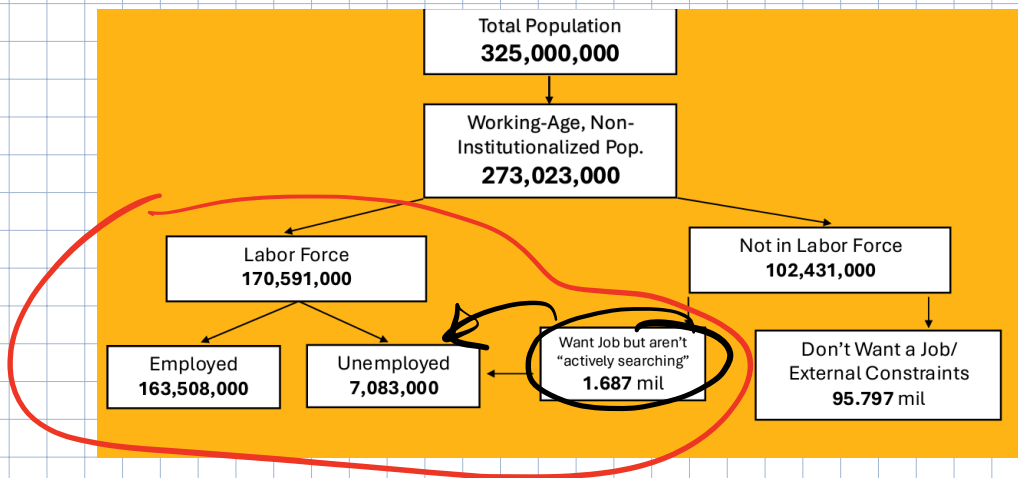
2nd concern: Actively searching
 ⇒ Limited to 4 weeks

Often: Apply to many jobs & wait, wait, wait, etc.

Define: Discouraged Workers

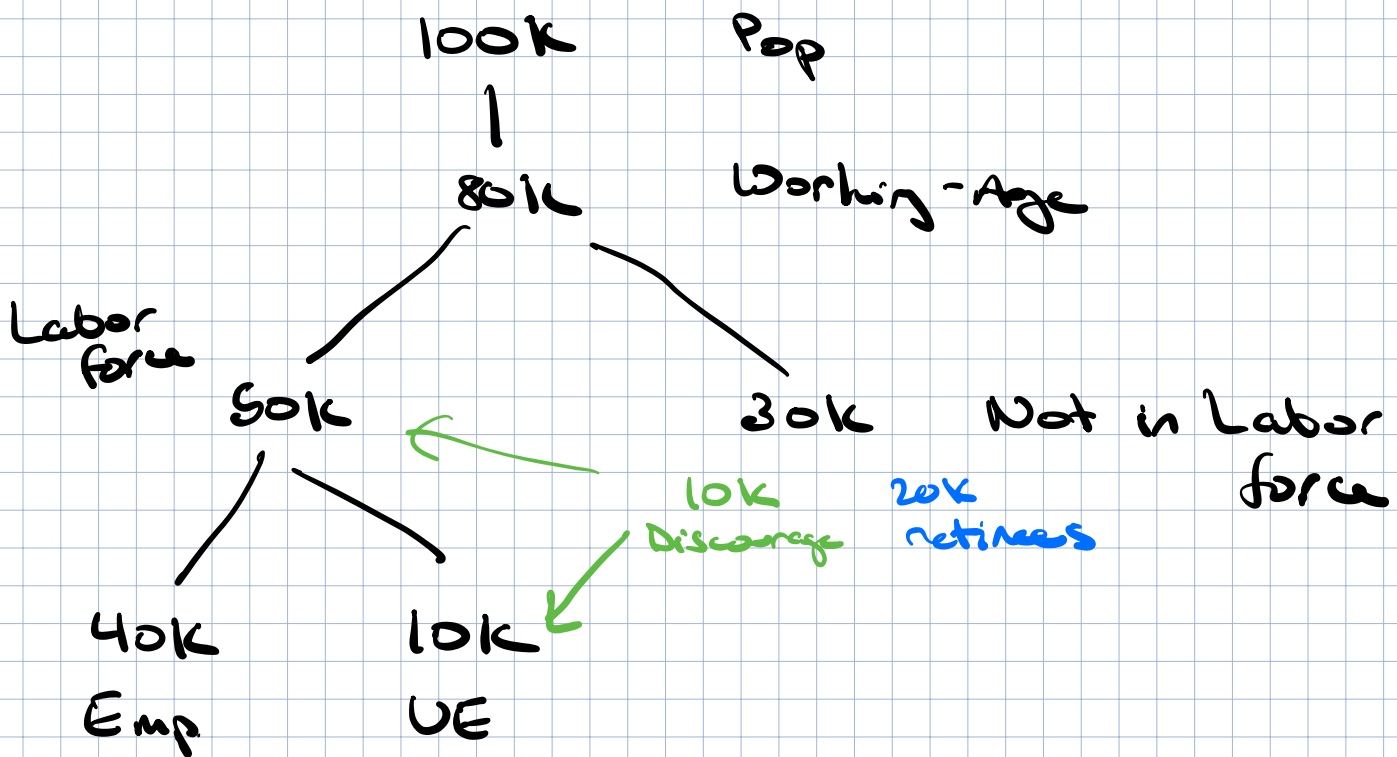
Want a job, have not searched actively in the last 4 weeks, BUT they have searched in the last 12 months

$$UE \text{ Rate considering discouraged workers} = \frac{\text{Unemployed} + \text{Discouraged}}{\text{Labor force} + \text{Discouraged}} \times 100$$



$$\begin{aligned}
 \text{UE Rate w/ Dis.} &= \frac{7.1 \text{ mil} + 1.7 \text{ mil}}{170.6 \text{ mil} + 1.7 \text{ mil}} \times 100 = \frac{8.8}{172.3} \times 100 \\
 &= 5.1\%
 \end{aligned}$$

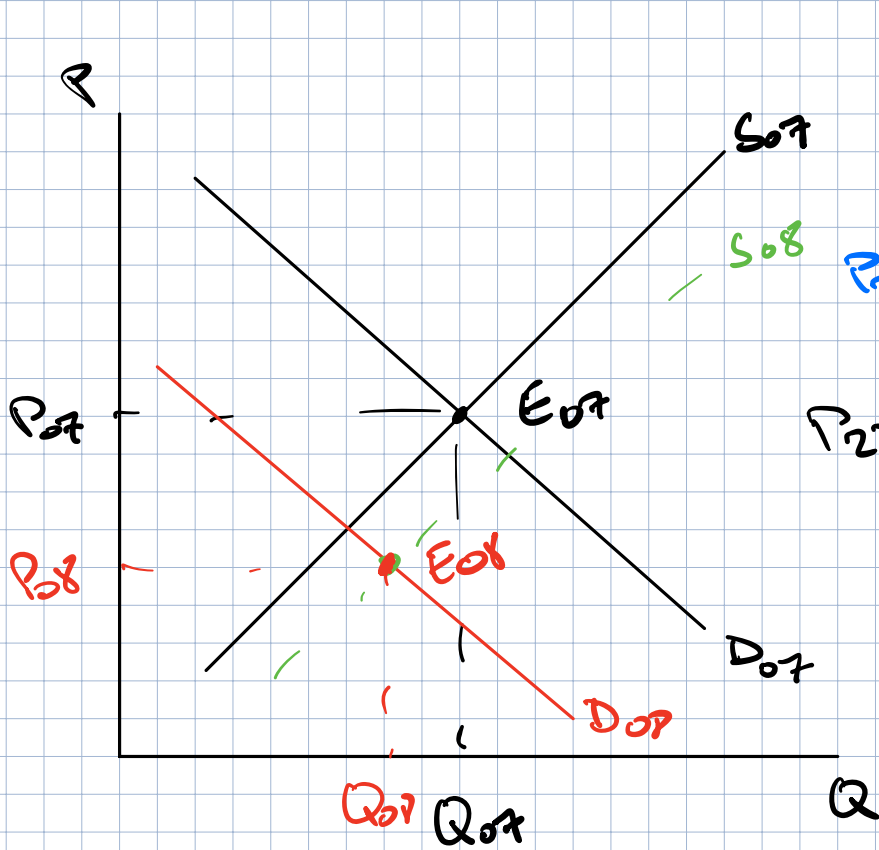
Original Example + 10K Discouraged



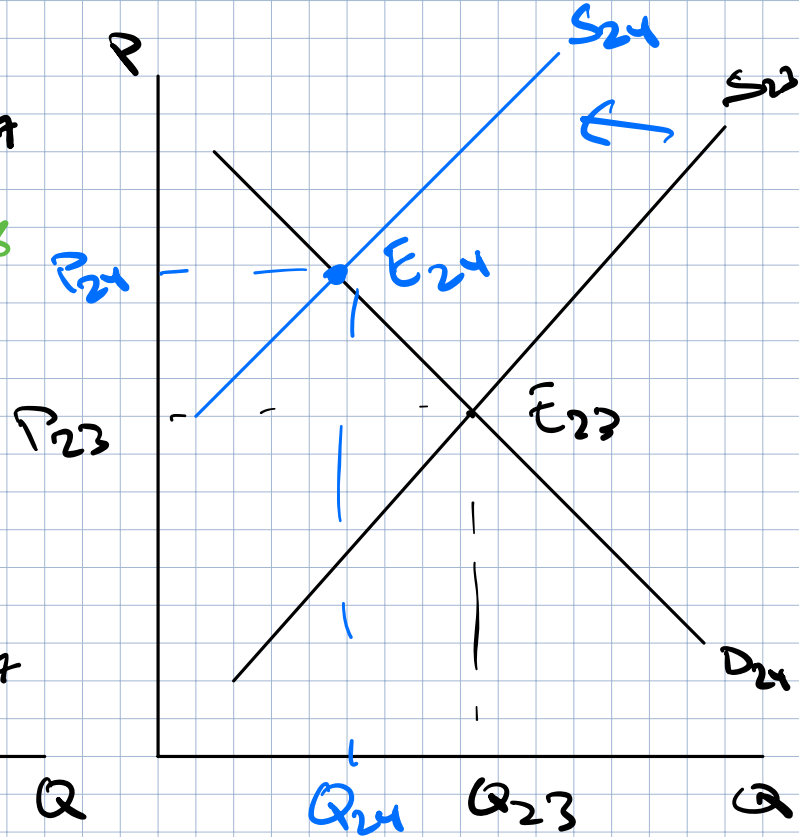
$$\begin{aligned}
 \text{UE Rate w/ 10K Dis} &= \frac{\text{UE} + \text{Dis}}{\text{LF} + \text{Dis}} \times 100 = \frac{10\text{k} + 10\text{k}}{50\text{k} + 10\text{k}} \times 100 \\
 &= \frac{20\text{k}}{60\text{k}} \times 100
 \end{aligned}$$

Additional Question

Housing Market: 2007 vs Today

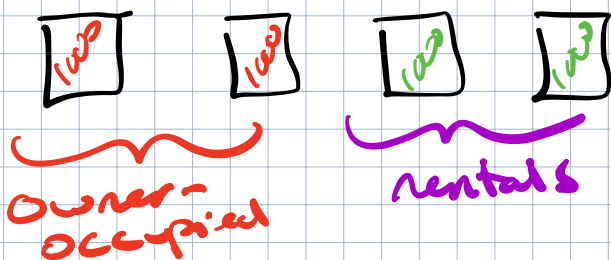


Speculative Bubble Burst
 $\rightarrow D \downarrow \downarrow$



Prices \uparrow , $Q \downarrow$
 Lots of homeowners
 at $< 3\%$ rates,
 Lots of equity,
 Less Supply on market

Imputed Rent?



4 Homes - all occupied
 2 owner-occupied
 2 rented out, 1000/mo

All housing/rental services count the same!

$$4 \text{ homes} \times 1000/\text{mo} = \$4000/\text{mo} = \$48,000/\text{yr}$$

GDP Deflator vs CPI

What is included?

$$CPI_{cy} = \frac{\text{Basket Cost}_{cy}}{\text{Basket Cost}_{by}} \times 100 = \frac{Q_{by} \cdot P_{cy}}{Q_{by} \cdot P_{by}} \times 100$$

$$GDP Def_{cy} = \frac{\text{Nom. GDP}_{cy}}{\text{Real GDP}_{by}} \times 100 = \frac{Q_{cy} \cdot P_{cy}}{Q_{cy} \cdot P_{by}}$$

Import Prices increase, $P_{cy} \uparrow$

Q_{by} of imports? Do not change

Q_{cy} of imports? Decrease as we move to domestically produced goods

$$GDP = C + I + G + (X - M)$$