Determination of Wages and Employment Shifts in Labor Demand Shifts in Labor Supply Sticky Wages

Labor Market Supply and Demand

ECO 120: Global Macroeconomics

Unit Goals

- Define labor demand and identify what influences labor demand
- Define labor supply and identify what influences labor supply
- Predict how wages and level of employment are determined by labor supply and demand.
- Use these skills to make predictions about changes in wages and employment.

Reading and Exercises

- External reading posted on Canvas: Taylor, Principles of Economics 2e, Chapter 4
- Canvas Quiz due Wednesday 11:59 PM.
 Multiple-choice, 10 questions, unlimited attempts allowed, only best score counts
- Homework/In-class Exercise due Friday 11:59 PM. We will work together in class on Thursday.

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- In the market for labor, the price of labor is the wage, and the quantity of labor is total hours of employment
- The quantity of labor demanded is the amount of worker time that employers are willing and able to hire in a given time period at a particular wage.
- Labor demand follows the law of demand: All other things remaining equal, the higher is the wage, the lower is the quantity of labor demanded.

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Labor Demand Schedule

Point	Wage	L_D
Α	\$20	0
В	\$25	50
C	\$10	100
D	\$5	150

Labor Demand Curve

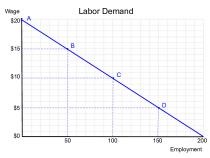


- Law of demand makes the labor demand curve downward sloping.
- Change in quantity labor demanded: when there is a change in wage causing a movement from one point on the labor demand curve to another point.

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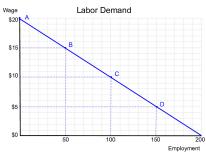


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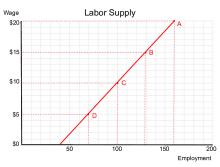
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Labor Supply Schedule

Point	Wage	Ls
Α	\$20	160
В	\$15	130
C	\$10	100
D	\$5	70

Labor Supply Curve

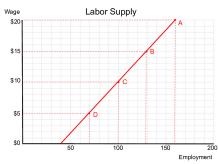


- Law of supply makes the labor supply curve **upward sloping**.
- Change in quantity of labor supplied: when there is a change in wage causing a movement from one point on the labor supply curve to another point.

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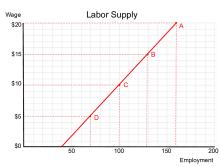


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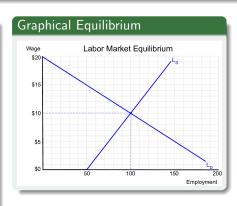
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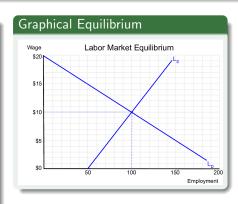
Equilibrium

- The equilibrium wage is the wage where the quantity of labor supplied is equal to the quantity labor demanded.
- The equilibrium employment is the corresponding quantity of labor
- This is the wage and level of employment that should prevail in the long-run in the labor market

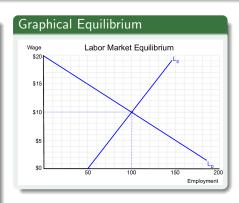


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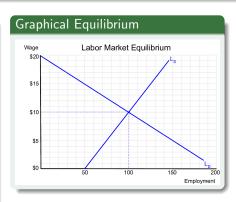
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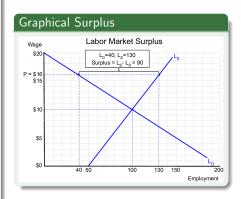
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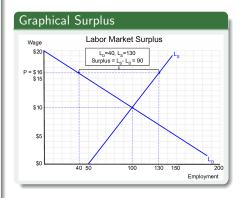
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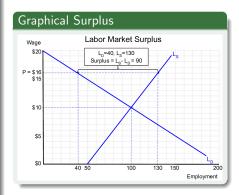
- When the prevailing wage is above equilibrium wage, quantity of labor supplied exceeds quantity of labor demanded
- Quantity of labor supplied ≡ people who want work
- Quantity of labor demanded = how much employers want to hire
- Difference is the surplus = unemployment
- In an unregulated market, market forces will push wage lower toward equilibrium



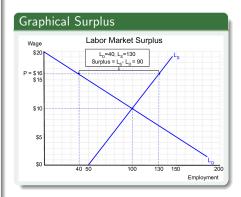
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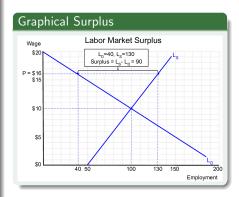
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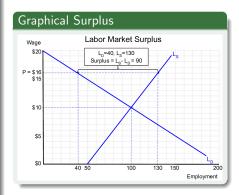
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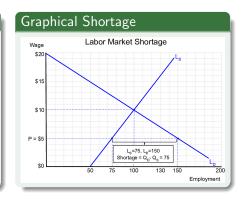
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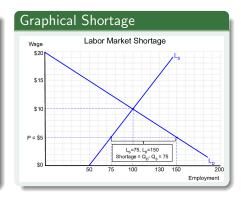
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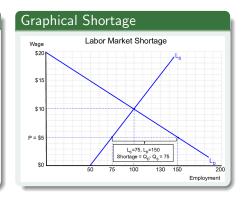
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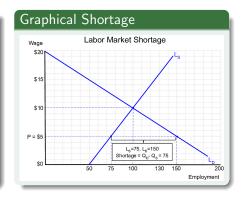
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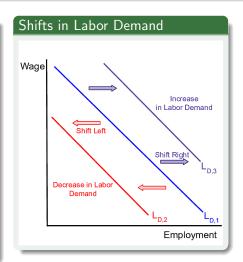
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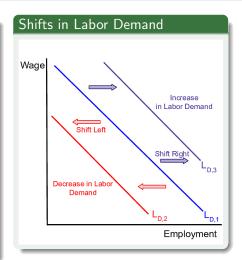
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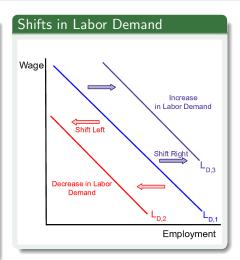
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- Something that increases labor demand shifts the labor demand curve to the right
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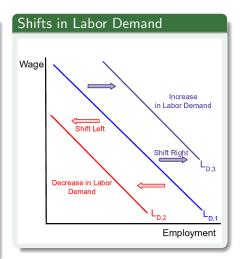


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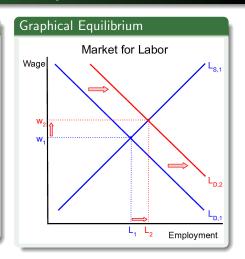
Labor Demand Curve Shifts

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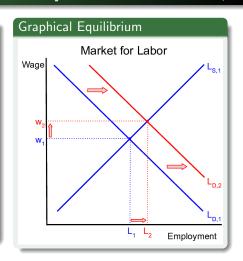
Mechanism

- If labor productivity improves, workers can produce more goods and services per hour of work
- This generates more revenue for firms per hour of work hired
- This will shift labor demand right
- Equilibrium wage increases, employment increases
- Improvements in technology can improve labor productivity at an aggregate level

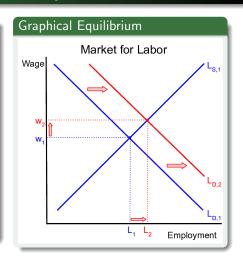


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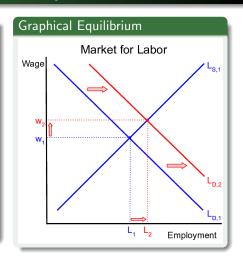
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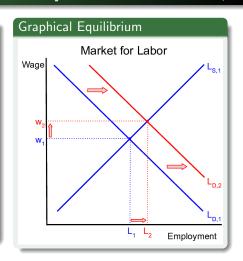
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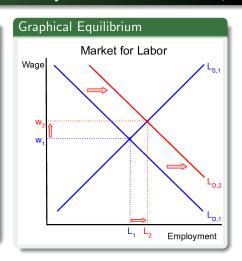
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Automation and New Tasks: How Technology Displaces and Reinstates Labor, *Journal of Economic Perspectives*, Spring 2019.

${\sf Displacement} + {\sf New Tasks}$

- Displacement effect: Automation has led to decreases in demand for certain types of labor, increases in demand for capital
- Examples: Manufacturing, routine tasks in accounting / sales / logistics replaced by software and AI
- Stagnation in labor demand in last decade due to the displacement effect



Dr. Daron Acemoglu (left) Massachusetts Institute of Technology

Dr. Pascual Restrepo (right) Boston University

Spotlight: Daron Acemoglu & Pascual Respreto

13/22

Automation and New Tasks: How Technology Displaces and Reinstates Labor, *Journal of Economic Perspectives*, Spring 2019.

Displacement + New Tasks

- Productivity effect: Automation has also led to creation of new tasks, increase in demand for other types of labor
- Computer programming, information systems design, cyber-security, product designers
- Explored both effects in industrial revolution and modern automation
- No one effect always dominates the other



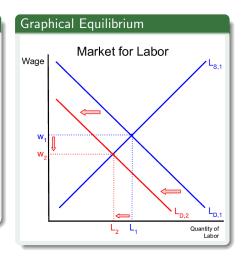
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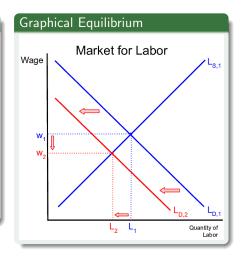
Destruction of Capital Stock

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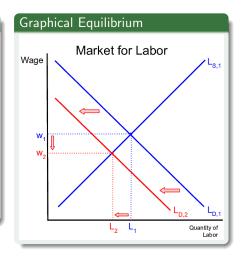
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- Suppose a natural disaster leads to a destruction of capital stock
- Less capital stock leads to lower labor productivity and lower labor demand
- This will shift labor demand left
- Equilibrium wage decreases, employment decreases



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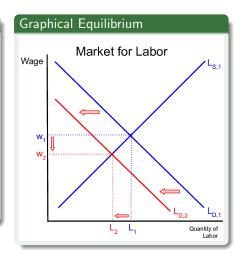
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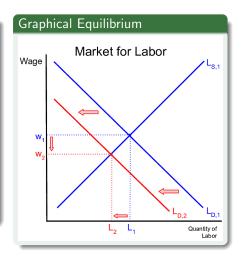
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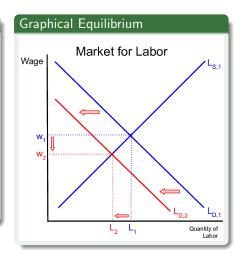
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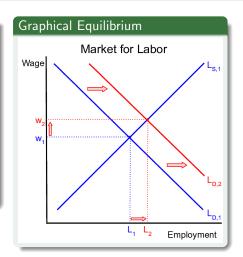
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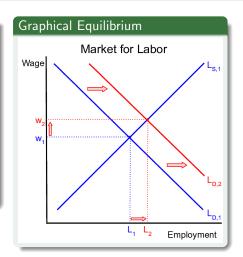
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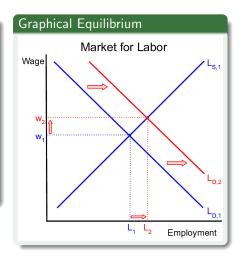
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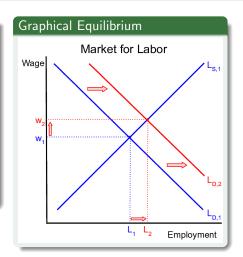
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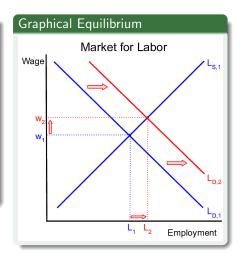
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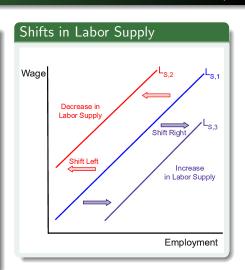
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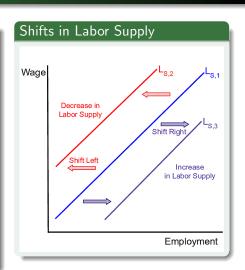
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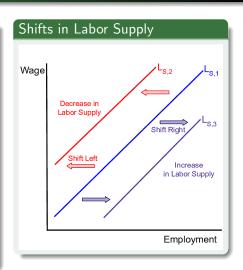
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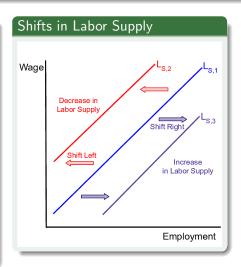
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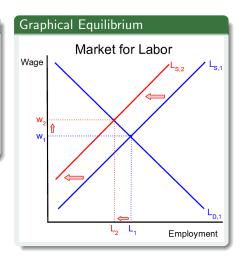
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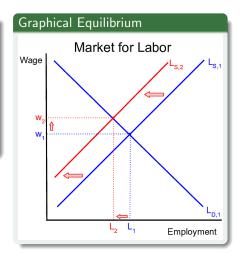
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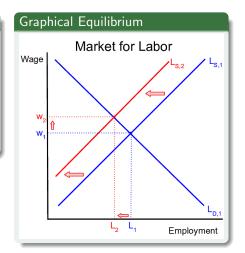
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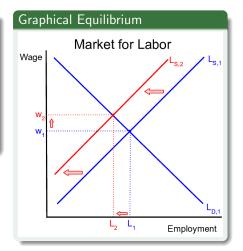
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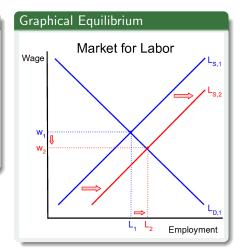
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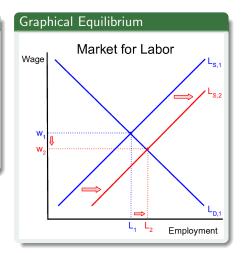
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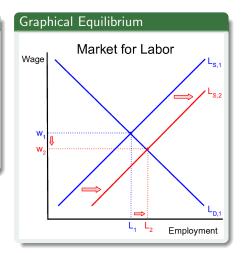
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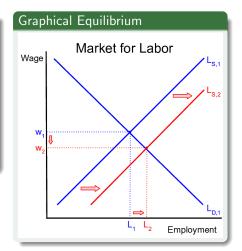
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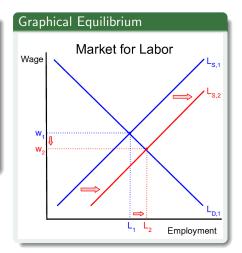
- U.S. labor force participation rate is about 62% (2021)
- Suppose more people decide to be part of the labor force
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Increase in Labor Force Participation

18/22

- U.S. labor force participation rate is about 62% (2021)
- Suppose more people decide to be part of the labor force
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- Usually, wages do not quickly adjust to new equilibrium levels
- Employers are hesitant to change wages until they recognize market wages have permanently changed
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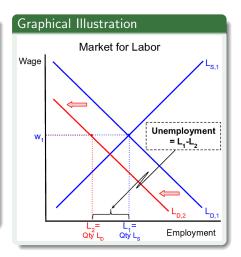
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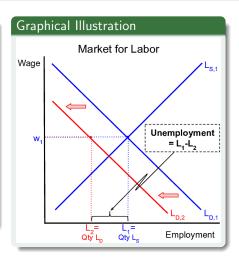
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Drop in Consumer Spending

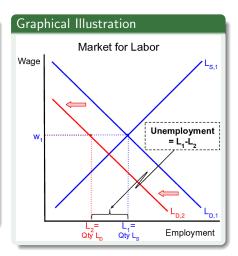
- Suppose drop in consumer confidence leads to a drop in consumer spending
- Labor is a derived demand, so labor demand shifts to the left
- When wage does not move to new equilibrium level, labor market surplus is created
- Labor market surplus → unemployment



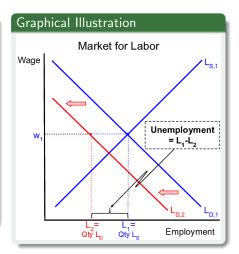
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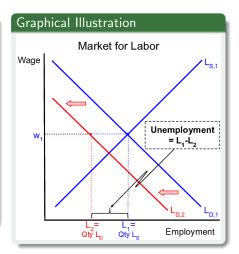
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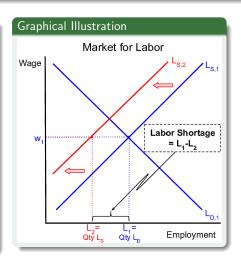


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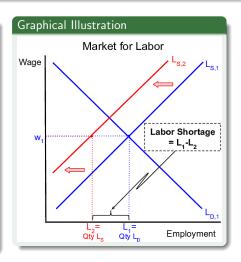


Labor Market Shortage with Sticky Wages

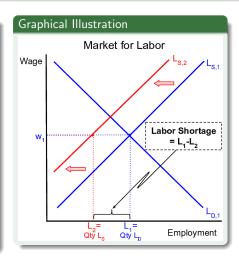
- Following the COVID recession in 2020, labor force participation dropped from 63% to 61.5%
- Record number of job resignations in 2021: https://www.npr.org/2021/ 06/24/1007914455/as-thepandemic-recedes-millions-ofworkers-are-saving-i-quit
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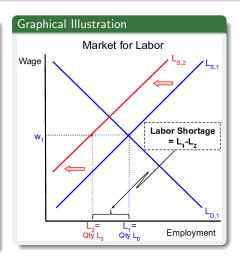
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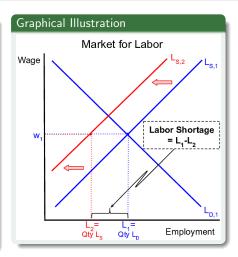
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Reading and Exercises

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