Request that you should not refuse

- PLEASE SWITCH OFF AND PUT AWAY YOUR CELL PHONES
- LAPTOPS OK IF WORK IS ACADEMIC
- REMOVE BAGS AND OTHER MATERIALS THAT CAN CAUSE DISTRACTION
- STOP HAVING SIDE CONVERSATIONS
- PARTICIPATE IN CLASS

Class 8

Review: Demand for labor with Different Kinds of Labor

Minimum Wages

Information Economics: Theory of Contracts

- **Read for Monday's Class (Class 9): Wrap Up and Exam Review**

Prep for exam next Wednesday

Demand for Labor:

Taking the con out of Econometrics - Lemar

Effect of Natural Disasters on local Labor Markets - Solomon

Immigration Surplus – Borjas

Why are there so many jobs - Autor

Women War and Wages – Acemoglu et al

The Overrated Minimum Wage - Brown

Minimum Wage Controversy - Neumark

Universities: hire professors (E_H) (abstract jobs/ high skill) & hire janitors (E_L)(manual/low skill) from different markets & hire capital from the capital market to finance the operation

professors (E_H) and capital (computers, software) are complements in this production process

Janitors (E_L) and capital (computerized self cleaning toilets) are imperfect substitutes

$$q = f\left(\left(Min\left\{\alpha_H E_H, \beta_H K\right\}\right), \left(E_L{}^{\alpha_L} K^{\beta_L}\right)\right)$$

$$\rightarrow q = Min\left\{\alpha_H E_H, \beta_H K\right\} + \left(E_L{}^{\alpha_L} K^{\beta_L}\right)$$

$$TC = w_H E_H + w_L E_L + rK$$

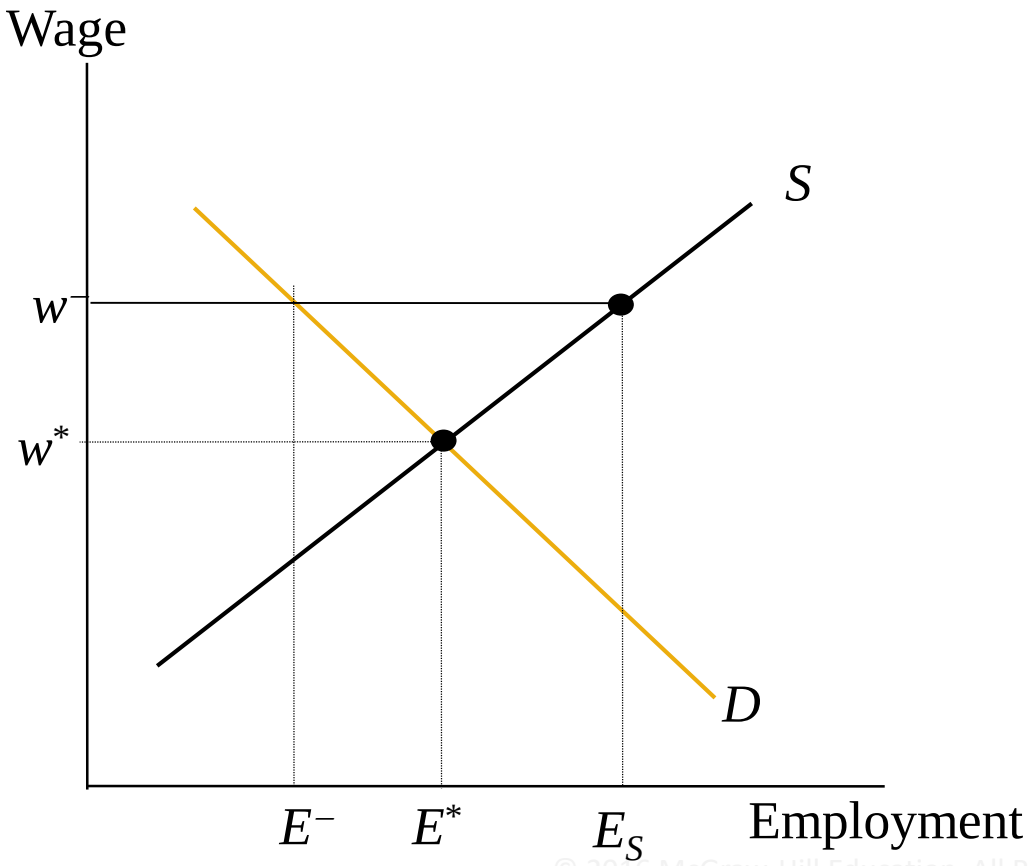
Why single product?

Automation, skill premium, substituting routine tasks/jobs, and evolution of income inequality

Can minimum wage increase solve this problem?

The Impact of the Minimum Wage on Employment

$$Unemoplyment\ \ Rate = \frac{E_s - \overline{E}}{E_s}$$



A minimum wage set at w^- results in employers cutting employment from E^* to E^-. The higher wage also encourages $E_S - E^*$ workers to enter the market. Thus, under a minimum wage, $E_S - E^-$ workers are unemployed.

Suppose the manufacturing industry in a US city has labor demand and supply curves estimated as

$$w = A - BE^d \ldots(1)$$

$$w = C + DE^s \ldots(2)$$

$$w^* = \frac{AD + BC}{B + D}$$

$$\overline{w} = Z$$

$$E^* = \frac{A - C}{B + D} \quad \overline{E} = \frac{A - Z}{B} \quad E_S = \frac{Z - C}{D}$$

$$Unemoplyment\ \ Rate = \frac{E_s - \overline{E}}{E_s} = ?$$

$$Under\ \ what\ \ condition\ \ is\ \ Unemployment\ \ Rate = 0$$

$$E^* = \frac{A-C}{B+D} \qquad \overline{E} = \frac{A-Z}{B}$$

$$E^* - \overline{E} = \frac{A-C}{B+D} - \frac{A-Z}{B} = \frac{BA-BC-BA+ZB-DA+ZD}{B+D}$$

$$E^* - \overline{E} = \frac{Z(B+D)-(AD+BC)}{B+D}$$

$$E^* - \overline{E} = Z - \frac{(AD+BC)}{B+D} = Z - w*$$

$$If \;\; Z = w^* \;\; Then \;\; E^* - \overline{E} = 0$$

$$Unemoplyment\ \ Rate = \frac{E_s - \overline{E}}{E_s} = ?$$

$$\overline{E} = \frac{A - Z}{B} \qquad E_S = \frac{Z - C}{D}$$

$$E_s - \overline{E} = \frac{Z - C}{D} - \frac{A - Z}{B} = \frac{ZB - CB - AD + DZ}{D}$$

$$\rightarrow E_s - \overline{E} = \frac{Z(B + D) - (AD + BC)}{B \times D}$$

$$\rightarrow E_s - \overline{E} = \frac{Z - \frac{(AD + BC)}{(B + D)}}{\frac{B \times D}{(B + D)}} = \frac{(B + D)(Z - w^*)}{B \times D}$$

$$Unemoplyment\ \ Rate = \frac{E_s - \overline{E}}{E_s} = \frac{\left(B+D\right)\left(Z - w^*\right)}{B \times D \times E_s}$$

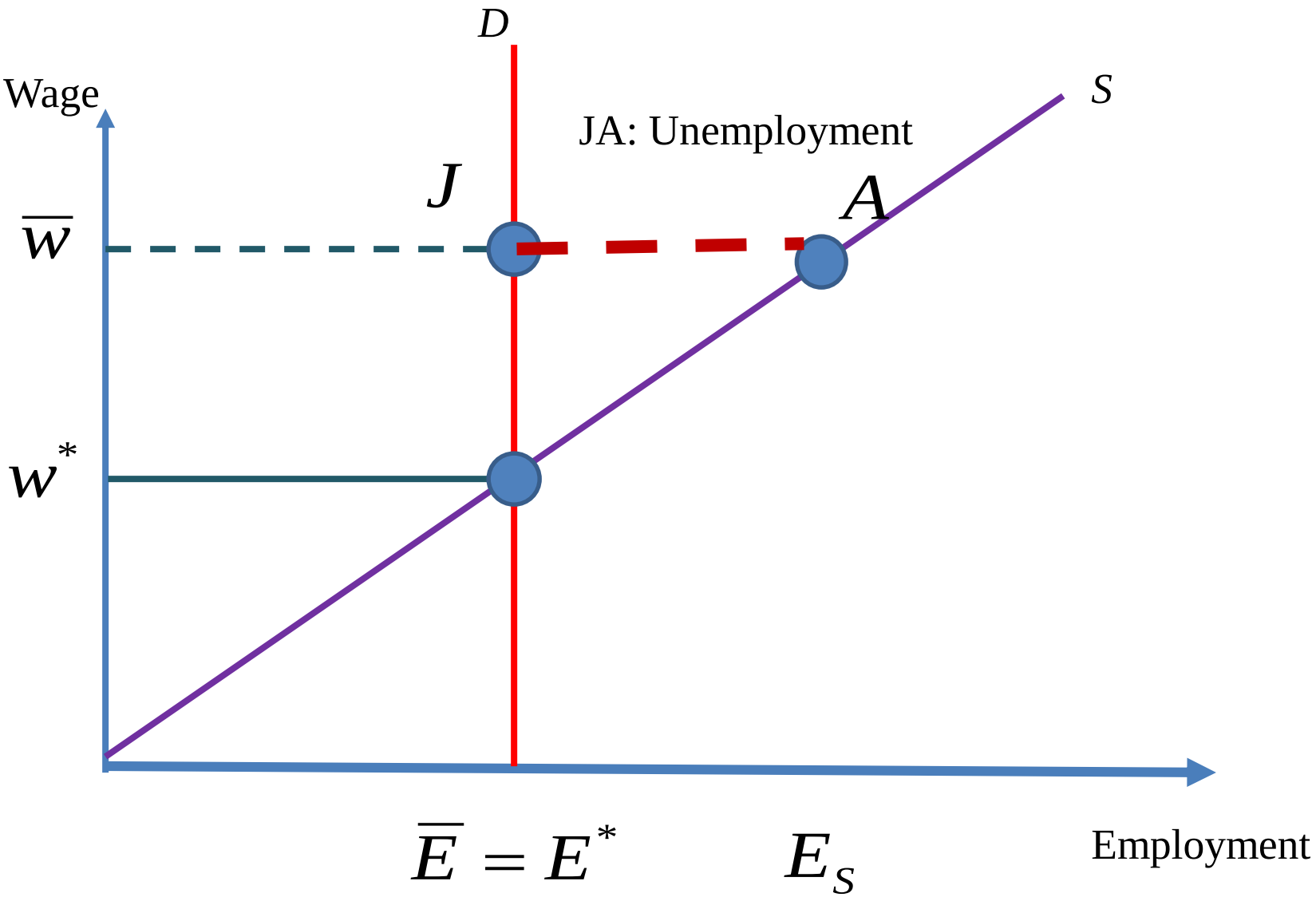
$$E_S = \frac{Z - C}{D}$$

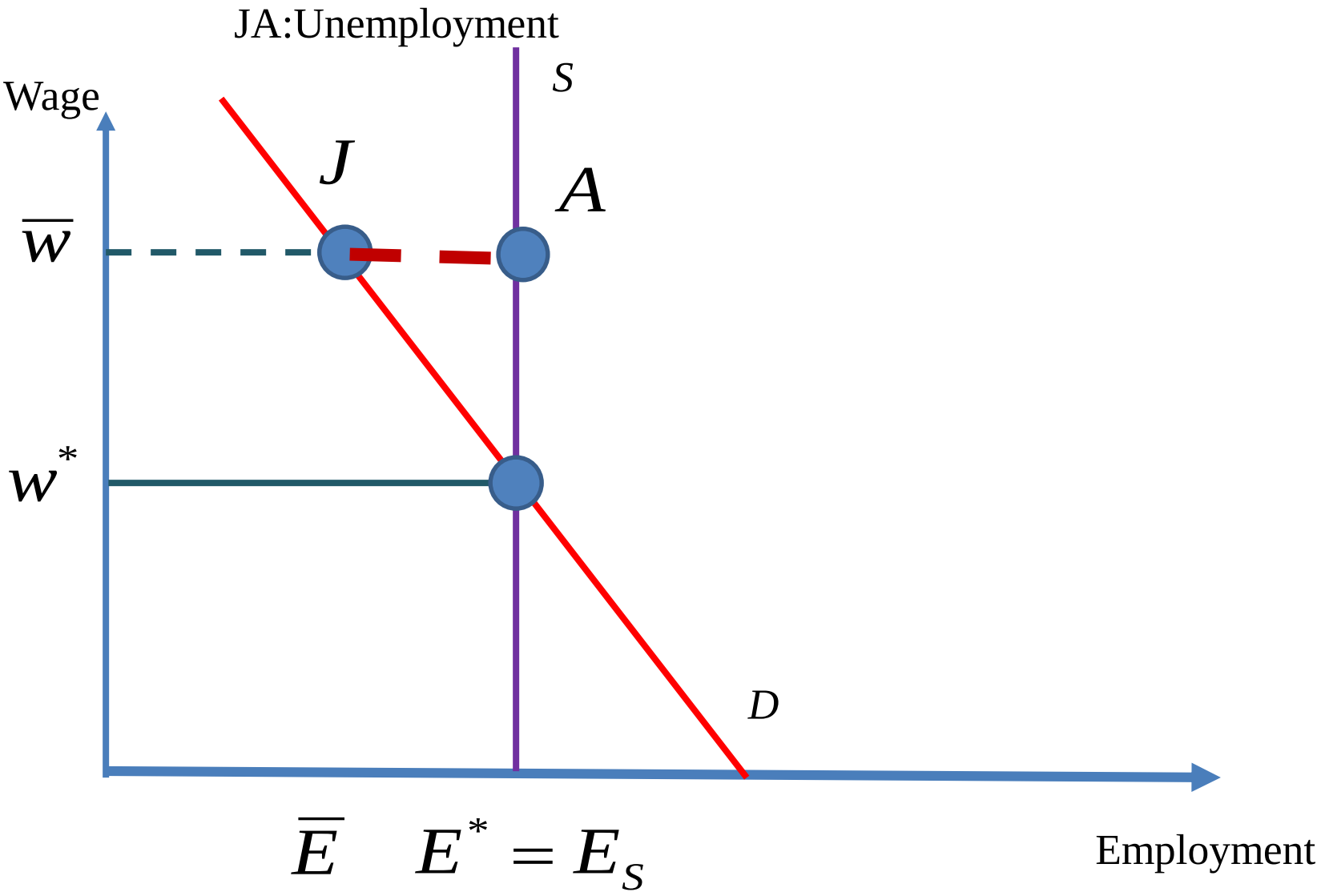
$$Unemoplyment\ \ Rate = \frac{E_s - \overline{E}}{E_s} = \frac{\left(B+D\right) \times \left(Z - w^*\right) \times D}{B \times D \times \left(Z - C\right)}$$

$$Unemoplyment\ \ Rate = \frac{\left(B+D\right) \times \left(Z - w^*\right)}{B \times \left(Z - C\right)}$$

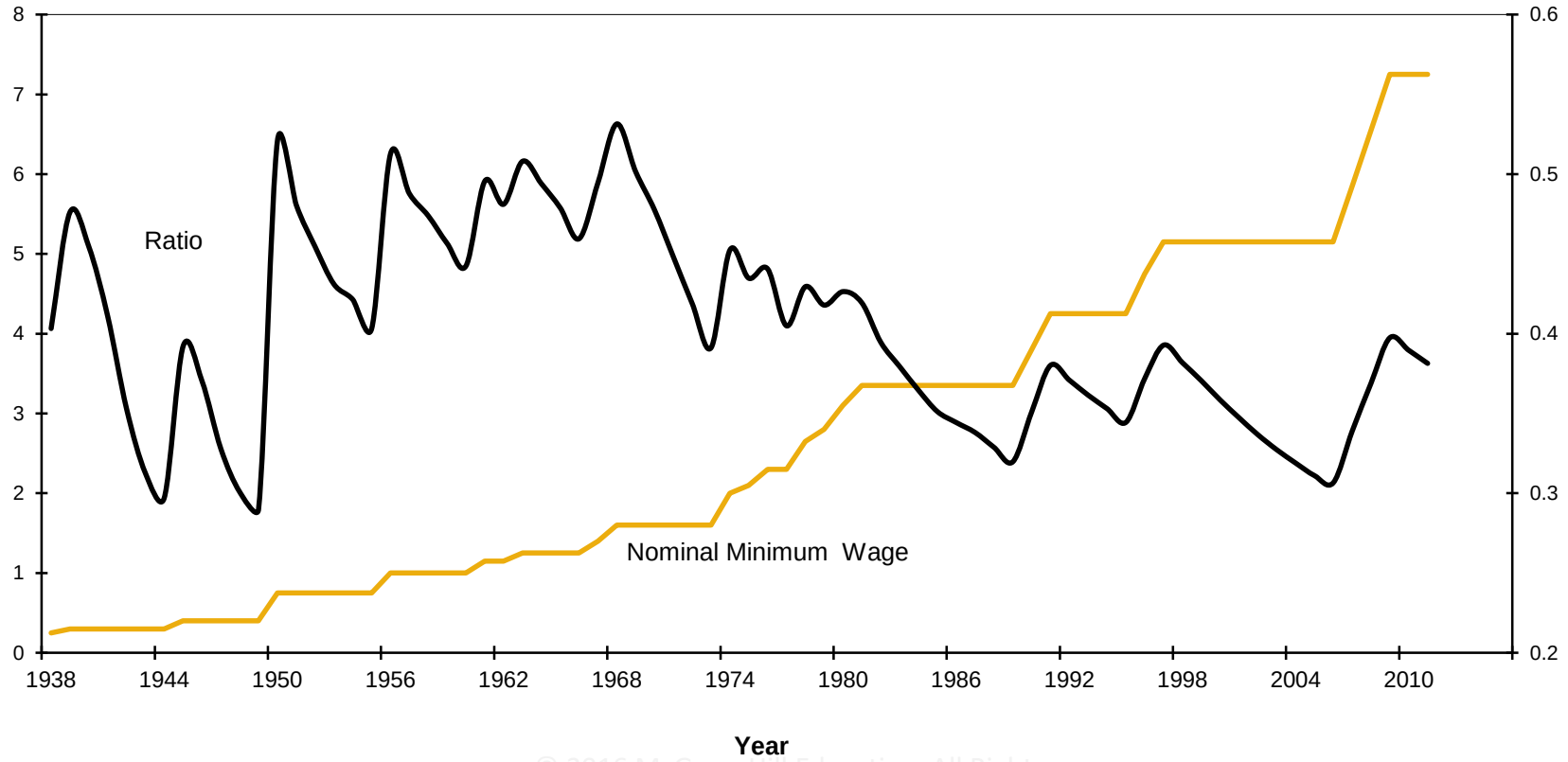
$$Unemoplyment\ \ Rate = \frac{\left(B+D\right) \times \left(E^* - \overline{E}\right)}{B \times \left(Z - C\right)}$$

$$If\ \ Z = w^*\ \ Then\ \ E^* = \overline{E}\ \ \&\ \ Unemoplyment\ \ Rate = 0$$


D
Wage
S
JA: Unemployment
J
A
$\overline{w}$
w^*
$\overline{E} = E^*$
E_S
Employment


JA:Unemployment
Wage
S
J
A
$\overline{w}$
w^*
D
$\overline{E}$
$E^* = E_S$
Employment

Nominal Minimum Wages & Ratio of Minimum wage to Average Manufacturing Wage in the United States , 1938-2011



Minimum wage literature: Pre New Jersey/Pennsylvania

Post New Jersey/Pennsylvania

Overrated Minimum Wage

Charls Brown

Problems with gauging unemployment from theory

- Firms hire high skill and less skilled workers (see slide 1): increasing cost of unskilled through min wage can reduce the employment of them; but increase overall employment
- Turnover not equal to unemployment
- Workers can be mischaracterized as unemployed (not looking for a job last month) by BLS
- **Not in the Labor Force** & **Unemployed** are two different categories
- **Labor Force Participation**: looking for a job & got a job (employed) + not looking for a job & do not have a job (unemployed)

The table below shows employment statistics for the fictional country of Summerlandia. Use the information to answer the following questions. *Round your percentages to two decimal places.*

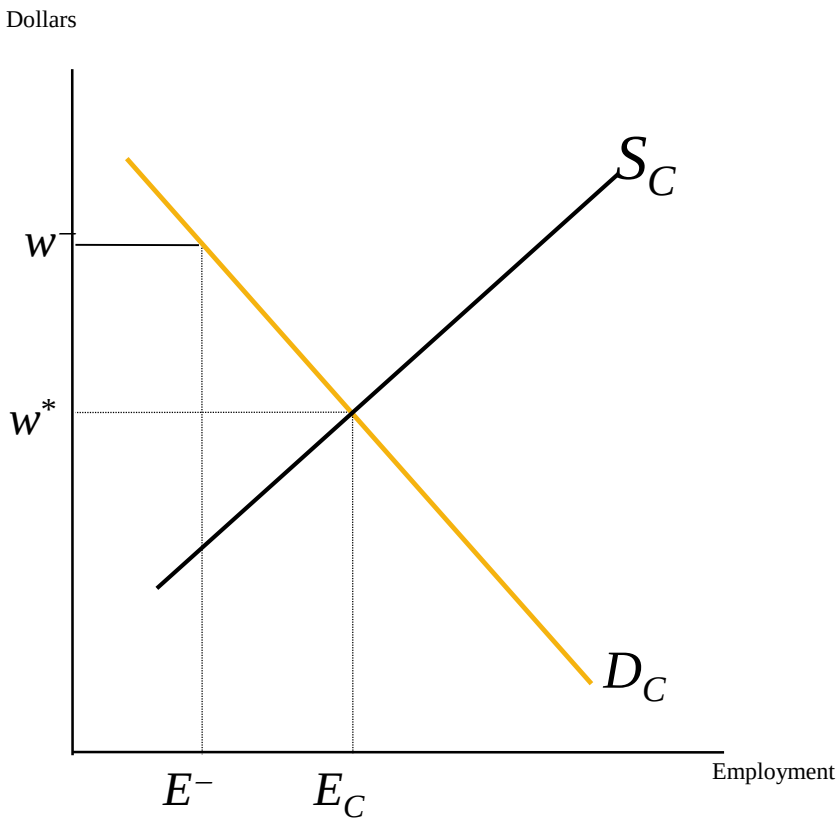
Category	Number of people
Employed	5505
Unemployed	482
Not in the labor force	581

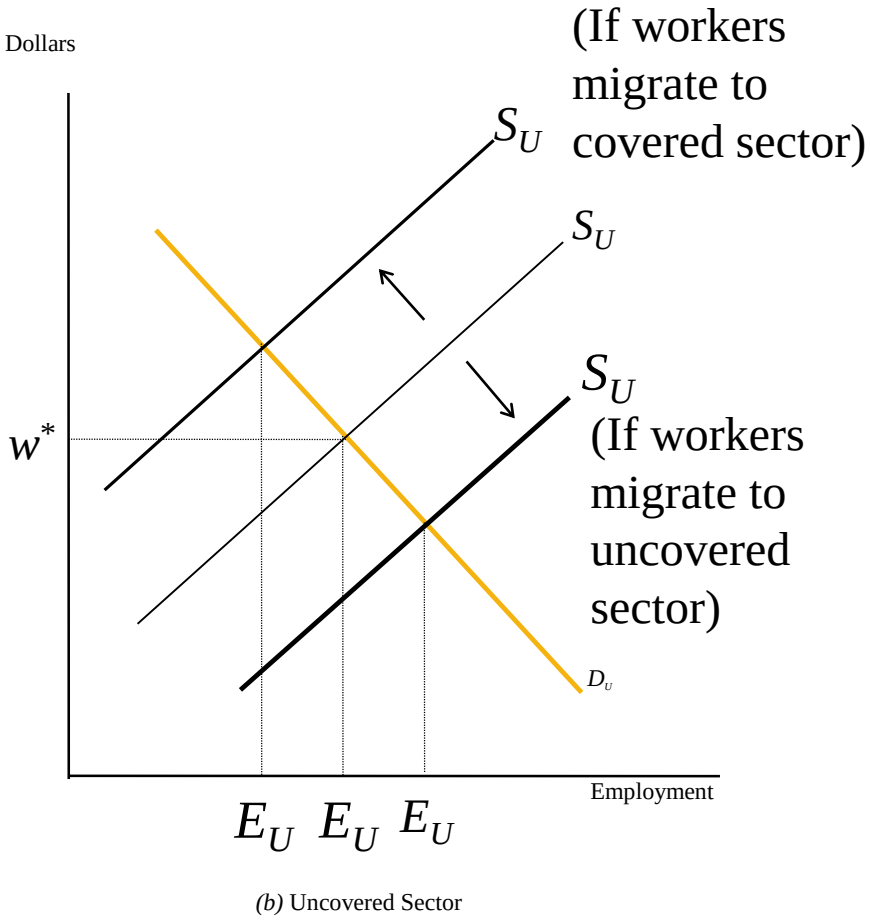
- Unemployment Rate = ____%
- Labor force participation rate = _____ %

If 200 unemployed people become discouraged

- The new unemployment rate = _____%
- The new labor Force Participation rate =_____%

The Impact of Minimum Wages on the Covered and Uncovered Sectors





(b) Uncovered Sector

f the minimum wage applies only to jobs in the covered sector, the displaced workers might move to the uncovered sector, shifting he supply curve to the right and reducing the uncovered sector's wage. If it is easy to get a minimum wage job, workers in the uncovered sector might quit their jobs and wait in the covered sector until a job opens up, shifting the supply curve in the uncovered sector to the left and raising the uncovered sector's wage.

More complicated issues

- Ripple effects: quality of work: higher wages higher quality
- Artificially increasing wage for people get them unemployed and increases wages and employment for high paid/ high skilled workers instead
- One worker: 3.90 (increased demand)
- Another worker: 3.35 to 3.85 b/c min wage increase
- Spike at min wage (not truncation):
- best workers are paid by non wage methods: hidden bonus, training, workweek adjustment

Very complicated (but possibly telling) issues

- Newly covered workers have a low min wage and then they work to the minimum wage for the whole market
- Empirical analysis uses an average
- Teenage market or the entire labor market?
- The longer min wage has not been raised its real value falls and its bite decreases – depends on data collection point
- Part time versus full time workers: min wage may increase part time workers more
- Not a good antipoverty measure: worker on min wage is not likely to be part of a family that is poor

Characteristics of Min Wage Job Employees

TABLE 6.3 Characteristics of Minimum-Wage Workers

Age	
16–19	26%
20–24	27%
25 and over	47%
Race	
White	71%
Black	11%
Hispanic	15%
Asian	3%
Poverty Status	
Poor	24%
Nonpoor	76%
Work Experience	
Full-time	40%
Part-time	60%
Industry	
Leisure and hospitality	64%
Retail trade	9%
Gender	
Male	34%
Female	66%
Marital Status	
Never married	64%
Currently married	22%
Other	14%
Education	
Not high school graduate	30%
High school graduate	29%
Some college	34%
College graduate	7%
Region	
South	43%
North/West	57%

- Min wage workers: Transient (Brad Pitt)
- Higher min wage possibly will affect a few workers (depends on how much is it raised)
- Creates employment problems for new entrants
- Low wages affects relatively few families in poverty

TABLE 6.6 Escape Routes from Low-Income Earnings (percent distributions)

Number of low-earning households	17.03 million
In poverty	36%
Not in poverty	64%
Escape routes from poverty	
Small family size	43.5%
Other workers in family	27.1%
Nonearnings income	13.1%
Welfare benefits	11.6%
Combinations of above	4.3%

Effects on Minimum Wage on Employment

David Neumark

NOTES - Theory

- Binding versus Non Binding min wage
- Substitution to capital/equipment
- Increase in price; reduction in how much is bought by consumers; lower labor demand
- Labor – labor substitution (high skilled for low skilled – see Brown earlier)
- Higher prices can also result from a loss of competition through min wage implementation.
- Higher min wages will possibly help larger chain corporations than hurt them

NOTES - empirical

- Meta Analysis: Publication Bias: studies with negative estimates more likely to be published
- Publication bias is not really a bias because editors possibly believe the true effect is negative: papers that have other results may be using compelling research strategies BUT asking too much of the data
- Get the sense that: Meta analysis is good for UG & G students not for practicing economists

The role of Geography

- Studies look at comparing states or counties that have common borders
- The trouble is, focusing on the common border areas more the estimation technique understates job loss
- Recent papers in this vein have corrected for that specific error and found evidence of job loss (when min wage increased and also dynamic effects)

Evidence on Min Wage

- High Rate of Non Compliance: low penalty
- 3.5% workers above age 25 work min wage jobs
- 25% teenagers work min wage jobs
- Time Series Study: -0.1 and -0.3: 10% increase in min wage decrease emp by 3%
- But min wage change by 27% or so
- Since 1990s, fast food restaurants : no effect, positive effect
- Higher income from min wage goes to teenagers in richer households (more than 50%) rather than to those from poorer households (19%)
- Living Wage

Information Economics: Study of Incentives
MORAL HAZARD & SCREENING

- Labor is not uniform
- Labor can contain efficiency units
- Quality of work matters
- How do we explain bonuses?
- Effort is neither OBSERVABLE nor VERIFIABLE
- Moral hazard: one person knows more about the effort – worker; manager knows little about worker effort, but wants worker to not shirk
- How do we modify the objective function budget constraint to make the model realistic?

Endogenous Variables: bonuses, standard

Objective Function: profit function

Subject to: Participation Constraint

Subject to: Incentive Constraint

Classroom teaching fits this model of moral hazard

Additional issues: double moral hazard; multidimensional moral hazard