

Economics 460: Labor Economics
Department of Economics, Finance and Legal Studies
University of Alabama
Spring, 2018

Midterm II

Key

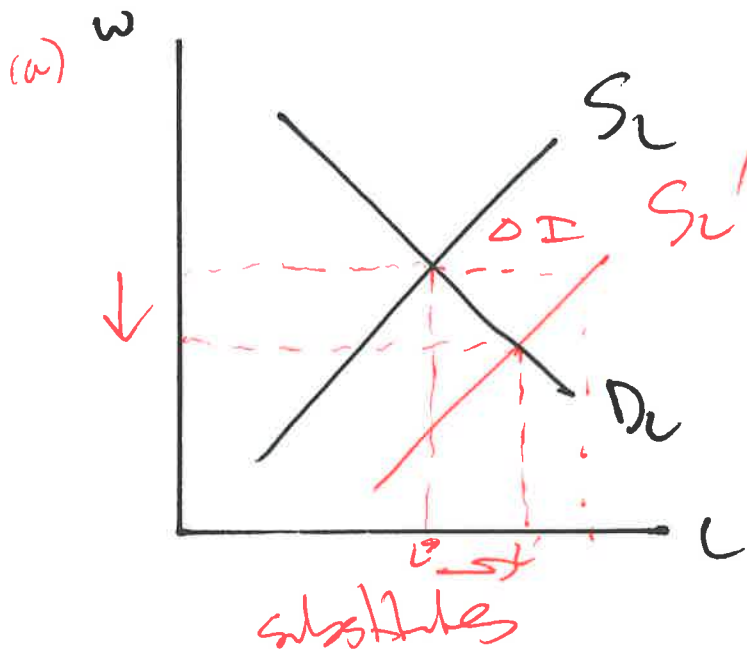
The exam is worth 100 points. Each question (eight questions on eight pages) is of equal value. There will be no communication with the exam proctors; if you believe a question contains an error or ambiguity, say so on your written examination, make an assumption to correct the alleged error or to resolve the ambiguity, and answer the question as well as you can.

1. Write down the (5) assumptions of a perfectly competitive model given in class. Give one (brief) example of a violation of each assumption.

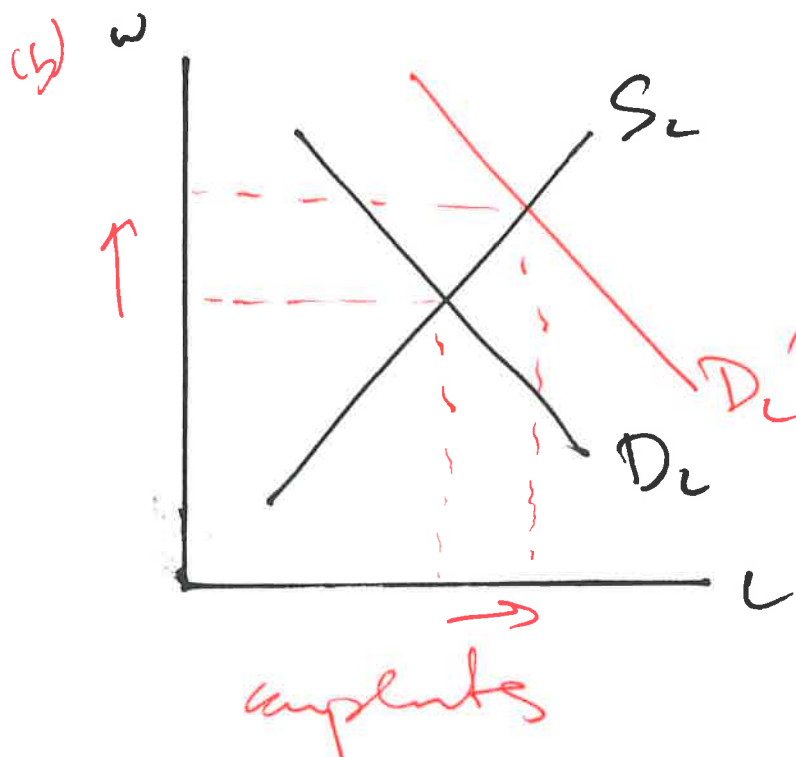
- (1) firms mass π } usually true
individuals mass u }
irrational preferences
- (2) perfect info
asymmetric information
- (3) identical worker skills
education differences
identical jobs (except for w)
injury risks
- (4) large # of buyers & sellers
monopoly / monopsony
- (5) labor is mobile / no adli costs
barriers / moving costs

2. Consider the case of immigration. What would we expect to happen to native wages if the following are true (show in graphs):

- (a) Immigrants and natives are gross substitutes.
- (b) Immigrants and natives are gross complements.



$\downarrow w$ & # of natives that work (as $L' < L \rightarrow \Delta D$)



$\uparrow w$ & # of natives that work

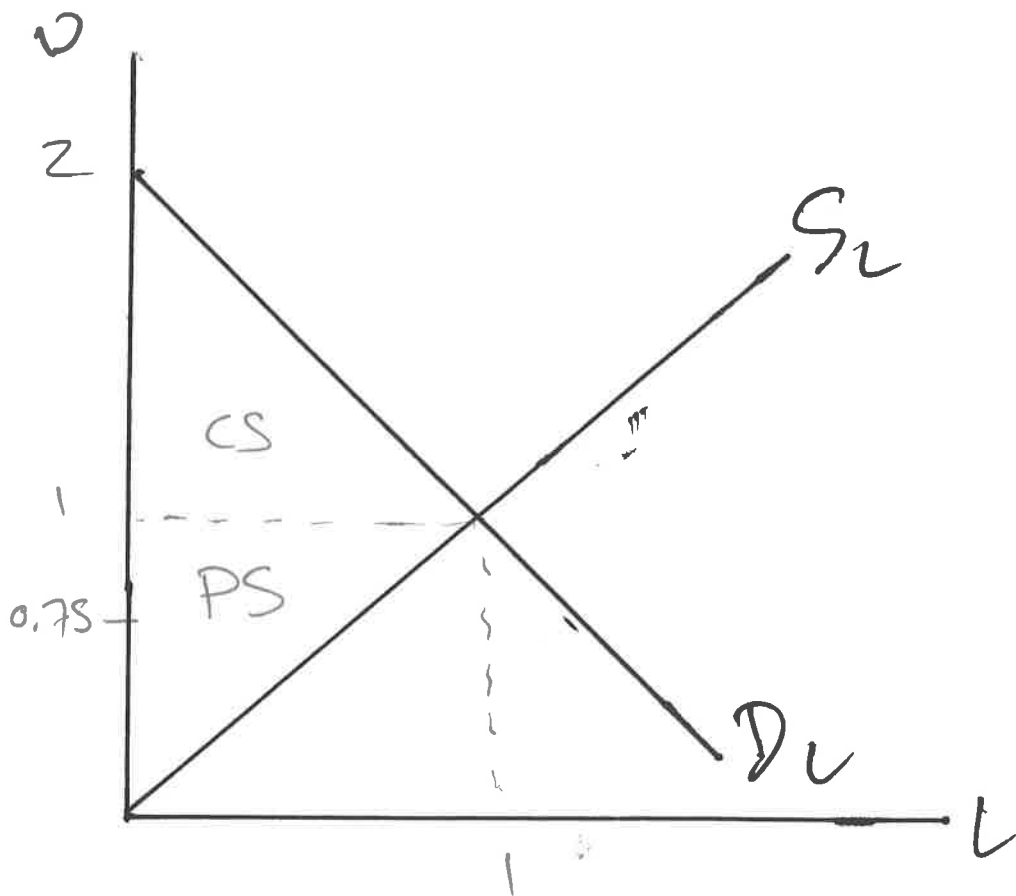
3. Suppose the labor demand and supply curves are

$$D_L : w = -L + 2$$

$$S_L : w = L$$

respectively.

- Derive the equilibrium wage and labor. Derive the consumer surplus, producer surplus and deadweight loss.
- Suppose a minimum wage of \$0.75 is instituted. Derive the consumer surplus, producer surplus and deadweight loss.



$$L = -L + 2$$

$$L = 1 \Rightarrow w = 1$$

$$CS = \frac{1}{2} (1)(1) = \frac{1}{2}$$

$$PS = \frac{1}{2} (1)(1) = \frac{1}{2}$$

$$DWL = 0$$

(b) min wage < 1
 \Rightarrow not binding
 & CS, PS & DWL
 do not change

4. Consider the Cobweb model discussed in class with labor demand and supply curves

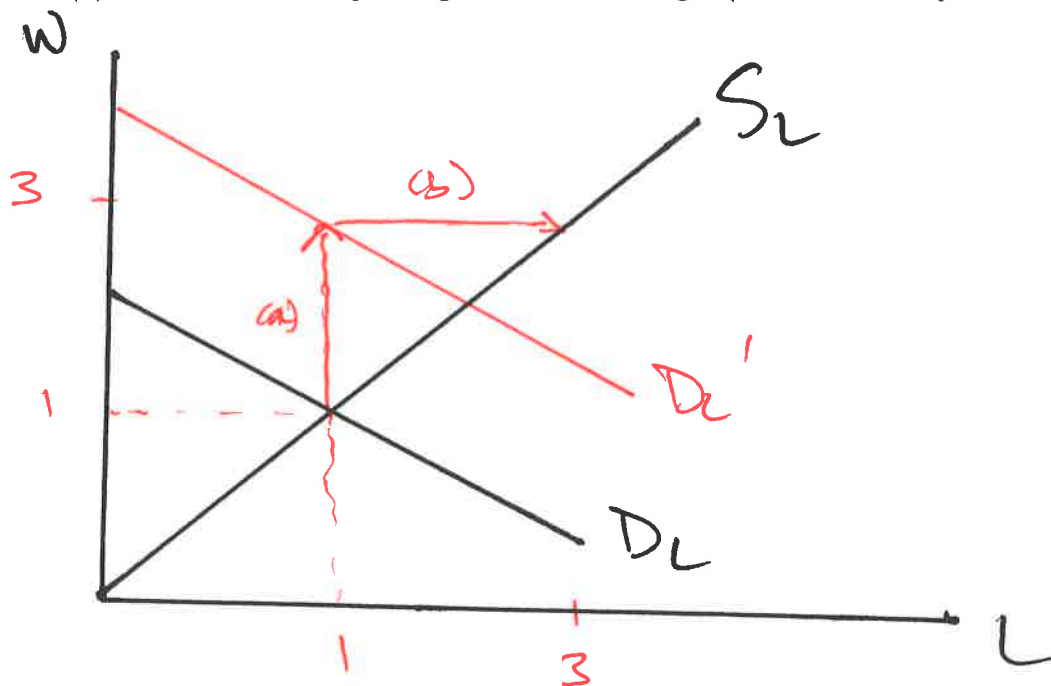
$$D_L : w = -L + 2$$

$$S_L : w = L$$

respectively. Suppose there is an increase in the demand for labor such that

$$D'_L : w = -L + 4.$$

- (a) Show the initial change in labor and wages (both numerically and on the graph).
(b) Show the next step change in labor and wages (both numerically and on the graph).



- (a) SR labor supply fixed & $w \uparrow$ to 3,
 L stays at 1
- (b) SR labor supply shifts to right,
 $L \uparrow$ to 3, w stays fixed at 3

5. Consider a firm that pays an efficiency wage. What would we expect to happen to the efficiency wage premium (the wage above the equilibrium wage) if the following occur:

- (a) The cost of monitoring workers falls.
- (b) A large number of high quality workers enter the labor market.
- (c) The government raises the minimum wage.

(a) easier to monitor & less need
for efficiency wage \Rightarrow drop

(b) workers more substitutable +
increase in supply \Rightarrow \downarrow in
equilibrium wage \Rightarrow drop

(c) increase in a binding min
wage below the efficiency wage
should have no effect, but
in practice may work if
they are close & you have
to work harder at the efficiency
job wage

6. Consider worker preferences as

$$u = u(w, \text{risk of injury})$$

where $\frac{\partial u}{\partial w} > 0$ and $\frac{\partial u}{\partial \text{risk of injury}} < 0$. Suppose we have two markets (A and B) where the equilibrium wage is higher in market A than market B.

- (a) If labor is freely mobile, what can be said about market A relative to market B.
- (b) If labor is not initially mobile, would we ever see labor move from market A to market B if labor were suddenly allowed to become mobile?

(a) The risk of injury is higher in market A than market B.

(b) yes, if the difference in risk of injury is high enough (in A relative to B)

7. Consider worker preferences as

$$u = u(w, \text{flowers})$$

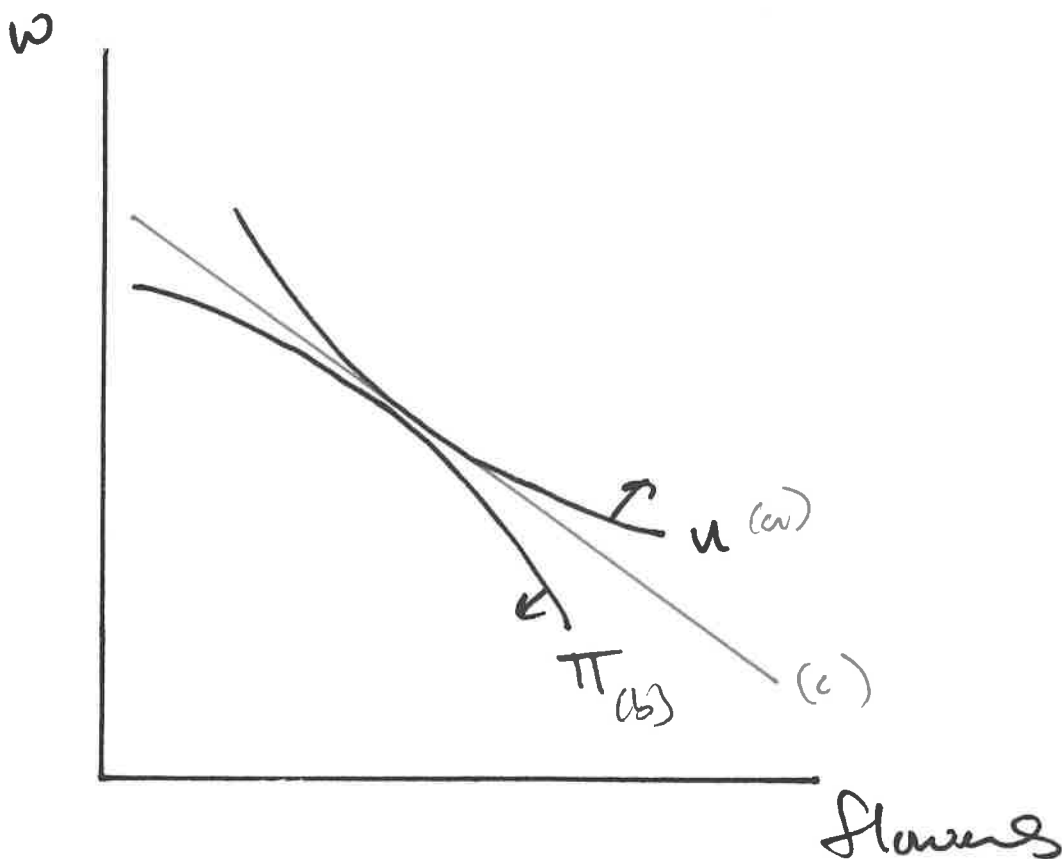
where $\frac{\partial u}{\partial w} > 0$, $\frac{\partial u}{\partial \text{flowers}} > 0$ and firms profits as

$$\Pi = \Pi(p, q, w, \text{flowers})$$

where $\frac{\partial \Pi}{\partial w} < 0$, $\frac{\partial \Pi}{\partial \text{flowers}} < 0$.

- Draw the indifference curve for a typical worker.
- Draw the isoprofit curve for a typical firm.
- Draw the equilibrium hedonic wage function.

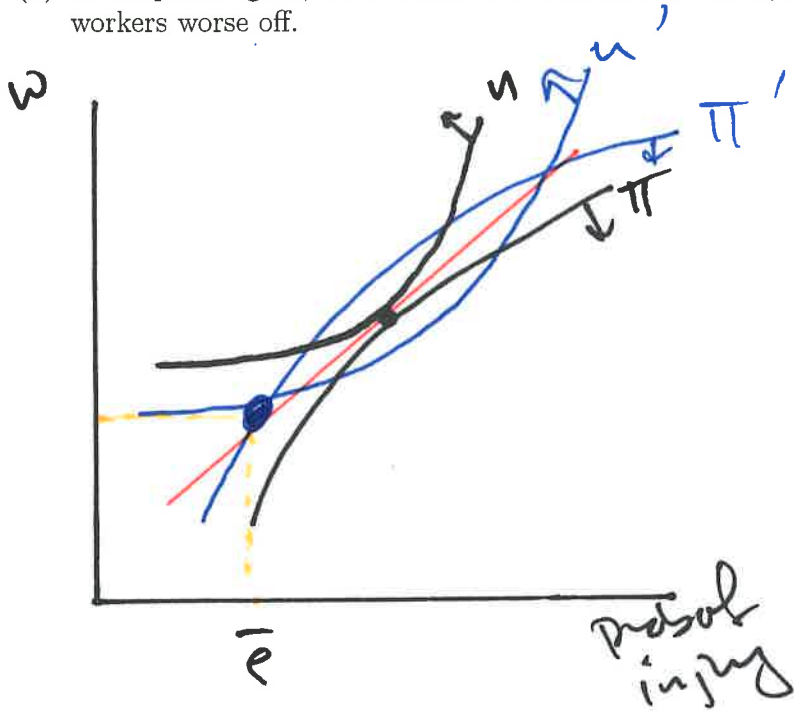
} can be done in 1 or 3 figures



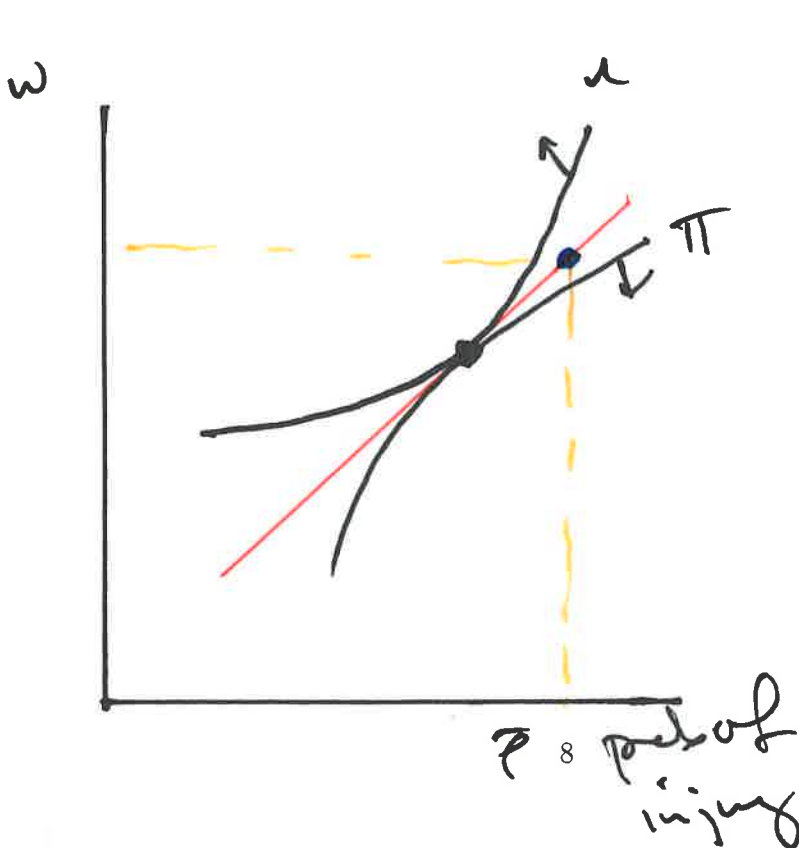
in this case the difference is positive for workers & negative for firms (this is similar to the intermediate micro story)

8. Health and safety regulations are designed to make workers safer, but it is often argued that they decrease utility/profits.

- (a) Using the figure shown in class, show the argument against the health and safety regulations.
- (b) In a separate figure, show a case where an increase in regulation does not make firms and workers worse off.



regulation at
max prob
of injury \bar{p}
 \Rightarrow $\downarrow u$ & π



\bar{p} is non-binding
& small \downarrow in
 \bar{p} will leave
 u & π unchanged