LECTURE 12
GOVERNMENT INTERVENTIONS
FINAL REVIEW

Question 1: Additional Questions on Exchange and Costs Q1

- Consumer A's utility function is

$$U^A = x^A - 2y^A$$

- Consumer B's utility function is

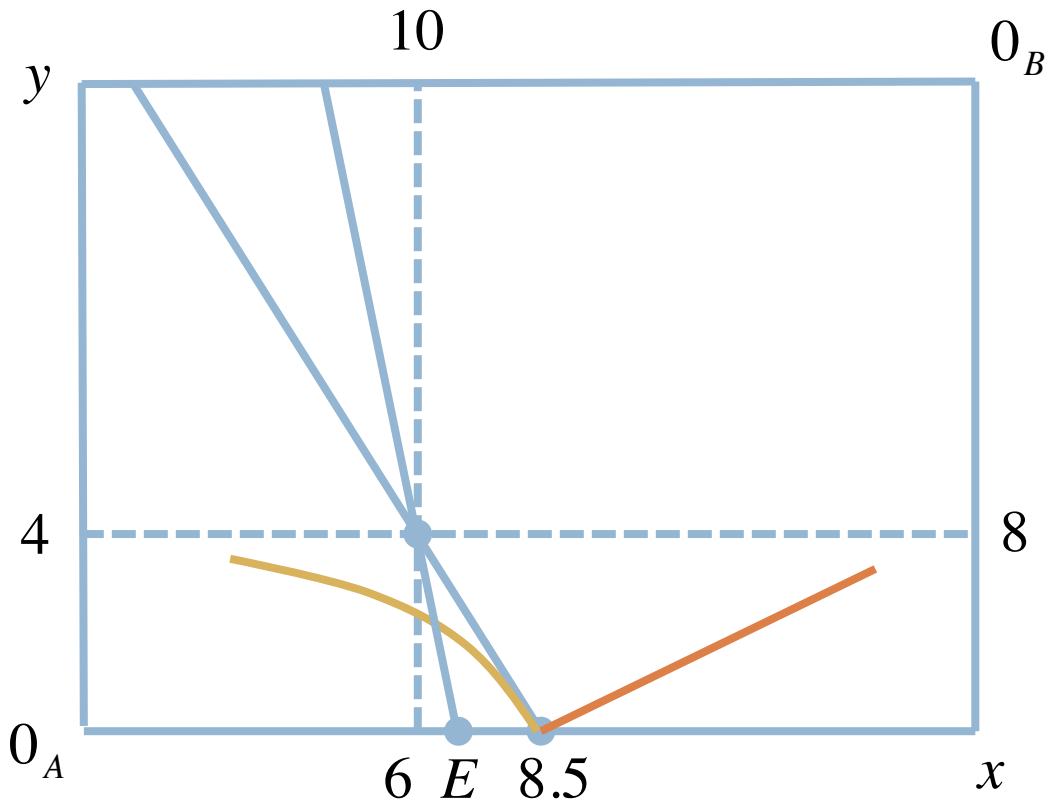
$$U^B = \sqrt{x^B y^B}$$

- The contract curve is

$$y^A = 0$$

  - When A consumes *y*, A can give B some *y* and both will be better off
  - When A does not consume *y*, if A consumes more *x*, B will be worse off, if B consumes more *x*, A will be worse off

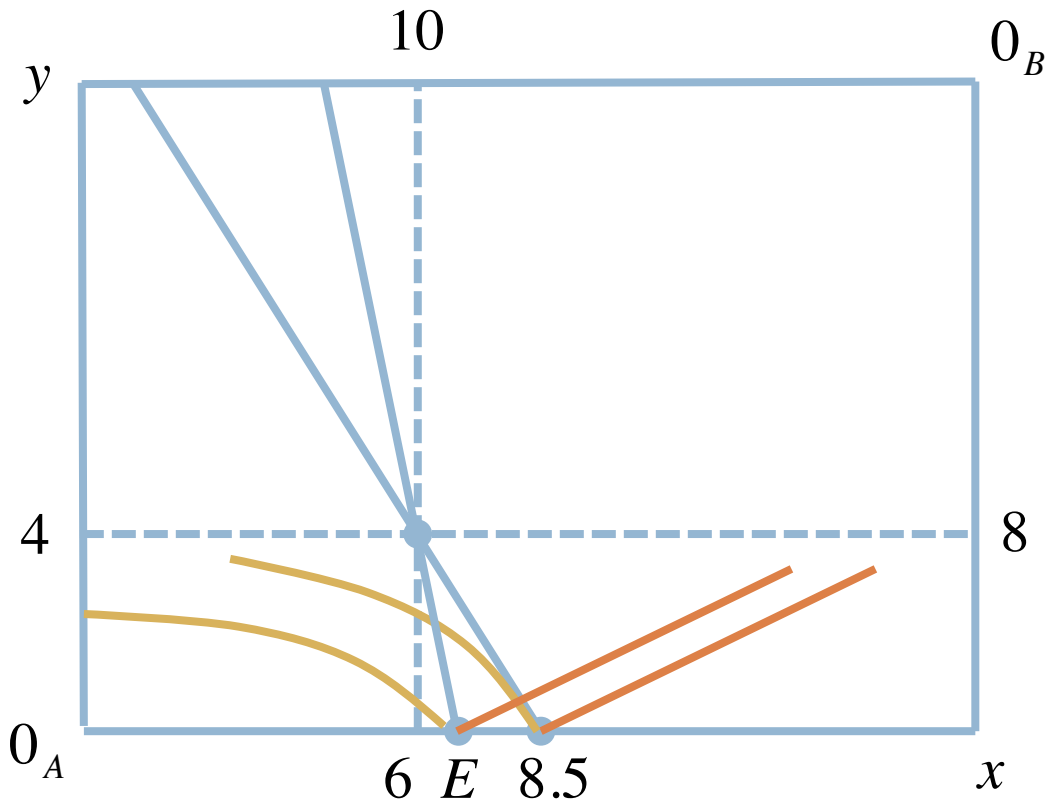
Question 1: Additional Questions on Exchange and Costs Q1



Assuming tangency point, the equilibrium allocation is (8.5, 0, 7.5, 12)

Is point E is an equilibrium allocation?

Question 1: Solution



Point E is also an equilibrium

At point E, the budget line is not tangent to the indifference curve of consumer B

Question 1: Comment

- Equilibrium is not unique in this question
- There are more than one equilibrium prices and more than one equilibrium allocations
- Only one equilibrium allocation is a tangency point
- In general, it is possible to have more than one equilibrium in the economy

Question 2: Demand for Input

- In the long run, when labor is more expensive, holding other factors constant, the demand for labor drops
  - Similarly, when capital is more expensive, the demand for capital drops
- True or false?

Question 2: Solution

- When labor becomes more expensive, demand for labor cannot increase
  - There is no Giffen input
- But demand for labor can remain the same
- If the production function is

$$Q = \min(4L, 5K)$$

- To minimize cost, the firm produces at the kink point

$$4L = 5K = Q$$

- Demand for labor/capital is independent of input prices

Question 3: Short-run Firm Behavior

- A profit-maximizing firm in a perfectly competitive market currently produces at an output level where its short-run average total cost curve is upward sloping. Does it imply that the firm is earning positive profit?
- Yes!
- When *SAC* is increasing in *Q*, *SMC*>*SAC*
- Thus *P*=*SMC*>*SAC*

Question 4: Long-run Equilibrium

- Two perfectly competitive markets have the same market demand curves. The minimum level of the *LAC* is the same for firms in market 1 and market 2. The quantity at the min(*LAC*) for firms in market 1 is higher than that for firms in market 2.
- Are the long-run equilibrium prices the same in the two markets?
- Which market has more firms in the long run equilibrium?

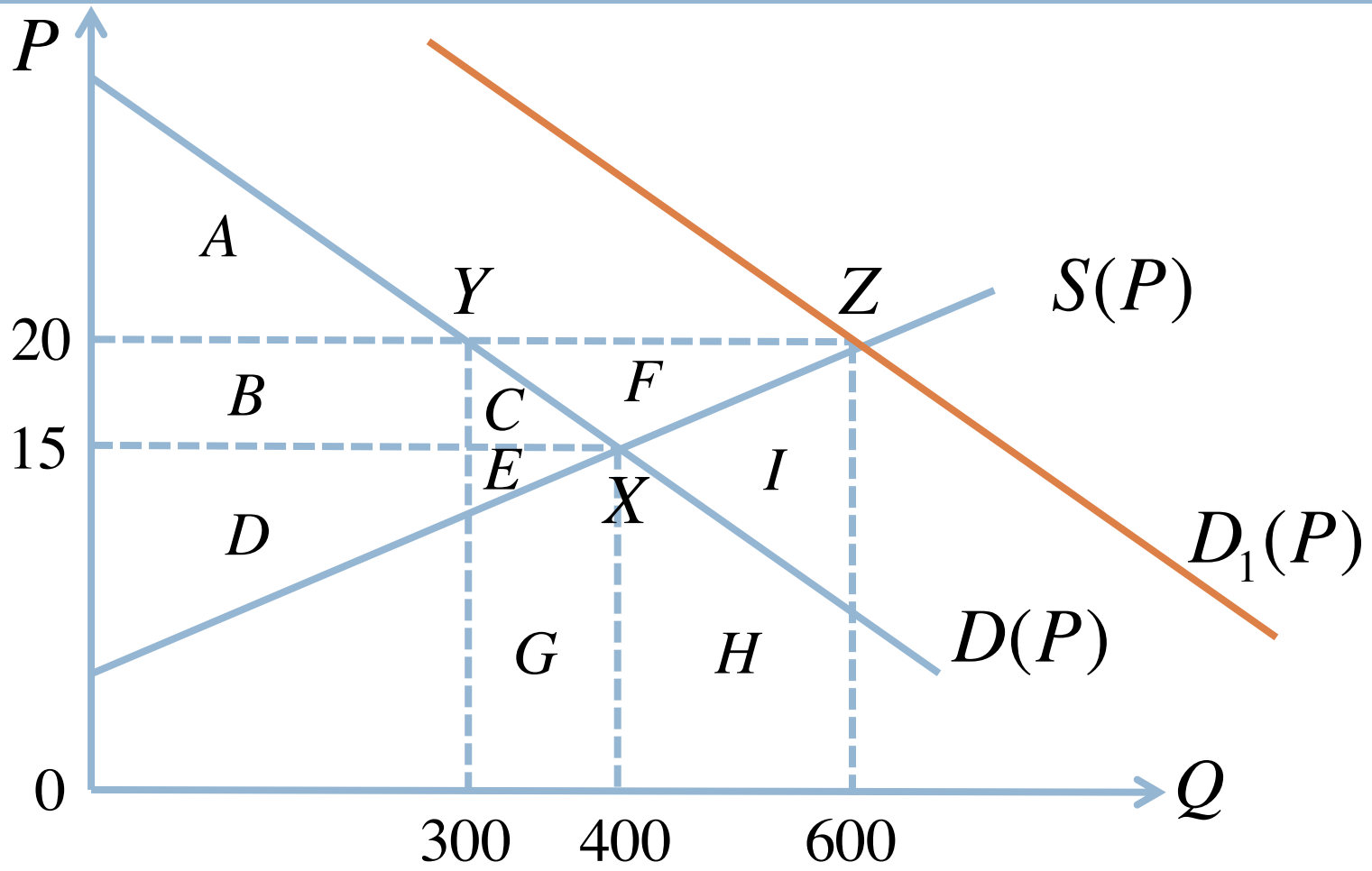
Question 4: Solution

- Equilibrium price is the same
  - Long-run equilibrium price is determined by the minimum level of *LAC*
- Market 1 has fewer firms
  - If long-run equilibrium price is the same
  - Since market demand is the same
  - Equilibrium quantity is the same
  - Since each firm in market 1 produces more
  - Fewer firms in market 1

Question 5: Government Purchase

DWL=C+E+G+H+I

Why isn't F part of the DWL?



Question 5: Solution

- Under free market equilibrium
  - TS=A+B+C+D+E
- Under government intervention
  - Producers receive F, government pays F
  - TS=A+B+D-G-H-I
- What goes into the DWL?
  - C and E are part of the total surplus before government purchase but no longer part of the total surplus under government purchase
  - G, H, and I are not part of the total surplus before government purchase but they are part of the expenditure under government purchase

Q&A on Lecture 12