Clicker Question

A consumer’s MWTP curve is the same curve as his

a. supply curve.
b. demand curve.
c. production-possibility curve.
d. income-consumption curve.
Price Setters and Price Takers

- A seller is called a **price taker** if she charges a price set by others (usually the market price).

- A seller is called a **price setter** if she sets her own price, which may be different from what others are charging.

- In a perfectly competitive equilibrium, every firm is a price-taker.
  
  - Even though a firm can set any price it wants to,
  
  - each firm will voluntarily charge the market price,…
  
  - and no firm will decide to set a different price.

- Why doesn’t a competitive firm set its price **higher** than the market price?
  
  - Because of perfect information, buyers know that other firms are offering the same product at the market price,…
  
  - so if one firm asks buyers to pay a higher price, they will buy elsewhere.

- Why doesn’t a competitive firm set its price **lower** than the market price?
  
  - Each firm is selling as much as it wants to sell at the market equilibrium price,…
  
  - (there’s no excess supply),…
  
  - so why should it sell for less?
Competition and Supply Curves

- Supply curves answer the question, “How much would you want to sell at each reasonable price?”

- Individual supply curves exist only for firms that are price takers,…

- …including all firms in perfectly competitive markets.

- After we explain producer surplus, we will see where supply curves come from.

Production Cost and Producer Surplus

- Isabel makes T-shirts.

- Suppose that Isabel can produce a T-shirt at a cost of $10 (the total opportunity cost, including the cost of her time).

- Then she finds out that the same kind of T-shirt can be sold at a price of $22.

- She says “Great! It costs me only $10, but I can sell it for $22, so I will produce it.”
An economist would say:

- The market price is $22,
- the opportunity cost of producing the shirt is $10,
- so Isabel will receive a **producer surplus** of ? for the shirt.
- The producer surplus from a unit of production is the profit *originating from that unit*.

A positive producer surplus, creates an incentive to produce and sell the product.

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**How Many Units Should a Competitive Firm Produce?**

- To make a rational decision about how much to produce (and supply),…

  …the owner or manager of a competitive firm must “think at the margin,” and evaluate each unit, one at a time, to decide whether or not that unit is worth producing.

- The competitive firm is a price-taker, so the *price* received for every unit will be the same.

- But even when units are identical, the *opportunity cost* of production might be different for each unit.
Marginal Cost

- Suppose a firm is producing many units.

- The marginal cost (MC) of unit \( Q \) is the *opportunity cost* of producing unit \( Q-1 \) units when \( Q-1 \) units are being produced.

  - We can think of \( MC \) as the additional cost (or incremental cost) required to produce \( Q \) units instead of \( Q-1 \) units.

  - So as \( Q \) changes, \( MC \) may change as well, even when all units are identical to one another.

  **Example:** Does this worker speed up or slow down as he works on engine after engine each day?

  - Does he get going?
  - Or does he get tired?

  - The faster he works; the lower the cost!

- As more units are produced, the \( MC \)

  - will sometimes fall at first,…

  - …but *eventually* will start to increase,…

  - …because when a large enough quantity is being produced,…

  - …it becomes more difficult and costly to increase production further.

  **Example:** Farmer Jones has to kiss his cows to get more out of them.

  **Example:** Factories have to pay workers higher wages (overtime) for hours worked above the standard 40-hour week.
Marginal Cost and Producer Surplus

- The Producer Surplus from producing Unit Q is equal to $P - MC$ for that unit.

  - This is the profit received from producing Unit Q.
  
  - $P$ is the same for all units, but the $MC$ of Unit Q is likely to be different from the $MC$ of other units.

- A profitable firm has an incentive to produce all units that create a positive producer surplus,…

- …but the firm will not produce past the level where all additional units would bring negative surplus.

- In the case of increasing marginal costs ($MC$), a firm will have the incentive to produce Unit Q if $MC < P$, in order to get surplus $P - MC$.

- The firm would continue to increase output as long as $MC < P$,

- But the firm will not produce units with $MC > P$. 

Add another worker here

MC is likely to be low when a factory is operating below capacity.

Creating a place for another worker would cost more than the value of the goods he makes.

No room for more workers.
**Marginal Cost and Supply!**

- **Suppose** $P$ is the market price of chairs.

- **How many chairs would you produce when...**
  - $P = $1 ?
  - $P = $4 ?
  - $P = $8 ?
  - $P = $11 ?
  - $P = $5 ???

- Notice that the MC curve provides the answers to supply-curve questions.

- In this case, the MC curve is the same curve as the supply curve.

- But the axes are different. (The functions are inverses.)

- If you know one, you can derive the other.

**Marginal Cost and Producer Surplus**

- **Suppose** $P = $8.

- How much does it cost to produce the 1st chair?

- How much surplus do you get when you sell it?

- 2nd chair?

- 3rd chair?

- 7th chair?

- You will produce 7 chairs.

- **Producer surplus** is the sum of profits created as units are produced.

- Costs that enable production to begin (“fixed costs”) are not subtracted from producer surplus.
**Clicker Question**

How much producer surplus will the firm obtain (approximately) if the price is $6

a. $36  
b. $19  
c. $12  
d. 0

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**Economic Efficiency**

- **Economic activity** has the potential to create value (utility, satisfaction, surplus, etc.) for the members of society.

- **Economic efficiency** measures how well economic activity fulfills its value-creating potential.

- We say that economic activity is efficient when no value-creating opportunity is wasted.

- The level of efficiency does **NOT** depend on how the created value is distributed.
Concepts of Efficiency

- Economists apply two different concepts of economic efficiency:
  - Pareto efficiency
  - social surplus

- The two concepts are related, but they are not equivalent.

- We will explain both, but we will emphasize social surplus.

Pareto Efficiency

- A changed situation is a **Pareto improvement** if some people are better off after the change, but no one is worse off.

- A situation is called **Pareto efficient** when no Pareto improvements are possible.
Example: Pareto Efficiency

- On a hot Friday night…
  - *Pete* has a blind date with *Paula*.
  - And his friend *David* has a blind date with *Deirdre*.

- The dates are both disasters 😞. …

- Luckily, all four meet on the way back to the dorms.

- Economists call this outcome a *Pareto improvement* compared to the first dating situation.
Pareto Efficiency

A changed situation is a *Pareto improvement* if some people are better off after the change, but no one is worse off.

In our blind date example,

- *Pete* and *Paula* did not like each other, and neither did *David* and *Deirdre*, but....

A situation is called *Pareto efficient* when no Pareto improvements are possible.

- This might happen because all possible Pareto improvements have already occurred,...

- or because there never were any possible Pareto improvements.

Pareto improvements are socially desirable,...

because, by definition, some people are better off and no one is worse off.
But a Pareto-efficient situation may not be *socially desirable*.

- Suppose a billionaire, enjoys every dollar he has.

- Then, the situation in which he has all of the world’s wealth is Pareto efficient,…

- because no Pareto improvements are possible (you cannot give anything to anyone else without making *the billionaire* worse off).

- The rest of society might be miserable, however.

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**Clicker Question**

Suppose I like apples and you like oranges. Which of the following situations is NOT Pareto efficient?

- a. We both have apples.
- b. I have apples and you have oranges.
- c. We both have oranges.
- d. I have oranges and you have apples.
Economic Surplus

- Economic *surplus* measures the benefits of economic activity in monetary units.

- *Consumer surplus* is the benefit obtained by consumers.

- *Producer surplus* is the benefit obtained by producers.

- *Social Surplus* = *Consumer Surplus* + *Producer Surplus*

- The amount of surplus created is a measure of economic efficiency.

- *Social Surplus* is easier to apply than *Pareto efficiency*.

Total Surplus in the Market

- A buyer’s consumer surplus is the area between the price and the demand curve.

- A seller’s producer surplus is the area between the supply curve and the price.

- The same rules apply to the market as a whole:
  
  - Consumer surplus for the entire market is the area between the price and the market demand curve.
  
  - Producer surplus for the entire market is the area between the price and the market supply curve.
  
  - This is because each unit on the horizontal axis is being bought by a buyer and sold by a seller.
Social Surplus at the Competitive Equilibrium

- The market:
  - demand
  - supply
  - equilibrium price
  - equilibrium quantity
- Consumer surplus ($CS$)
- Producer surplus ($PS$)
- Social surplus ($SS$)

$$SS = CS + PS$$

Surplus and Competition

- Surplus is maximized in competitive equilibrium.
- All units that generate positive $CS$ and $PS$ (to the left of $Q^*$) are produced and sold.
- So there are no unexploited gains of trade.
- Additional units that would create negative $CS$ and negative $PS$ are not produced or sold.
- Policies that interfere with competitive equilibrium, tend to reduce surplus.
- But is that always bad? *Discussed in Lecture 13.*
**Clicker Question**

If the price in this market is $10, the consumer surplus would be approximately _____.

a. $100  
b. $30  
c. $12  
d. $3

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**End of Lecture 10**