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Econ 301—Bethany College

**Lecture 19: Types of Costs**

1. Are drug companies cheating us?
	1. After all, many pills cost mere pennies to make but companies charge thousands of dollars a year.
	2. The most expensive drug—Alexion Pharmaceutical's Soliris—cost $409,000 a year. [[1]](#footnote-1)
2. Review of lecture one
	1. Recall opportunity cost, or the net gain of the next best option
	2. Accounting framework
		1. Benefit – Cost = Accounting Profit
		2. Ex: If I make $50 selling apples and it costs $40 bringing them to market, my profit is $10.
	3. Economic framework
		1. Accounting Profit – Opportunity Cost = Economic Profit
		2. Ex: If, instead, I could have spent $45 selling candy apples for a total of $60, my opportunity cost is $15
	4. Since $10 – $15 = -$5, I have negative economic profits. In other words since I could have made more selling candy apples I actually made a loss. My opportunity cost was high.
3. Perfect competition
	1. Requirements
		1. Free entry and exit
		2. Identical goods
		3. Perfect information
		4. Large number of buyers and sellers
	2. In perfect competition, all firms are *price takers*—they have no control over their price.
	3. This results in them making no economic profit.
	4. Note that perfect competition, despite its name, is not a goal. I know of no one who would like to live in a world where all movies are the same!
4. Other types of costs
	1. *Fixed cost*—cost which ***does not*** increase as output increases (total fixed costs: TFC)
	2. *Variable cost*—cost which ***does*** increase as output increases (total variable costs: TVC)
	3. *Total cost*—total fixed costs plus total variable costs (TC)
	4. *Average total cost*—total cost divided by total output (ATC)
	5. *Marginal cost*—the additional cost to produce one more unit of output (MC)

$$MC= {∆VC}/{∆q}={w∆L}/{∆q}$$

* 1. *Total revenue*—total output times price per unit (TR)
	2. *Marginal revenue*—the additional revenue from selling one more unit of output, aka price (MR=P)
	3. *Sunk cost*—an expenditure which cannot be retrieved
1. An example

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Output | TFC | TVC | TC | MC |
| 0 | 24 | 0 |  |  |
| 1 | 24 | 2 |  |  |
| 2 | 24 | 6 |  |  |
| 3 | 24 | 12 |  |  |
| 4 | 24 | 20 |  |  |
| 5 | 24 | 30 |  |  |
| 6 | 24 | 42 |  |  |
| 7 | 24 | 56 |  |  |
| 8 | 24 | 72 |  |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Output | ΔΠ | Π | TR | TC | ATC | MC | MR |
| 0 |  |  |  |  |  |  |  |
| 1 |  |  |  |  |  |  | 8 |
| 2 |  |  |  |  |  |  | 8 |
| 3 |  |  |  |  |  |  | 8 |
| 4 |  |  |  |  |  |  | 8 |
| 5 |  |  |  |  |  |  | 8 |
| 6 |  |  |  |  |  |  | 8 |
| 7 |  |  |  |  |  |  | 8 |
| 8 |  |  |  |  |  |  | 8 |

1. The Shape of Things
	1. If we are to diagram the average and marginal cost curves, we will notice that the average cost curve is U-shaped and the marginal cost curve will intersect the ATC at its minimum.

$$ATC\left(q\right)=\frac{C(q)}{q}$$

$$ATC^{'}(q)=\frac{C^{'}\left(q\right)q-C\left(q\right)}{q^{2}}=0$$

$$ATC^{'}(q)=\frac{C^{'}\left(q\right)-{C\left(q\right)}/{q}}{q}=0$$

$$ATC^{'}(q)=C^{'}\left(q\right)-{C\left(q\right)}/{q}=0$$

$$C^{'}\left(q\right)={C\left(q\right)}/{q},MC=ATC$$

* 1. Intuitively, when an additional value is less than the average, the average will go down. When it is above average, the average will go up.
		1. So when MC is lower than ATC, ATC is decreasing.
		2. And when MC is higher than ATC, ATC is increasing.
1. Why we can’t all have cheap Netflix
	1. Consider when the fixed costs are much higher than the variable costs. Marginal costs, by definition, don’t consider fixed costs.
	2. In industries such as media or medical drugs—where the fixed costs is very high compared to the marginal cost—everyone wants to be charged the marginal cost. But if everyone is charged the marginal cost, you can’t cover your fixed costs.
	3. The most expensive drugs on the market address disorders only a few people have. Soliris treats a rare disorder where the immune system attacks red blood cells. Only 8,000 Americans have the disorder.
		1. Though their marginal costs are consistently low, their average costs are very, very high.
	4. This is one of the reasons why Netflix had to increase its prices: because so many people started using Netflix.
		1. Media companies, knowing that unlimited streaming was crowding out DVD sales, demanded a higher price from Netflix for the rights to stream its content.
		2. This higher price is the only way to cover the very high fixed costs of production.
1. <http://www.forbes.com/2010/02/19/expensive-drugs-cost-business-healthcare-rare-diseases.html> [↑](#footnote-ref-1)