

Chapter 22 – Perfect Competition

- 1. Perfect Competition** – an industry in which many firms sell identical products to many buyers, there are no restrictions on entry into the industry, established firms have no advantage over new ones, and sellers and buyers are well informed about prices
 - Perfect competition arises if the minimum efficient scale of a single producer is small relative to the demand for the good or service
- 2. Price Taker** – a firm that cannot influence the price of a good or service, since they can't influence the price that everyone else is charging. Price takers face a perfectly elastic demand curve, everything in the market is a perfect substitute
- 3. In Perfect Competition, the Marginal revenue is also the price, since the price is constant**
- 4. Total Revenue** – price/MR of the output multiplied by the marginal number of output sold
- Since marginal revenue is always the price, which is fixed, the marginal revenue is a horizontal line at the price, while the total revenue curve is the integral of the marginal revenue, or a straight line w/ a slope of the marginal revenue. Hence, if the $MR = 25$, the $TR = 25x + 0$
- 6. Short Run Decisions** – whether to produce(stay open), and if so, how much to produce
- 7. Long run decisions** – whether to increase/decrease plant size, whether to leave the industry
- 8. Total Revenue/Total Cost and the profit maximizing output**
 - The point at which total revenue – total cost yields the greatest value is the profit maximizing output
 - The points at where $TR - TC = 0$ are the break even points. Note that at the break even point, the firm still makes a NORMAL profit equal to the best alternative return forgone. This is because although they make no additional profit, the normal profit was considered part of the production cost, hence they'll make the normal profit as long as they don't incur any economic loss
- 9. Marginal revenue/Marginal Cost and the profit maximizing output**
 - The profit maximizing point occurs when the marginal cost = marginal revenue = price
 - When the marginal cost = marginal revenue, moving in either direction would either result in the marginal revenue being HIGHER than the MC, meaning that we should produce more, or the MR being lower than the MC, meaning that we're losing money on the extra production and should produce less.
- 10. Profits and Losses in the short run**
 - Remember that the Marginal Cost intersects the average cost at it's lowest point, and that the costs of production at a certain output doesn't change as the marginal revenue/price changes (if people suddenly decide they only want to pay \$1 for Microsoft Windows instead of \$100, it still takes the same amount to manufacture Windows.)
 - We produce at the profit maximizing point, where marginal cost = marginal revenue. Note that this may NOT be the point of lowest ATC. The economic profit/loss is the $MR(\text{or price}) - ATC * \text{quantity}$, and obviously could be positive or negative
- 11. Short Run Supply Curve**
 - Note that the MC intersects the AVC at its lowest point, and we always operate where the $MC = MR$
 - Shutdown point** – the point at which the marginal revenue(price) = the minimum $AVC = MC$. If the AVC is higher than the MR, it is better to shut down, since if we shut down, we only lose the average fixed cost, yet if we're producing, we incur both the TC and an additional part of the AVC.
 - If the price is below the lowest point of the AVC, we produce nothing (we shut down). If it's higher, the supply curve becomes the marginal cost curve. This is true because at every price level, we produce where $MC = MR$, and since $MR = \text{price}$, the MC becomes the supply curve
- 12. Short Run Industry Supply Curve** – shaped as the same as supply curve for a single company, but the quantities are multiplied by the number of companies in the industry. Note that before the shutdown price, the number produced is 0, since all firms shut down. At the shutdown price, some firms may choose to shut down, while others choose to operate – they're the same economically. Each firm can produce either the shutdown quantity or 0, nothing in between, but as an industry, the number can be in between 0 and the shutdown quantity * the # firms in the industry
- 13. Short Run Equilibrium**
 - Defined as when each firm is maximizing profit ($MR = MC$)**
 - The demand curve intersects the supply curve at some price, which is also the MR
 - If demand changes, the demand curve shifts, price/MR changes, and the output level changes
- 14. Long Run Equilibrium** – Plants can change size, firms can exit or enter the industry
 - Firms entering the industry** – Firms will enter the industry when the industry is making an economic profit (operating above the break even point. When firms enter the industry, it shifts the supply curve to the right and the price falls and the economic profit of each exiting firm decreases. As the price falls, existing firms decrease output, but since there are more firms in the industry, total industry output actually increases.

- b. **Exiting the industry** – firms exit the industry when they incur long term losses. Exiting the industry shifts the supply curve to the left, which raises the price, which decreases losses for the surviving firms, which will increase their output level. However, since there are less firms in the industry, total output drops
 - c. **Changes in plant size** – changing plant size could increase profits. A firm's short run supply curve is linked to its marginal cost. The plant size increase shifts the marginal cost curve to the right (more output for same marginal cost), supply/output increases. If everyone in the industry does this, output increases, and the price falls. The falling prices limits the amount firms can increase plant size to increase profits
 - d. **Long Run Equilibrium** – the LR equilibrium occurs when the marginal revenue = MC = LRAC, or in other words, breaking even in the long run. Here, everyone makes a normal profit, and no one has an incentive to enter or leave. When they're operating above this point, firms enter, drives down prices until it's back in LR equilibrium. When they're suffering losses, firms exit, which brings up prices until it's back in LR equilibrium.
 - e. **Hence, in a perfectly competitive industry, firms neither enter nor exit and old firms neither expand nor downsize, each firm just earns normal profit.**
15. Companies in the real world downsize and expand and close because the market is never in long run equilibrium, since demand and technology are both constantly changing
- a. **Long Term Decrease in demand** – Demand curve shifts left, price falls, firms adjust output accordingly, so that MC = MR, in short run equilibrium. Now, at the lower price, some firms are losing money, so they leave the industry, and the supply curve gradually shifts leftward until it intersects the new demand curve at the same price as before the change in demand. As the price increases, the amount each firm produces returns to before the demand change, but the total output is lower since there are less firms in the industry. Also, while all this is taking place, firms incur economic losses
16. **External economies** – factors outside a firm's control that lower costs as the INDUSTRY output increases
17. **External diseconomies** – factors outside a firm's control that raise costs as INDUSTRY output increases
18. **Long Run Industry Supply Curve** – the line formed by the 2 points, before the change in demand, and after all adjustments are made after the long run change in demand. With no external economies or diseconomies, price before = price after. However, with an decreasing cost industry (external economies), the price after is higher than the price before the demand drop (AS the output increases, the price decreases, so as the output decreases, the price must increase). With an increasing cost industry (external diseconomies), the price after is lower than the price before (as output increases, price increases, so as output decreases, price decreases). Remember everything here is related to a DECREASE in demand. An increase in demand leads to the opposite effect
19. **Technological change** – new tech allows firms to produce at a lower cost, so their cost curves shift downward. With lower costs, firms are willing to supply a given quantity at a lower price, so industry supply increases. As industry supply increases, demand hasn't changed, so the price falls
20. **Going to new technology** – firms that initially switch to new technology earn a profit, so new firms enter the industry. Firms that don't switch incur losses, so they either leave the industry or switch to the new technology, so eventually the only ones left are the new ones and those that have the new tech, so supply increases, price falls, profits fall, and whoever can't afford to stay leaves. IN the end, the market is again in long run equilibrium – at least in theory.
21. Some firms earn profits and others incur losses because of this process. The market never reaches equilibrium, since every firm is constantly changing in order to be part of those who make a profit, and not part of those who don't.
22. **Efficient use of resources** – if someone can be better off w/o someone else being worse off, resources are NOT being used efficiently. Also when marginal benefit = marginal cost
23. Firms that are maximizing profit are technology efficient (they're operating on their supply curves) and economically efficient (they combine resources to minimize cost). Note that economic/technological efficient has absolutely nothing to do with lowest average total cost.
24. **External benefits** – benefits that apply to someone other than the buyer of the good. Your neighbor's new garden, for example.
25. **External costs** – costs borne not only by the producer of a good or service. Pollution, for example
26. **Efficiency** - when there are no external benefits or external costs
27. **Market Supply Curve** – the marginal cost that anyone bears to produce one more unit of a good or service
28. **Market Supply and Demand** – Remember that the supply is the marginal cost curve and the demand is the marginal benefit curve. Consumers are efficient anywhere on the demand curve, producers are efficient anywhere on the supply curve, so the total efficient point is where they intersect, and here consumer and producer surplus is maximized
29. **Perfect competition w/o external costs or benefits is efficient**
30. **Obstacles to perfect competition/efficiency**
- a. **Monopoly** – restricts output below its competitive level to raise price and increase profit
 - b. **Public goods** – national defense, law enforcement – if left to a competitive market, too small a quantity would be produced to be effective, so government must intervene
 - c. **External Costs and Benefits** – factories generate pollution, so government must limit these factors