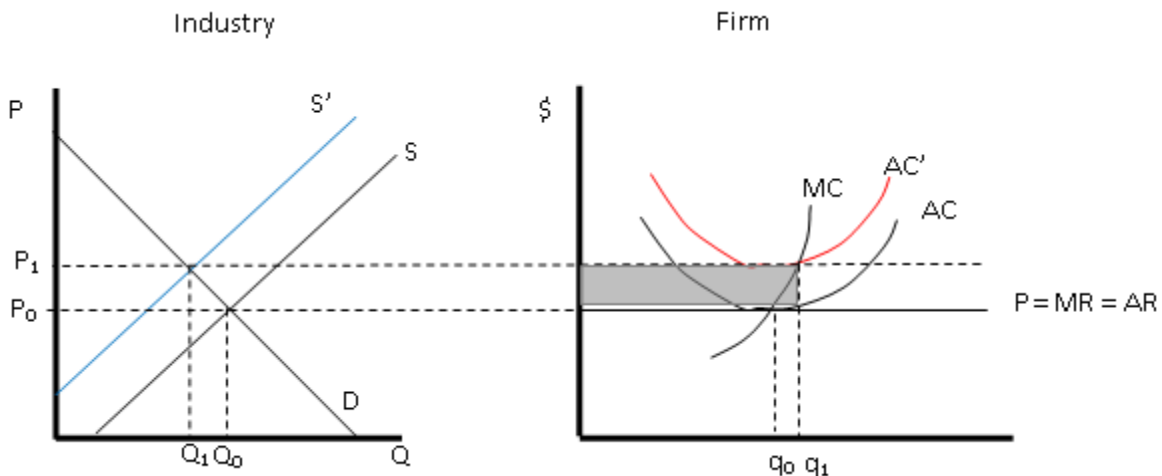


Lecture # 15 -- Long Run Equilibrium/Perfect Competition and Economic Welfare

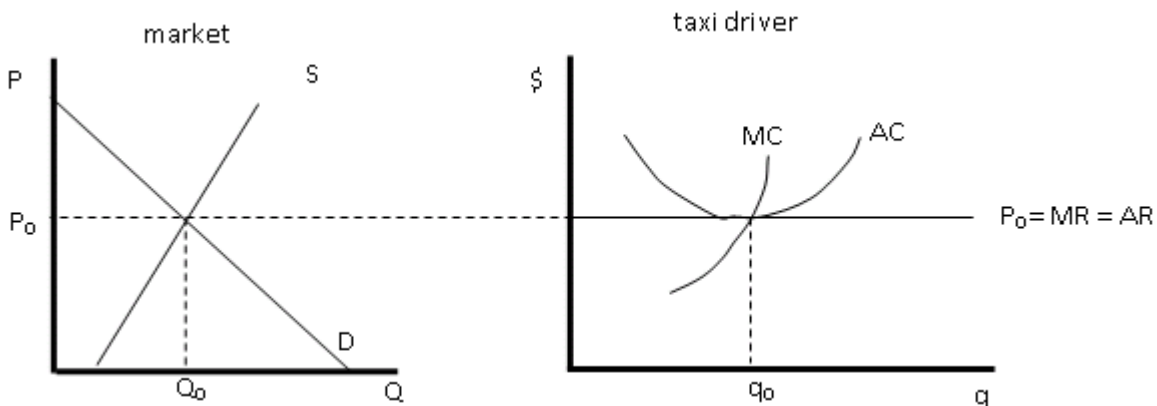
I. Economic Rent

- Question: in real life, we certainly see firms earning positive profits, even in the long run. How do we explain that?
 - One thing to note is that, even if long run profits are zero, short run profits may be positive.
 - Another potential benefit is economic rent.
- Economic rent -- a payment to the owner of an input beyond the minimum necessary for the factor to be supplied
 - Can be positive, even when economic profits are zero.
 - This is because economic profits include opportunity cost.
 - In this case, one of the opportunity costs is not "cashing in" on the economic rent (e.g. using, rather than selling a valuable property).
- Examples of economic rent
 - In this example, economic rent comes from the value of a scarce location.
 - Consider two factories. One is located near a port. The other is inland, so that its products must be delivered to the port by truck.
 - Both factories participate in a global market, so that they are price takers.
 - Because the factory near the port has lower costs, it earns higher profits.
 - As a result, its land is worth more. If both factories were offered for sale, the factory near the port would sell for a higher price.
 - Thus, the higher profits earned by the factory near the port are an economic rent. It is compensation for the prime location.
 - Note that economic profits are still 0. This economic rent compensates for an opportunity cost. Because the factory site near the port is worth more, the opportunity cost of running that factory is higher than for the inland factory.

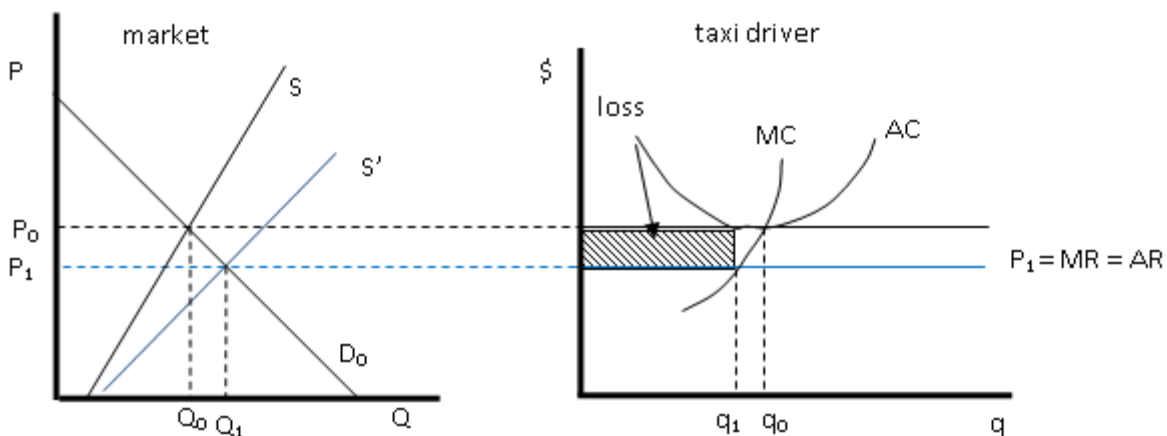
- The Corn Laws in 19th century England show how a change in policy creates economic rent.
 - These laws restricted imports of grain into England, leading to higher prices.
 - Higher grain prices increased demand for farmland.
 - The aristocratic class was able to charge farmers higher rents.
 - Thus, it was landowners, who had control of a scarce resource (land), that benefited from the Corn Laws.
 - The graph below illustrates.
 - The market begins in long run equilibrium, with zero economic profits.
 - Costs are represented by the black AC and MC curves.
 - The tariffs cause the supply curve to shift in (blue line below). Fewer grains are coming into England from other countries.
 - This causes prices to rise and lowers quantity.
 - Individual farms now make a profit.
 - In our other examples, this would have caused English farmers to enter the market, lowering prices once again. In effect, English farmers would have replaced foreign farmers and supply would have returned to the original black supply curve.
 - However, that did not happen here because farmland was a scarce resource.
 - Instead, as more farmers tried to enter, the rent that landowners could charge increased.
 - This shifts the average cost curve up (red line below).
 - Thus, a zero-profit long run equilibrium was reached not by supply increasing, but by rising costs.
 - Prices remained higher, and aristocratic landowners were the main beneficiary of the tariffs.



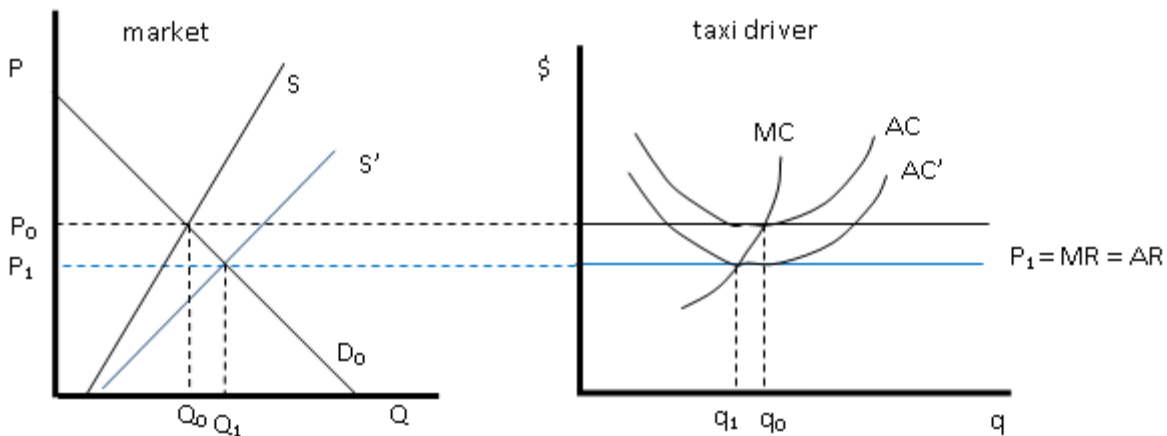
- The example of how Uber has affected both taxi drivers and the value of their licenses (e.g. taxi medallions) shows both the effects of a license and how new technologies can disrupt a market and change the value of a license.
 - Again, we start in long run equilibrium. Here, we illustrate the market for rides, showing the ride market on the left, and a taxi driver as the typical firm.
 - I've drawn supply to be relatively inelastic, since the number of medallions is fixed.
 - Note that it need not be perfectly inelastic. Although the number of medallions is fixed, taxi drivers can choose how much effort they wish to use (e.g. number of hours driving per day).



- Uber increases competition for rides. This leads to an increase in supply.
 - Supply shifts out (in blue below)
 - I've shown the new supply curve as more elastic, as Uber drivers have more flexibility than regular taxi drivers.
 - This lowers the market price
 - Since taxi drivers with medallions have higher costs than Uber drivers, they are now losing money.



- Taxi drivers cannot continue to operate with high medallion costs.
 - They may decide to exit the market. However, if they do, medallion owners will want to sell their medallions to someone else.
 - However, they will be unable to do so unless they lower the price.
 - Thus, whether it is to the current driver or a new driver, the medallion owner will need to lower the price he charges for the medallion.
 - Since the medallion is a fixed cost of taxi operation, this only shifts the average cost curve (AC).
 - Note that we must return to a new equilibrium with zero economic profits. Thus, the AC curve shifts down until it rests upon the new price line, as shown below.



- Thus, the impact of Uber is to reduce the economic rent of medallion owners.
 - Like our other rent examples, the value of the economic rent is determined by market prices, rather than the cost of a medallion determining market prices.

- Economic rent comes from scarcity. In the case of licensing, scarcity comes from regulation. In class, we will discuss these articles in class.
 - As you read the articles, consider why governments require licenses. Who is affected by requiring these licenses?
 - Note that requiring licenses for specific occupation restricts supply.
 - This increases prices, and thus profits, for those with licenses.
 - This is an example of how regulation can be used to create a *barrier to entry*, producing economic rent for existing firms.
 - A recent study of U.S. workers found that 29% of those working in 2006 held a position requiring a license.
 - All else equal, the wages of workers with licenses were 15% higher.
 - Another study finds that migration between US states is 36% lower if licenses are state-specific.
- The *New York Times* article on rising stock market prices and firm profits illustrates how economic rents also occur when there is a lack of competition.
 - Firms may attempt to erect barriers to entry to prevent competition from eroding profits.
 - At the same time, the promise of high profits may encourage innovation.
 - This article illustrates the importance of understanding the assumptions behind economic models.
 - Thus, we now turn our attention to how competitive markets yield efficient outcomes, as well as the implications if our assumptions of competition do not hold.

II. The Efficiency of the Competitive Market

- Recall the key questions regarding the allocation of scarce resources that we introduced on the first day of class:
 - How to utilize resources most efficiently
 - What to produce?
 - How to produce it?
 - E.g. how much capital and how much labor
 - How to allocate the goods and services that are produced?
- Now, consider how a perfectly competitive market answers these questions.
 - From marginal analysis, recall that resources are put to their highest value uses when marginal benefit = marginal cost.
 - Note that, in perfect competition, the market equates marginal benefit and marginal cost.
 - Recall that the demand curve tells us how much consumers are willing to pay for goods. This is the marginal benefit that they receive.
 - At the same time, recall that the supply curve comes from a firm's marginal cost curve.
 - Thus, equilibrium occurs where marginal benefit and marginal cost are equal. Also, note that the market price also equals marginal benefit and marginal cost.
 - Thus, both consumer tastes (represented by demand) and opportunity costs of using resources (represented by the supply curve) determine what is produced.
 - Furthermore, profit-maximizing firms will want to produce these goods as efficiently as possible. This determines how resources are allocated to production.
 - Thus, cost minimization leads to efficient use of inputs.
- Note how this relates to our theories of consumer and producer behavior.
 - Consumers choose bundles so that $MU_X/MU_Y = P_X/P_Y$
 - Producers set $P = MC$
 - Thus, in perfect competition:
 - $MU_X/MU_Y = P_X/P_Y = MC_X/MC_Y$
 - Prices act as signals to balance the desires of consumers with the costs of using scarce resources to produce goods.
 - In perfect competition, prices act as a signal of:
 - The value of the good (relates to MU)
 - The cost of the good (relates to MC)
- The interpretation is that the simple act of individuals, each maximizing their own self interest, leads to an efficient outcome.
 - Adam Smith referred to this as the "Invisible Hand" of the market.
 - Both firms and consumers maximize their own self interest in response to the signals sent by market prices.

- Note that deviations from equilibrium are less efficient, because marginal cost and marginal benefit are not equal.
 - This is the deadweight loss that we discussed earlier in the semester.
 - For example, if quantity is too low, marginal benefit is greater than marginal cost. The benefits of additional quantity outweigh the additional costs.
- Market failure occurs when the equalities discussed above do not hold.
 - In these instances, government intervention may produce better results.
 - This may occur because a market does not fit the assumptions of perfect competition, or it may occur because the government intervenes in a competitive market.
 - The articles on water pricing illustrates what can happen when a government intervenes.
- What do we mean by efficiency?
 - When economists talk about efficiency, they are talking about Pareto efficiency.
 - A Pareto efficient allocation occurs when no one person can be made better off without making someone else worse off.
 - This is the standard goal of economists. If not Pareto efficient, we are being wasteful, because someone could be made happier without making someone else less happy.
 - First Theorem of Welfare Economics – Competition results in a Pareto efficient allocation.

III. Social Welfare Functions

- Social welfare function – A function reflecting society’s views on how the utilities of its members affect the well-being of society as a whole.
 - Social welfare functions provide a framework of thinking about the tradeoffs presented when considering redistribution.
 - In contrast to Pareto efficiency, the goal is to maximize the “greatest good,” where the decision maker’s values (e.g. her SWF) define what is “good”
- We will consider three different examples in class
- The utilitarian social welfare function aggregates each individual’s utility
 - Each person’s utility is given equal weight
 - Because of diminishing marginal utility, provides some support for redistribution
 - The marginal utility from an extra dollar of income will be greater for a poor person than a rich person
- A multiplicative social welfare function considers the product of each individual’s utility.
 - Multiplication puts greater weight on more equal distributions
 - Punishes more unequal distributions; $2*2=4$, average is 2. $1*3=3$, average is 2. $0*4=0$, average is 2.
 - But picks up on increases; $2*2=4$, $2*3=6$.
- For the Rawlsian social welfare function (a/k/a the Maximin Criterion) the welfare of society depends only on the utility of the person with the lowest utility.
 - The philosophy behind Rawls’ criterion follows from the notion of original position
 - Imagine that, before you are born, you have no idea what your position in society will be. What distribution of income would you like society to have?
 - Rawls refers to this as the “veil of ignorance”
 - Rawls assumes people are risk adverse, and thus would thus choose an outcome that raises the welfare of the least advantaged
 - With the Rawlsian SWF, not all Pareto improvements increase SWF (e.g., if increase rich person’s utility). However, they do not hurt it, either.
 - Critiques:
 - Does this provide incentives to create wealth?
 - Are people actually that risk averse?
 - People might be willing to take chances.

	Utility person 1	Utility person 2	Utility person 3	AVERAGE	Utilitarian SWF	Rawlsian SWF	Multiplicative SWF / 1000
A	80	80	40	66.7	200	40	256
B	70	70	50	63.3	190	50	245
C	100	80	30	70.0	210	30	240

- The above table illustrates three policy options (A, B, and C), and the utility that three different people get from each policy.
 - The last three columns show how different social welfare functions would rank each option.
- What is the relevance of social welfare functions?
 - Specifying a social welfare function for society would be difficult
 - Unless there is unanimous agreement, there is no voting scheme that guarantees a stable result.
 - Thus, a social welfare function should not be seen as a starting point for analysis, but rather an outcome of value judgments made as part of the policy process.
 - That is, it allows us to evaluate the philosophy behind policy goals.