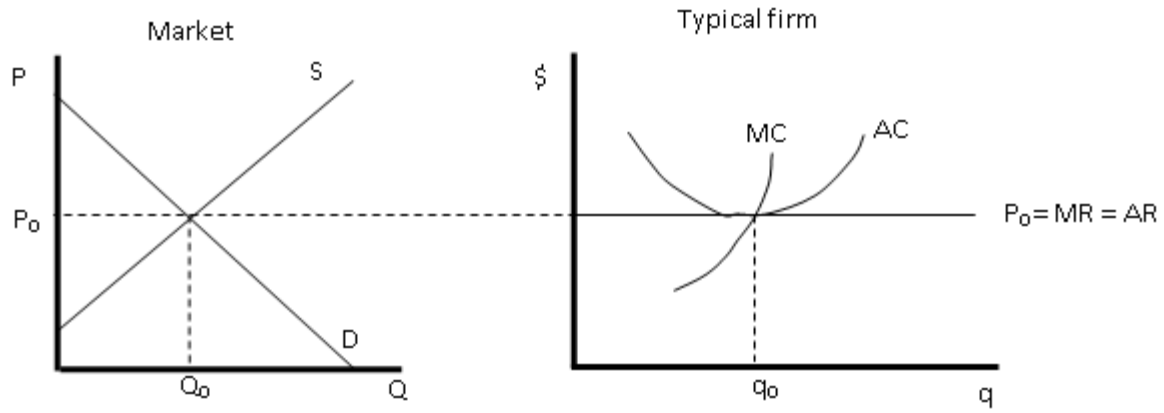
Lecture # 15 -- Long Run Equilibrium

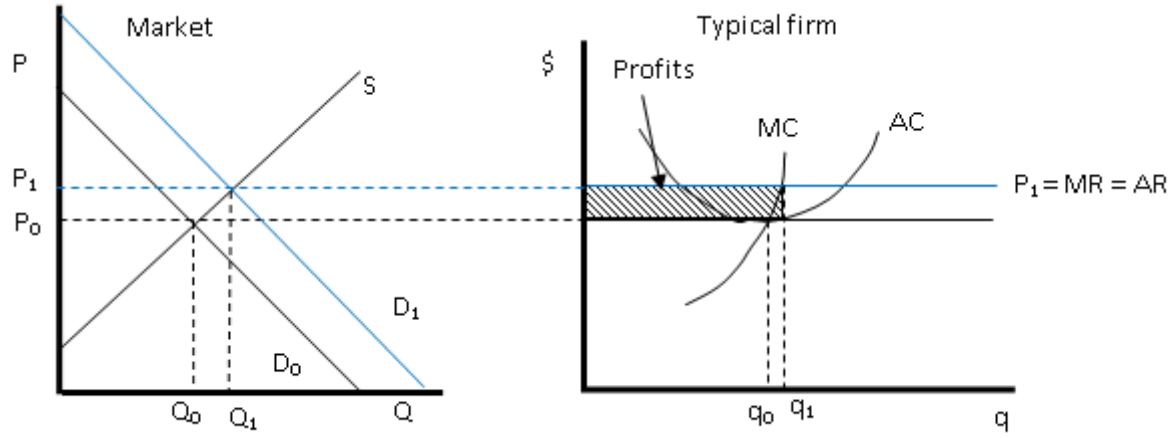
I. Long Run Equilibrium

- We began class reviewing the concept of long run equilibrium.

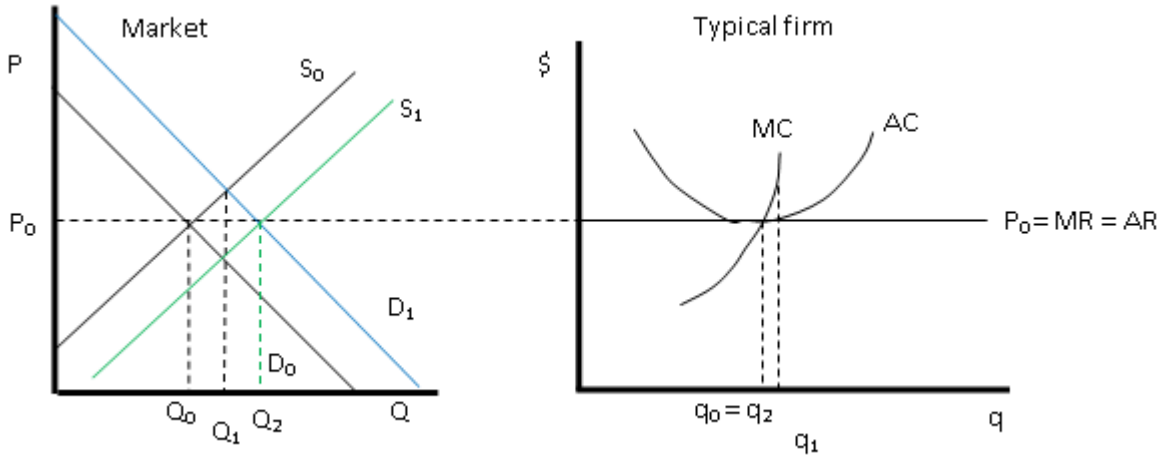
- The article on quinoa shows how market changes lead to short run profits and a new long-run equilibrium.
    - We start by illustrating a market in long-run equilibrium.
        - Thus, the AC curve for a firm (in this case, a quinoa farmer) rests on the price that is determined by the market, so that there are zero economic profits.



    - As quinoa becomes more popular, demand increases.
        - This shifts the demand curve out (blue line), leading to higher prices and profits for farmers.
        - Note from the article that prices tripled from 2000-2014.

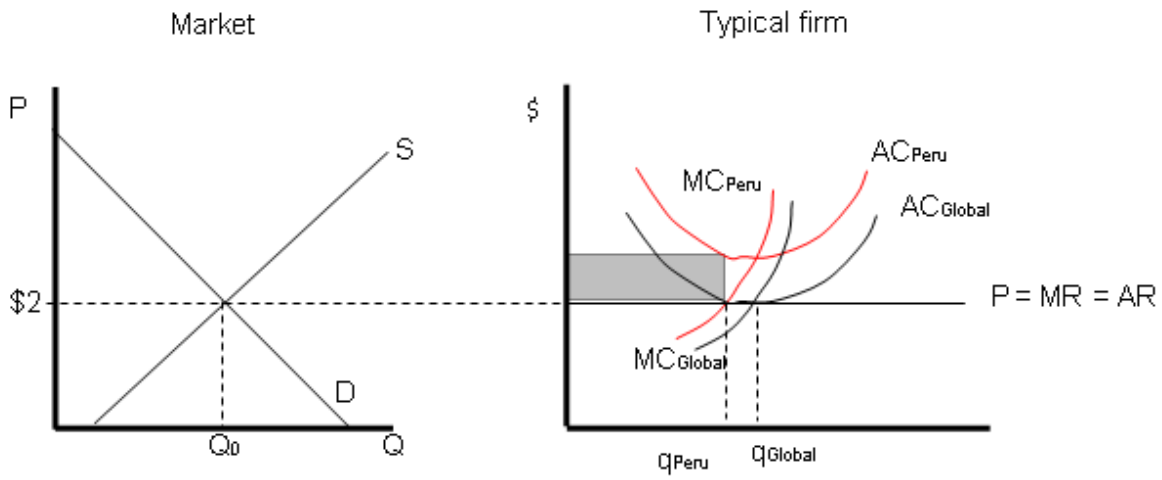


- These higher prices are a signal that more quinoa is needed. Because this is a profitable business, more farmers enter the market.
  - Note that while quinoa was traditionally grown in Peru, as prices increased, farmers from over 50 countries entered the market.
  - This shifts the supply curve out, lowering prices (green line below).
    - Prices fell 40% in just a single year, from 2014 to 2015.
  - As long as profits are being made, farmers continue to enter, so that supply shifts out until prices return to their original level. Firms once again earn zero economic profits.



- The article also notes some additional complications:
  - Because prices were so low, some farmers stored quinoa rather than sell it. Thus, there will be even more quinoa on the market next year, making prices fall further.
  - The farmers that entered the market had lower costs.
    - If their costs are below those drawn above for the Peruvian farmers, those farmers could continue to enter the market.
    - That would drive the Peruvian farmers out of business, since they would lose money at a price below P_0.
      - Note, for example, that the article says the price fell below the $2.60/kg price necessary to support Peruvian farmers.

- The graph below illustrates. Here we have two sets of cost curves
  - The black curves represent the cost curve for producers elsewhere in the world. Those farms earn 0 economic profits when the quinoa price falls to $2/kg
  - The red curves represent Peruvian farmers. They need a higher price ($2.60/kg) to earn 0 profits.
  - Thus, when the price reaches the new equilibrium price of $2/kg, they lose money. The shaded box represents their loss.

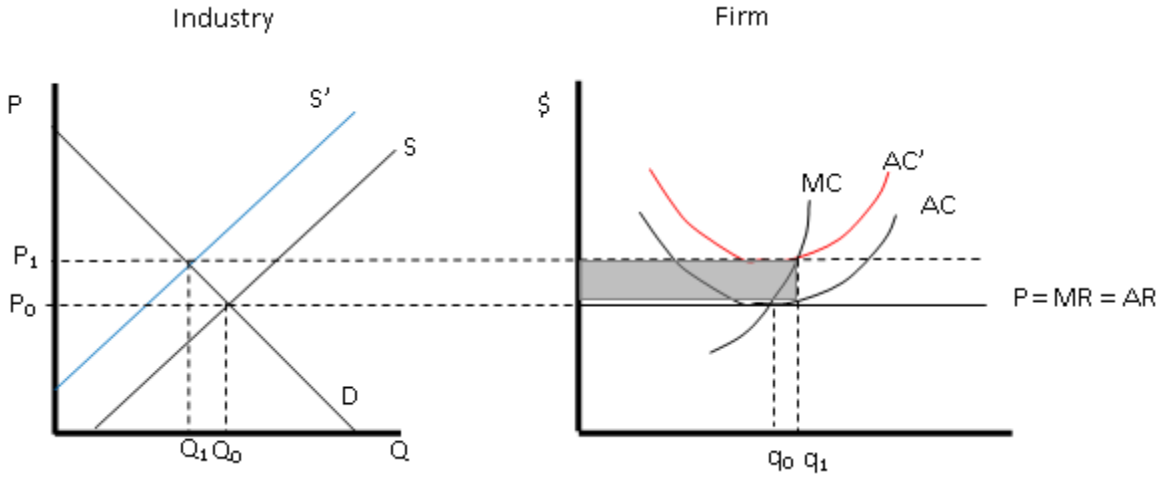


- What can Peruvian farmers, and their government, do in response?
  - They either need to lower costs or convince consumers to pay more for Peruvian quinoa.
    - For example, the *Economist* article notes attempts to carve out niche markets, such as "heirloom" quinoa.
      - Recall that perfect competition assumes identical products. If Peru can convince consumers that not all quinoa is the same, they can try to convince them to pay more for Peruvian quinoa.
    - Helping farmers get access to new technology could help lower the cost curve.

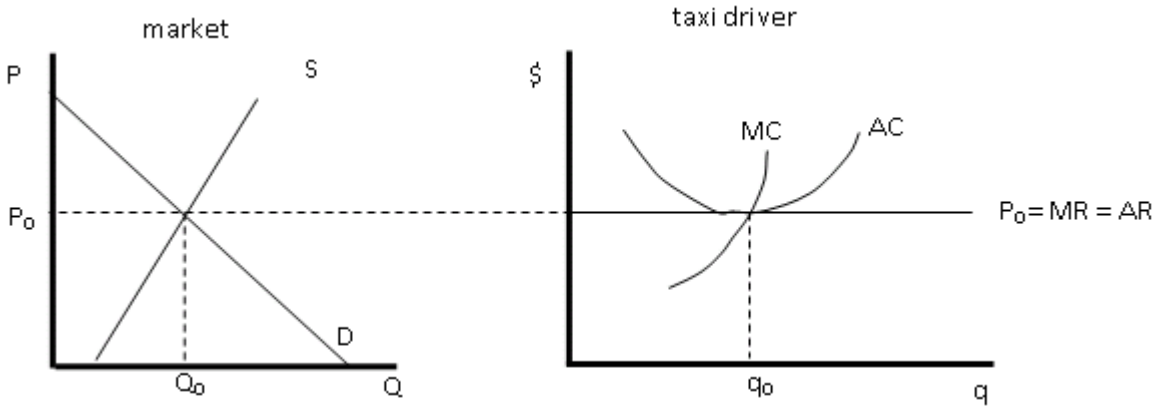
II. Economic Rent

- 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.

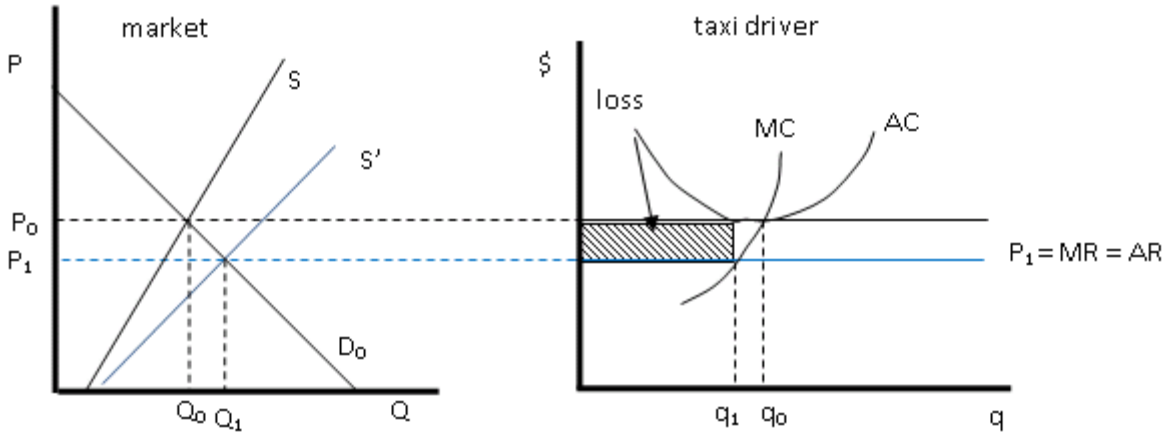
- The Corn Laws in 19th century England show how a change in policy creates economic rent.
  - These laws restricted imports of grain into England, leading to higher prices.
  - Higher grain prices increased demand for farmland.
  - The aristocratic class was able to charge farmers higher rents.
  - 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.



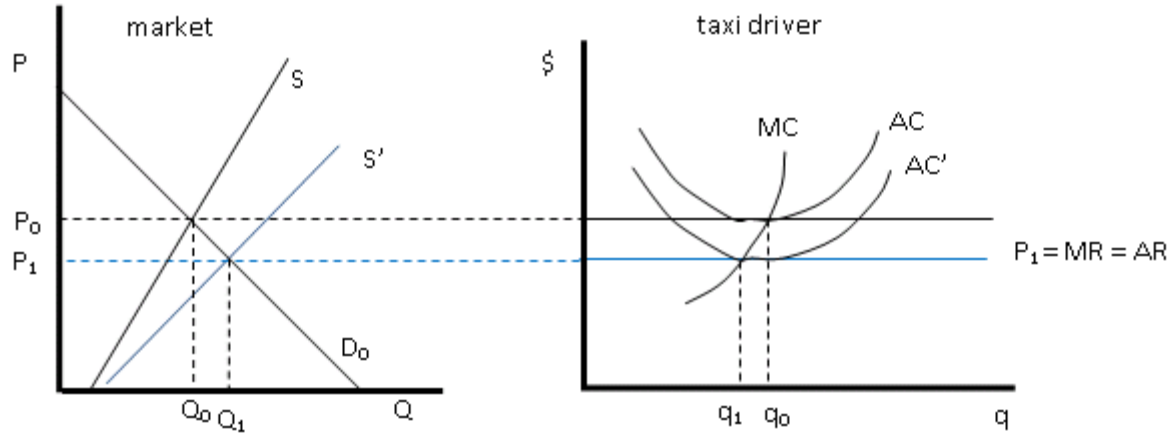
- The example of how Uber has affected both taxi drivers and the value of their licenses (e.g. taxi medallions) shows both the effects of a license and how new technologies can disrupt a market and change the value of a license.
    - Again, we start in long run equilibrium. Here, we illustrate the market 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 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.