Perfect Competition

This should be revision, but it is good stuff to be reminded of...

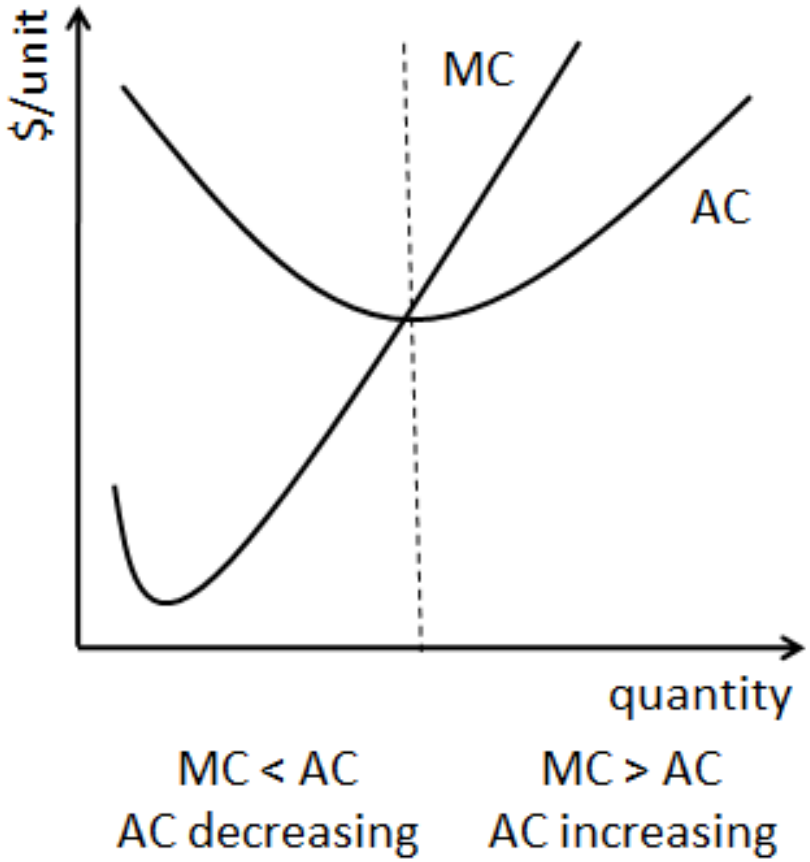
Prefect competition

Competition in agriculture

- In poorest nations of the world, 50 to 80 percent of population live on farms
- Less than 2 percent in the US, less than 10 percent in Europe
- Highly skewed distribution: largest 2.6 percent of wheat farms raise roughly half of all wheat
- However, still very large numbers of firms: the 2 percent of farms producing half the grain comprise 27000 farms
- Can any one farm have any effect on price of corn?
- How difficult is it to enter farming?

Perfect Competition

Cost structure: textbook depiction



Perfect Competition

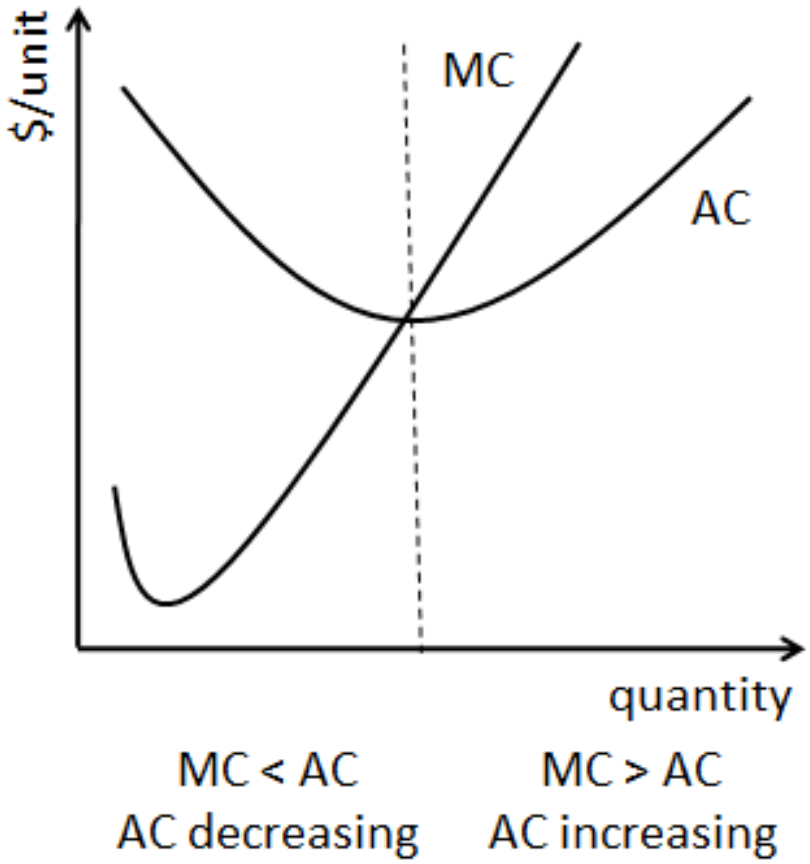
Cost structure of a farm

- Fixed costs
  1. Mortgage payments
  2. Taxes
  3. Depreciation of equipment (why?)
- Variable costs
  1. Preharvest costs ($31 per acre of corn, 1971 prices)
     - Labor: about 4 hours
     - Seed
     - Fertilizer
     - Fuel
     - Insecticides/herbicides
  2. Harvesting costs ($10 per acre of corn, 1971 prices)
     - Labor: about 2 hours
     - Fuel
     - Trucking

Perfect Competition

Cost structure of a farm

Is this an accurate depiction of what we think the farmer looks like?



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Cost structure of a farm

What do you think the average and marginal costs of the farm look like?

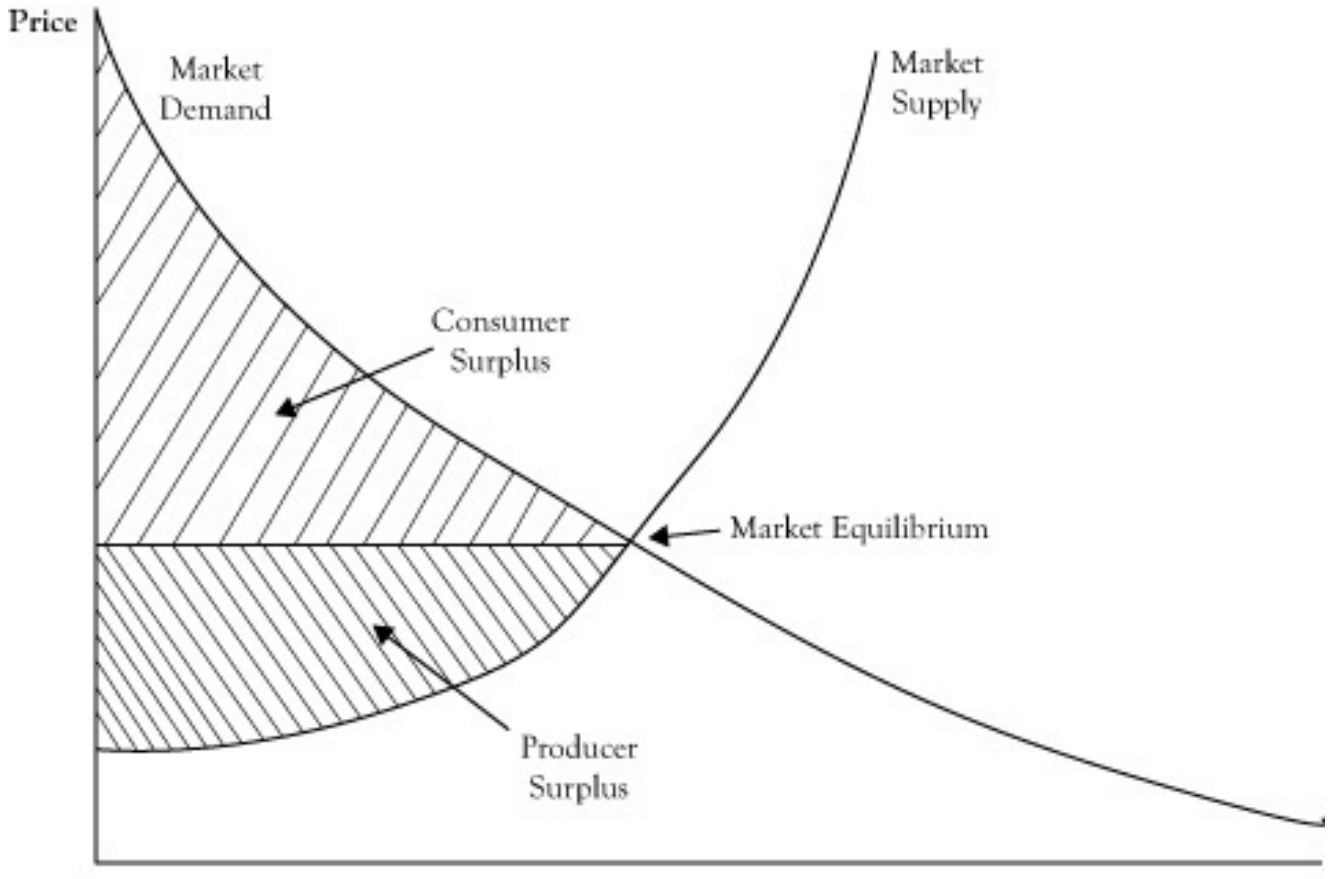
Perfect Competition

Profit maximization decision of the corn farmer: Revision

- $\pi(q) = qP(q) - TC(q)$
- What's $\frac{dP(q)}{dq}$? Why?
- $P = MC$
- But is this enough?
  - MC at current production = 41 cents
  - What happens if price is 40 cents per bushel?
  - If price is 50 cents per bushel?

Perfect Competition

Market Equilibrium: Revision



Perfect Competition

Welfare and Efficiency: Revision

- Social welfare = Consumer Surplus + Producer Surplus
- Consumer surplus: area under the market demand curve minus price paid by consumers
- Why is this a measure of consumer welfare?

Perfect Competition

Consumer surplus: revision

- Quasi-linear utility: $U(x_1; x_2) = g(x_1) + x_2$
  - Usually we interpret x_2 as "everything else"
  - Budget constraint: $p_1 x_1 + p_2 x_2 = m$
  - $g'(x_1) = \frac{p_1}{p_2}$
  - If $p2 = 1$, marginal utility of another unit of x_1 is equal to p_1 dollars
  - What is the total dollar value of utility you get from Q units of good 1?

    $W(Q) = \int_0^Q p_1(q)dq$
  - Consumer surplus is this dollar value minus the dollar amount you pay (PQ).

Perfect Competition

Producer surplus

- Producer surplus: easier. This is profit (not inclusive of fixed cost).
- Why does the competitive outcome maximize social welfare?
- What would happen to sum of producer and consumer surplus if $P > P_0$?
  - What is the effect of limiting the number of taxicabs in a city?
  - Is it better to limit taxicabs, or to charge an entry fee or a tax?
- When do markets fail to be efficient?