Supply & Demand

True Pillars of Economics

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Outline

Basic Terms

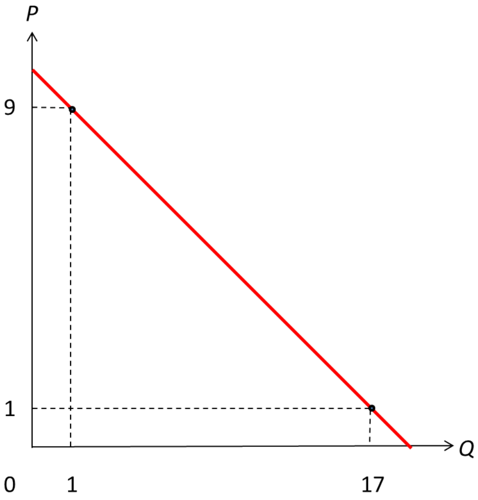
- **Good(s)** - a thing satisfying a need. A thing scarce in its availability (remember previous lecture).
- **Market** - Group of buyers and sellers of *particular* good.
- **Competition** -
  - *Process*, clash of buyers to buy or sellers to sell (offering lowest price to catch a customer)
  - More importantly: Particular *structure* of a market (ei competitive market, monopoly etc.)
- **Quantity** (Q) - the amount of good we are talking about.
- **Price** (P) - relative scarcity of a good (usually compared with money or other good).

Quantity demanded

- Demanded Q of a good is *an amount of good one buys at certain price*.
- Q demanded thus cannot be found without relation to price!
- Set of all possible amounts demanded at all possible prices is the **demand**.
- Or equally by function: $Q^D = f(P)$

Price	1	2	3	4	5	6	7	8	9
Q	17	15	13	11	9	7	5	3	1

Demand

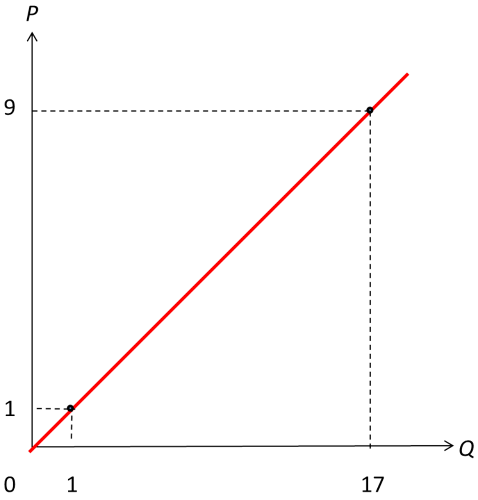


Quantity supplied

- Supplied Q of a good is *an amount of good one offers (sells) at certain price*.
- Q supplied thus cannot be found without relation to price!
- Set of all possible amounts sold at all possible prices is the **supply**.
- Or equally by function: $Q^S = f(P)$

Price	1	2	3	4	5	6	7	8	9
Q	1	3	5	7	9	11	13	15	17

Supply

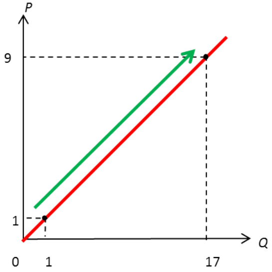


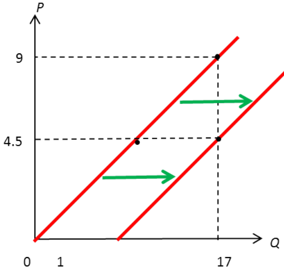
Some Remarks

- Market supply is simply the sum of all personal supplies. Market demand is analogy.
- There are several factors determining $Q^S$and Q^D besides price such as income, preferences, technology, expectations etc. However the basic relation depicted in previous figures reflects changes of Q caused by changes of P *ceteris paribus*, eg all other conditions unchanged.
- Figures are turned upside down, P being independent variable but occupying vertical axis and *vice versa*. Don't ask me why's that :-)

Changes in S and D

- Changing the price *ceteris paribus* (see previous slide) causes so called "moves **on** the line" (left hand figure).
- Changing other factors such as income, preferences, technology, expectations etc. causes so called "move **of** the line" (right hand figure)





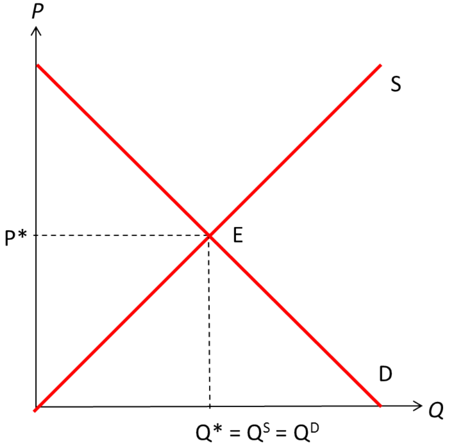
Outline

Supply and Demand

- Supply and Demand meet at the market
- Set of interesting questions
  - What price will prevail?
  - What quantity of good will be offered and demanded?
  - What quantity will be actually traded?
  - What if the price is somehow disturbed?

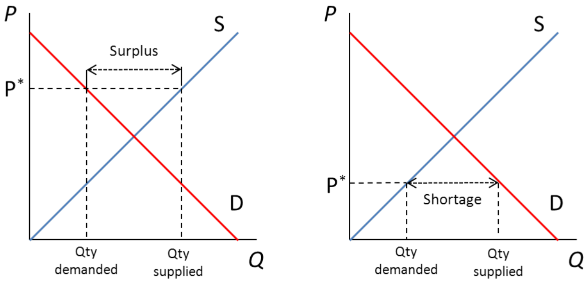
Reaching Equilibrium

- Market equilibrium is defined by price when both supply and demand are balanced
- In other words: $P^* when\ Q^S = Q^D$



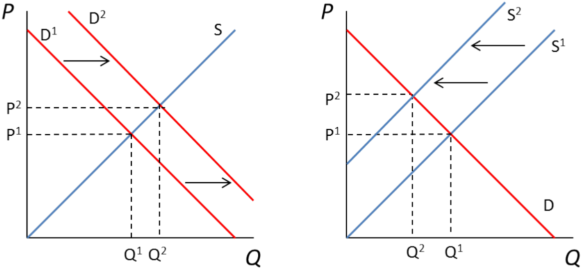
Markets Not in Equilibrium

- What happens, when the price on the market is not that of equilibrium
- The price does not clear the market, $P^* when\ Q^S \neq Q^D$.



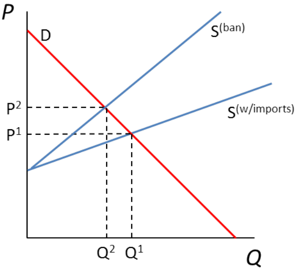
Examples

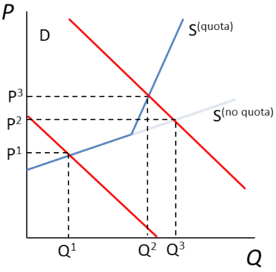
- Increase in demand $\Rightarrow$Price$\uparrow$and Quantity $\uparrow$
- Decrease in supply $\Rightarrow$Price$\uparrow$and Quantity $\downarrow$



Examples (cont.)

- Simple international trade example Perloff [2012].
- Ban (left hand figure) or quota (right hand figure) on wheat imports.
- Both decreases wheat supply - S↓, P↑, Q ↓
- When the quota is effective?





Outline

Motivation

- Supply and Demand usually not linear
- How to assess the quantity fall associated with price rise?
  - On of the crucial managerial questions
- Substitute good gets cheaper

Elasticity

- Mathematical phenomenon, attribute of a function
- $e = \frac{\textit{percentual change of } f(x)}{\textit{percentual change of } x}$
- Not the same as difference (slope of a function)!
- Elasticity is independent of used units so you can easily compare apples with oranges
- Intuition:
  - High elasticity = huge shift of $f(x)$ (Q) in response to little shift of x (P).
  - Low elasticity = little shift of $f(x)$ (Q) in response to huge shift of x (P).

Elasticities

- Which independent variables changes
- Demand elasticities:
  - Price e
  - Income e
  - Cross e (other good)
- Supply elasticity:
  - Price e
- Including special cases (0, <1, 1, >1, ∞)

Elasticity determinants

- Necessary x luxury goods
- Availability of substitutes
- Market definition (apples x fruits x food)
- Time scale
- Share of income

References

Jeffrey M. Perloff. *Microeconomics*. Addison-Wesley, 2012.