

MICROECONOMICS I.

"B"

Sponsored by a Grant TÁMOP-4.1.2-08/2/A/KMR-2009-0041
Course Material Developed by Department of Economics,
Faculty of Social Sciences, Eötvös Loránd University Budapest (ELTE)
Department of Economics, Eötvös Loránd University Budapest
Institute of Economics, Hungarian Academy of Sciences
Balassi Kiadó, Budapest

Authors: Gergely Kőhegyi, Dániel Horn, Klára Major

Supervised by Gergely Kőhegyi

June 2010



MICROECONOMICS I.

"B"

week 11

Perfect competition

Gergely, Kőhegyi–Dániel, Horn–Klára, Major

The course was prepared by Gergely Kőhegyi, using *Jack Hirshleifer, Amihai Glazer and David Hirshleifer (2009) Mikroökonomia. Budapest: Osiris Kiadó, ELTECON-books (henceforth HGH), and Gábor Kertesi (ed.) (2004) Mikroökonomia előadásvezérlatok. <http://econ.core.hu/kertesi/kertesimikro/> (henceforth KG).*

Supply function

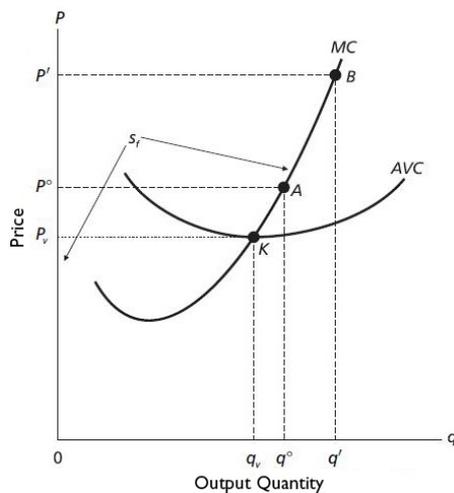
Firm supply, short run

In optimum:

- $P = MC$
- $\frac{\Delta MC}{\Delta q} > 0$
- Ha $P < AVC_{\min}$, then $q = 0$

Inverse supply function

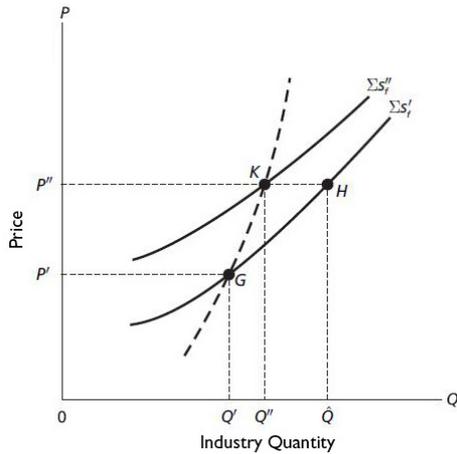
At production prices less than P_v , the minimum of Average Variable Cost AVC curve, the firm's best output is $q=0$. Above this price, the inverse short term supply function coincides with the Marginal cost (MC) curve, which shows the optimal output for the firm for each price.



Industry supply function, short run

Industry supply function

Input-price effect



Statement 1. The short-run supply curve of a competitive firm, above the minimum of its average variable cost curve, is identical to its marginal cost curve. The short run supply curve of a competitive industry is the horizontal sum of the firms' supply curves, but only after allowing for the input price effect that raises marginal cost curves as industry output rises (or lowers marginal cost curves as industry output falls). The input price effect reduces the magnitude of the supply response to changes in output price, making the industry supply curve steeper than it would otherwise be.

Definition 1. Elasticity supply κ is the proportional change in the quantity supplied divided by the proportional change in price:

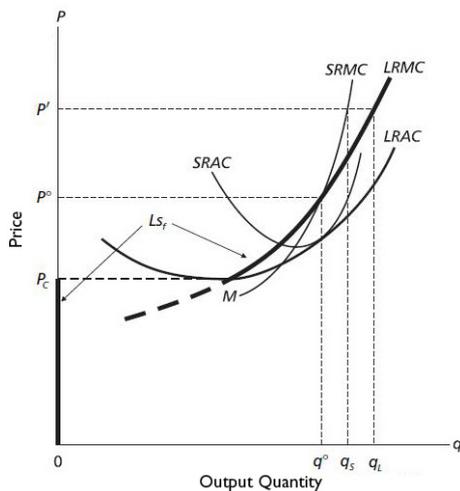
- discrete case: $\frac{\Delta Q}{Q} \frac{P}{\Delta P}$

Statement 2. The input price effect normally makes the industry's short run supply curve less elastic than the separate firms' short run supply curves.

Supply in the long run

Inverse supply curve on the long run

The firm's long run supply function runs along the vertical axis (zero quantity supplied) up to P_c . The minimum level of the long run average cost curve $LRAC$. Above this price the supply function coincides with the long run marginal cost $LRMC$.

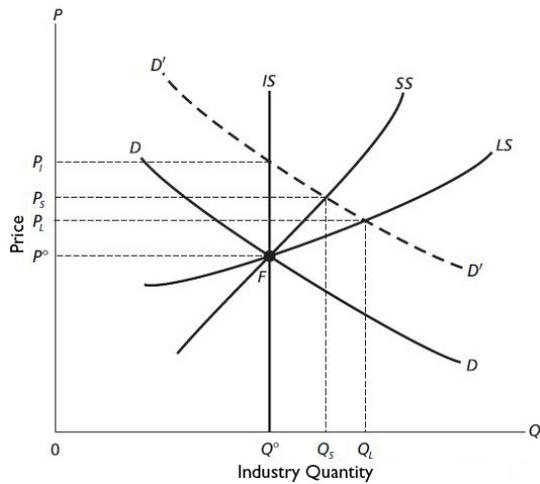


Industry supply functions; immediate, short and long run

The elasticity of supply changes with different lengths of time

- immediate run: IS
- short run: SS

- long run: LS

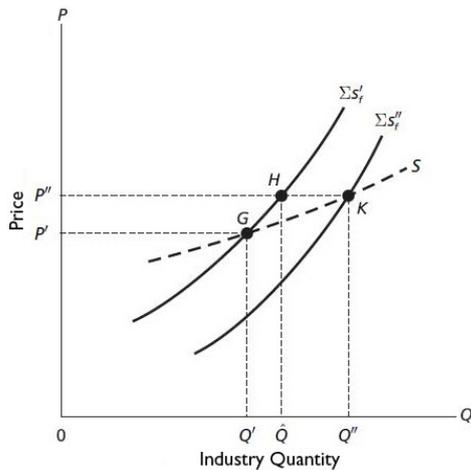


Statement 3. *If an industry has an upward sloping supply curve, after an increase in demand both price and quantity will rise. But in moving from the immediate run to the short run to the long run, the price increase is progressively moderated whereas the quantity increase is accentuated. And similarly for a decrease in demand, the longer the run, the smaller the change in price and the greater the change in quantity.*

External economies and diseconomies

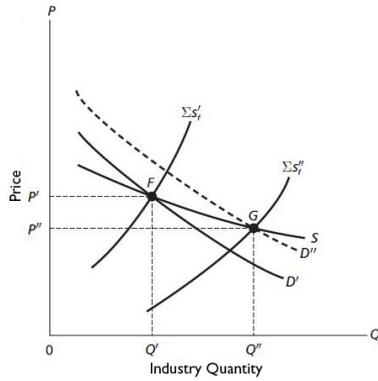
External economy

External economy makes each firm's cost of production fall as industry output expands, and therefore flattens the industry supply curve.



Negatively sloped supply function

An upward shift in the demand curve to D'' temporarily raises price; firms begin to respond along their individual supply curves. However, the external economy means that increased industry output reduces firms' cost of production, shifting the sum of firms supply curves downward from $\sum S'_f$ to $\sum S''_f$. If the external economy is sufficiently strong, as shown here, the new equilibrium at G represents larger quantity at lower price. Thus, the industry's supply curve S is negatively sloped.



Statement 4. In a competitive industry, the "internal" effects (how changes in a firm's output affects its own costs) must be diseconomies in the neighborhood of equilibrium, since the firm's optimum requires that marginal cost slope upward. The "external" effects (how changes in industry output influence firm's cost function) are of two types - pecuniary and technological. Pecuniary effects are normally diseconomies, since rising industry output tends to raise the input prices faced by individual firm. But technological externalities can be economies or diseconomies; increases in industry output can have either favorable or unfavorable effects upon the production functions of the individual firms.

Understanding the zero-profit condition

Statement 5. In the long run, economic profit for any firm in a competitive industry is zero.

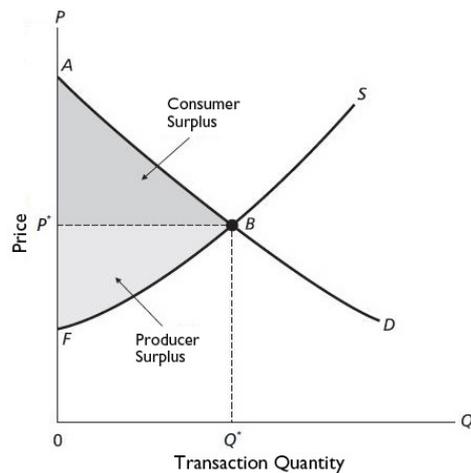
The benefits of exchange

Social benefits of trade

Statement 6. Trade is mutually beneficial.

Consumer surplus and producer surplus

Consumer surplus is the area that lies below the demand curve and above the equilibrium price. The producer surplus is the area above the supply curve and below the price. The sum of the consumer and producer surplus shows the welfare of a society of consumers and producers.



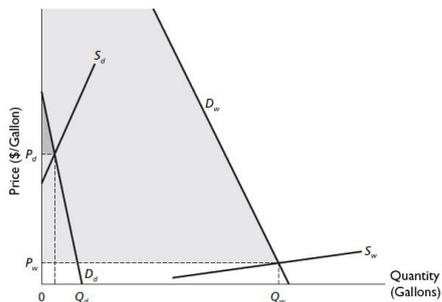
Note 1. Benefits stem from trade and not from consumption or production.

UK Lotto – consumer surplus			
	Revenue (million founts)	Consumer surplus (founts/draw)	Consumer surplus (million founts)
Regular draw	65	0, 49	32
Rollover	78	0, 53	41
Double rollover	98	0, 68	67

The water-diamond paradox

Water vs. diamond

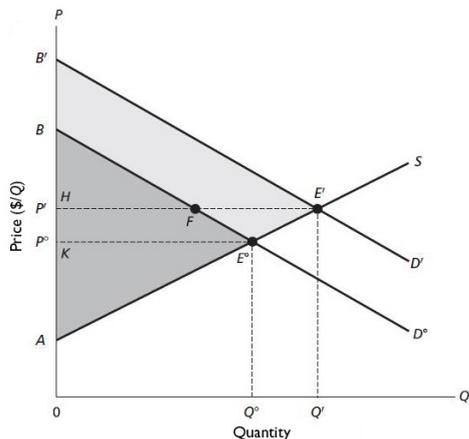
Water is "more valuable" than diamonds in the sense that consumers' aggregate willingness to pay (total area under the demand curve) is greater. However, the supply of water is so enormous, in comparison to demand that the market value of water is small.



The benefits of an innovation

Quality improving innovation

Quality improving innovation shifts the demand curve upwards, because consumers are willing to pay more for a higher quality product. Thus consumer and producer both increase.

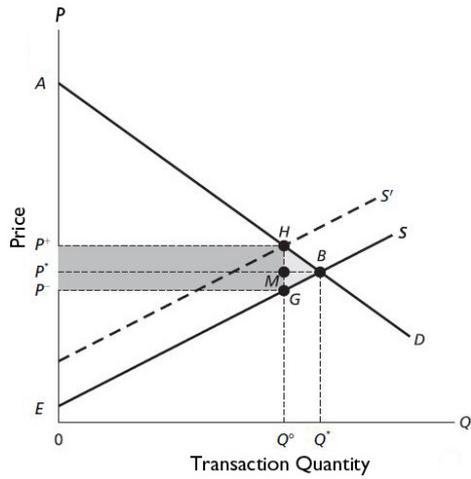


Effects of government interventions

Transaction taxes

Effects of tax on welfare

Taxing trade creates welfare, or efficiency loss (BHG even if tax revenues are returned to (some) members of the society).

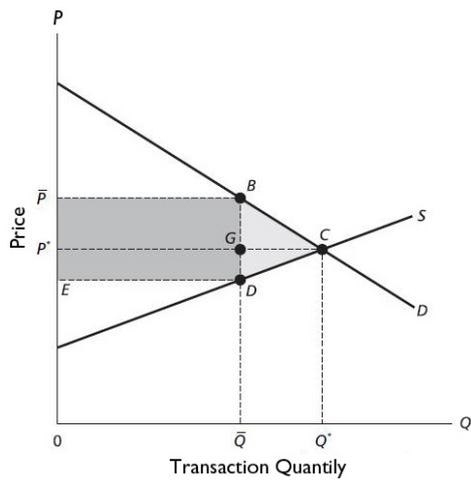


Statement 7. *Taxes on transactions reduce both consumer surplus and producer surplus. Some of the loss is a transfer from consumers and producers to the beneficiaries of government spending. But the reduced volume of trade also creates a deadweight or efficiency loss.*

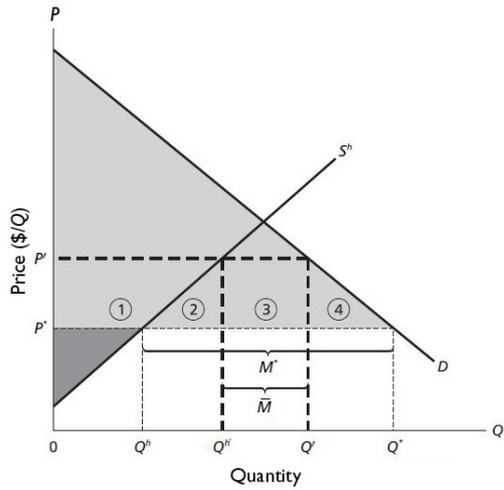
Supply quotas

Effects of quotas on welfare

Quantity regulation, similarly to taxing, causes welfare losses for the society and deadweight loss.



An application: Import quotas



Price ceiling

Introducing a maximum price

An upward shift of demand on an uncontrolled market causes a price in the long run to increase to P_L . A price ceiling of P^o would cause a H over demand.

