

Profit

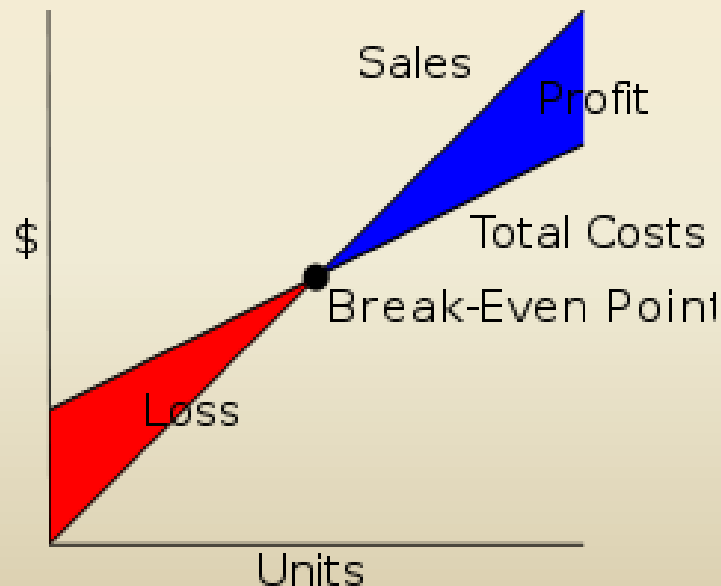
Profit (π) refers to the additional revenue as compared with the difference between the total revenue and total cost (i.e. break even point). Profit is maximized where $MFC = MRP$ and where $MC = MR$.

It is at this point where the business organization optimizes the utilization of resources while earning sufficient revenue to cover for all the costs. It is therefore required to establish all decision-making information whether on the revenue or the cost side of the business.

Profit = revenue - costs = $TR - TC = (P*Q) - (C \text{ for } K, L) = (P*Q) - (AC*Q)$; profit is maximised where at least $TR = TC$

Break even analysis

It is used to determine when your business will be able to cover all its expenses and begin to make a profit. It is important to identify your start-up costs and operating costs, as well as your sales revenue needed to pay ongoing business expenses and yield a ROI.



b/Simulation

Step 1: use a spread sheet and fill out the following table to establish how many workers the business organization will need to employ in the short run considering that labor costs CHF 400.- a week per worker and capital costs CHF 500.- for a machine whose output is here given by the quadratic equation:

$$Q = 4LK + 0.1L^2K + 0.2LK^2 - 0.04L^3K - 0.02LK^3$$

Step 2: draw curves TP, MP, AP and AC, MC, AR with the help of spreadsheet drawing tools.

Step 3: make observations

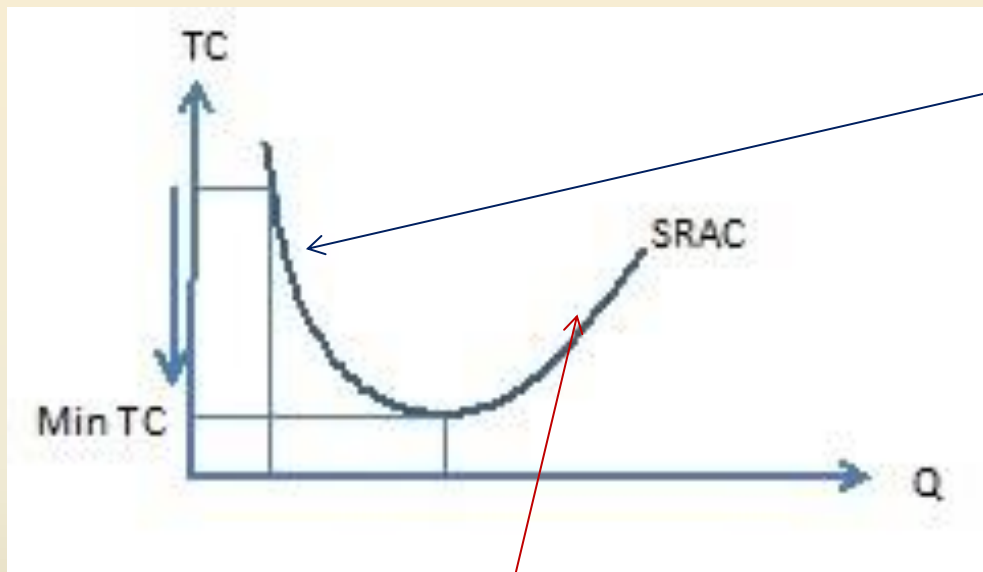
Cost behaviors - SRAC

Since in the short run the business organization is able to affect one factor of production, costs tend to change according to changes in one factor of production only, namely L.

AC cost curves are also referred to as learning curves since the business learns to improve its production system, that is, to lower AC while increasing output and that to a lower limit, the minimum efficient scale.

Thereon decreasing returns from the factor of production L would tend to increase AC – actually no business takes such decisions!

Thus the Short Run Average Costs (SRAS) curve is supposedly U-shaped – is it actually?

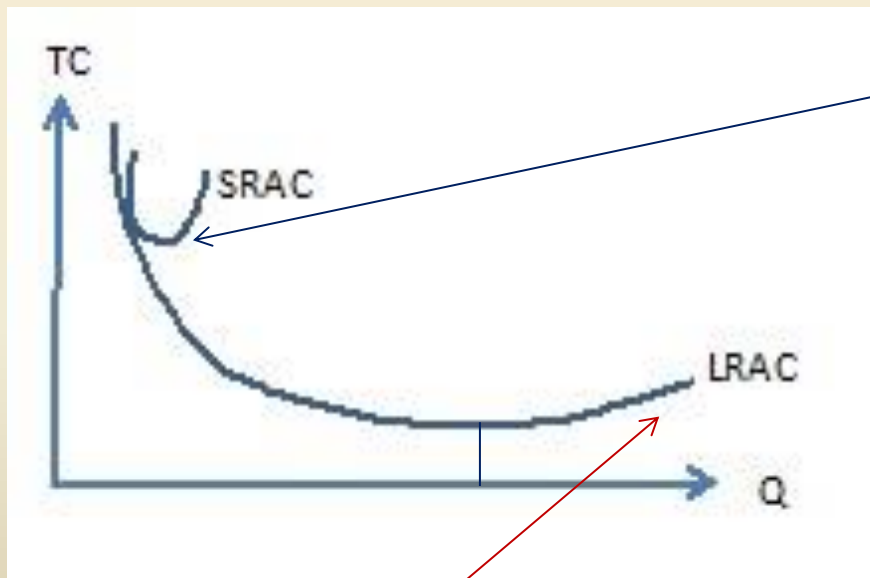


Economies of scale/scope:
seeking to produce more so
as to max revenue while
reducing TC => AC ↓;
therefore profits are
maximised

Diseconomies of scale/scope

Cost behaviors - LRAC

In the long run the business organization is concerned with the sequential management of short-run cost elasticity (i.e. periodic management of short-run costs). Thus the Long Run Average Cost (LRAC) curve is L-shaped



Economies of scale/scope:

But since all the inputs can be changed, does LRAS make sense?

Diseconomies of scale/scope

Economies of scale & scope

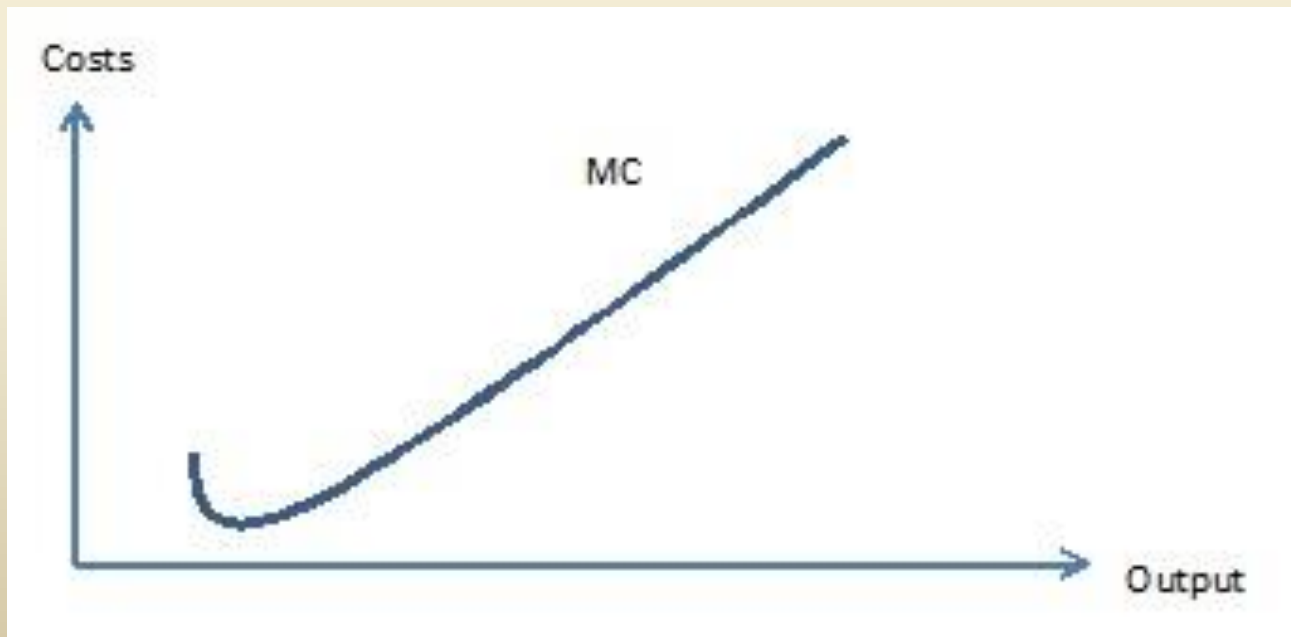
Of importance, economies of scale include:

- Internal: arise from the growth of the business organization (technical, managerial, marketing, financial, transportation).
- External – economies of concentration: arise from the growth of the industry.
- Monetary: arise from changes in the price.
- Level: arise from changes in the nature of the product or production process.

If the business is able to change the mix of its operations for cost benefits the organization is making economies of scope.

Cost behaviors - MC

MC curves whether short run or longrun tend to show decreasing returns first and and increasing returns thereafter – actually MC curves are a lot flatter indicating that business cannot change all their inputs as fast as planned because resource prices are slow to adapt



Supply

Since marginal cost curves help firms decide over to increase production or not in that increases in output require even more additional expenditure, the business might not want to take this decision and settle for the level of output where it can manage its costs relative to revenue, that is, where it breaks even when $TC = TR$.

It is at this level that the business will produce and supply the markets. Supply therefore refers to the quantities producers are able and willing to offer, ceteris paribus

What is more it is at this level that the business will set a price/unit of output where $AC = P$.

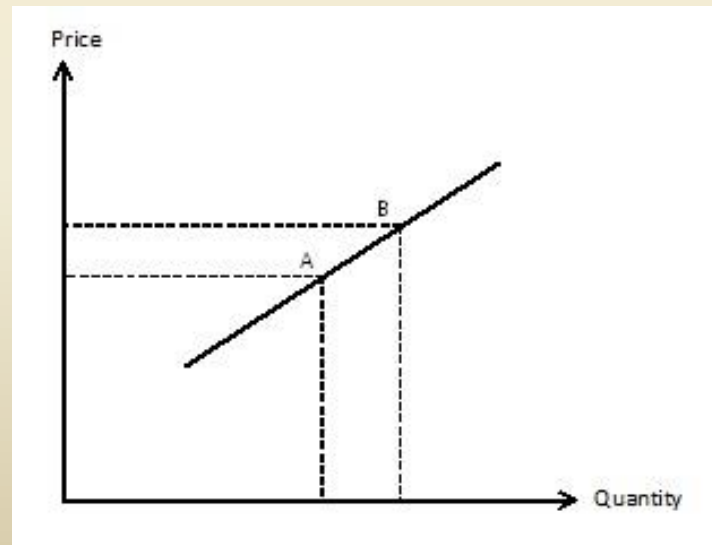
This also means that to supply more, the business must earn enough to cover additional costs, that is where $MR > MC$.

Since the business is in general able to establish the additional costs per additional output – but not additional revenue, it can determine its supply possibilities on the basis of the MC curve.

The relationship between quantity supplied and price or formally put $Q_s = f(P)$, establishes the supply curve of the business.

The positive slope of the supply curve translates the law of upward sloping supply = if $P \uparrow$ then $Q \uparrow$ since extra revenue covers extra costs.

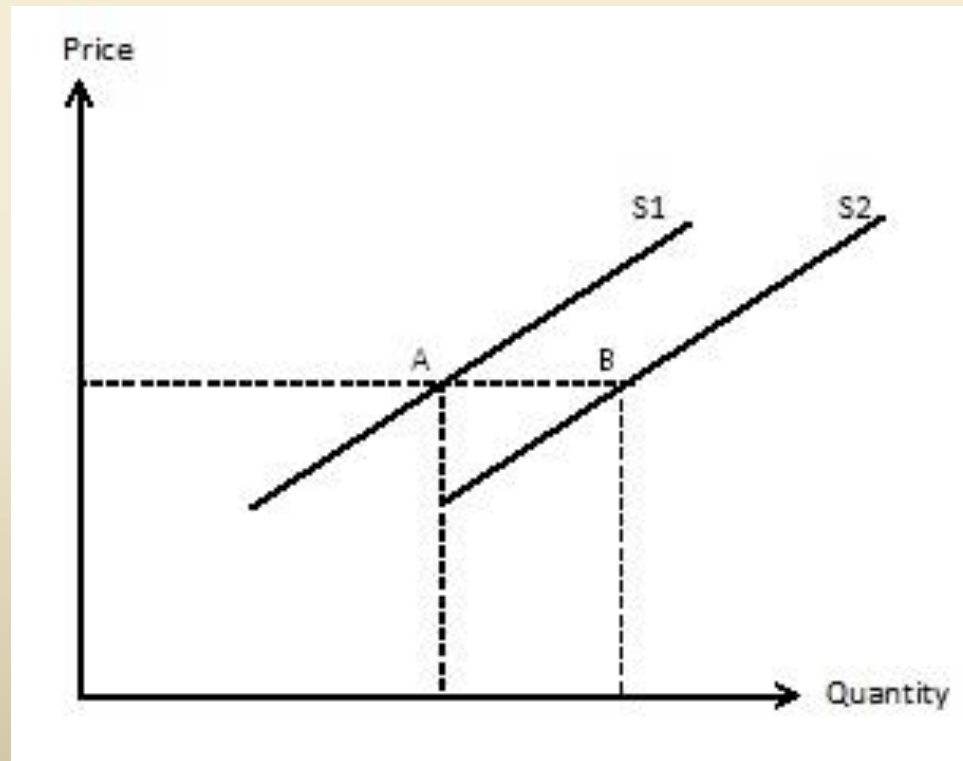
Is it something that business will want to decide on?



P is one factor affecting QS; what is their effect?

- Better weather (e.g. vineyards produce more wine) $\Rightarrow Q \uparrow$
- Technological innovation $\Rightarrow Q \uparrow$
- Lower taxes \Rightarrow higher profits $\Rightarrow Q \uparrow$
- Production span i.e. capacity to produce accessory products (e.g. Disney films & action figures) \Rightarrow greater indirect sales of main product $Q \uparrow$
- Lower costs of production \Rightarrow higher profits \Rightarrow induced $Q \uparrow$ if production system allows
- Increased subsidies (e.g. in the EU for dairy products) \Rightarrow covers costs \Rightarrow higher profits \Rightarrow induced $Q \uparrow$ if production system allows

When accounting for other factors than P i.e. when P stays fixed, the positive effect of such factors is shown as a rightward shift in supply S1 to S2 where quantity supplied – a fall in the same factors brings about a leftward shift



Observation

There is a producer dilemma that is generated by two opposing forces:

- The increase in production to earn more revenue is halted by $MC \uparrow$
- The decrease in production so as to have low MC makes that the firm is not making economies of scale because $AC \uparrow$

Therefore: there is one level of production that is optimal that corresponds to the producer equilibrium i.e. the level of supplied output.