Costs of Production: Implications for Supply

Principles of Micro, Lecture 6

Petar Stankov

petar.stankov@gmail.com

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Why does the firm care about costs?

Profit and supply

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The Economic Profit

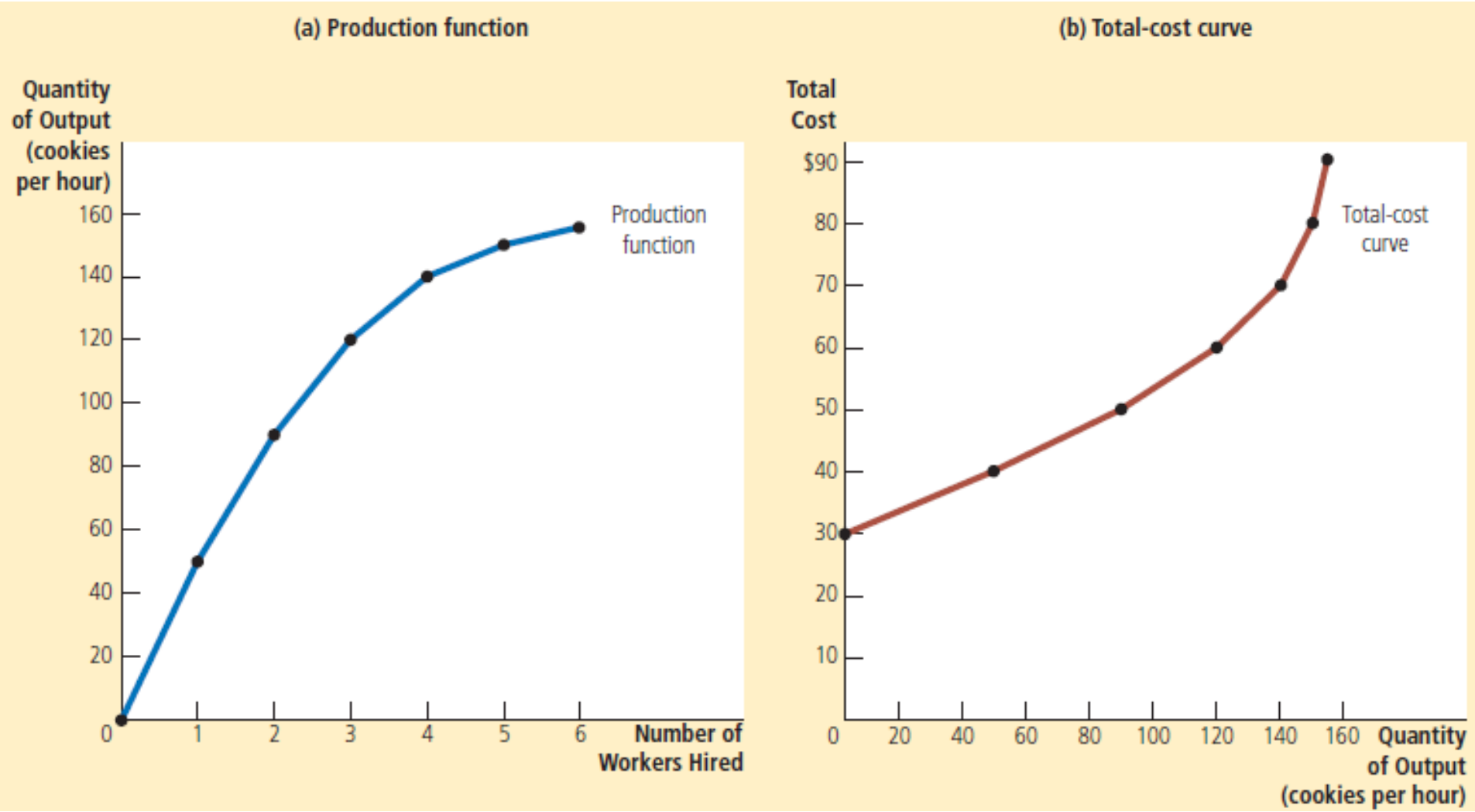
π = Total Revenues (TR) - Total Costs (TC) =
= $p.Q$ - [Explicit Costs + Implicit costs]

The Accounting Profit

π = Total Revenues (TR) - Total Costs (TC) =
= $p.Q$ - [Explicit Costs + 0]

Example: a graphic designer or an entrepreneur?

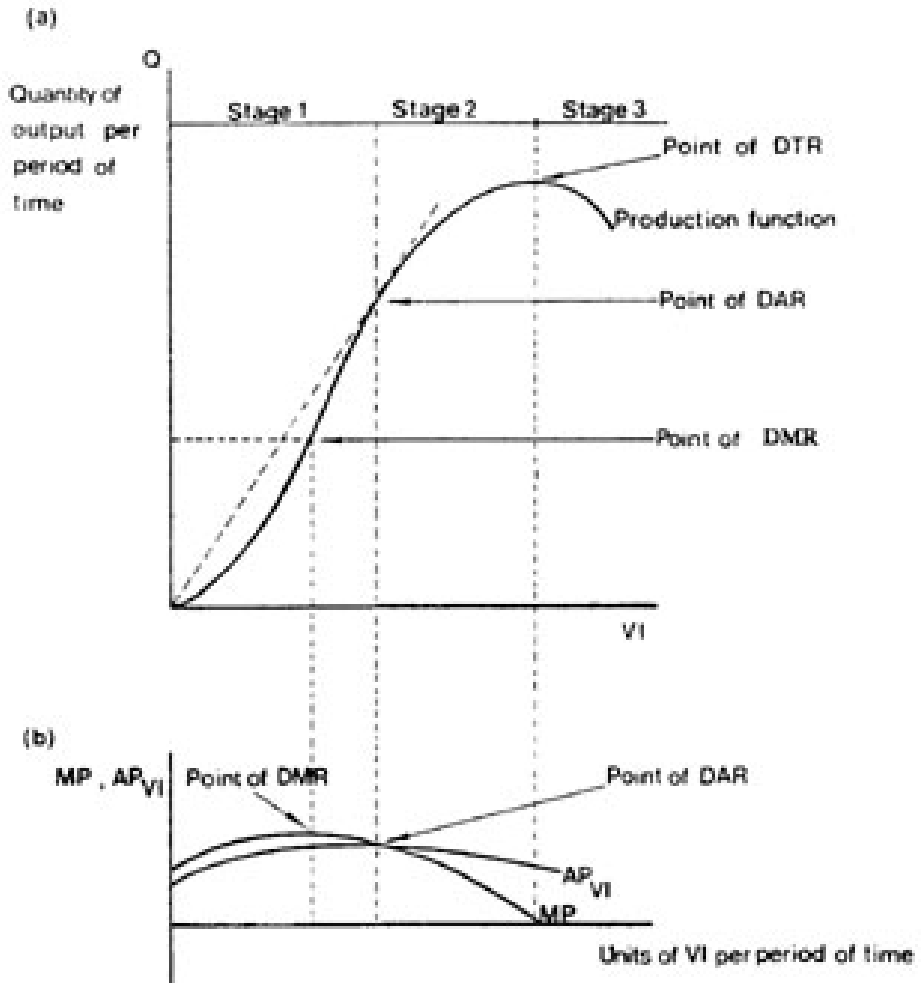
The link between total output Q and total costs (TC)?



Why the link?: MP and AP

The link between total output Q and total costs (TC)?

Marginal product, Average product, and Costs



Why the link between MP and AP? - a graph, intuition, and examples: solving problems, studying for exams, destroying a wall, playing the guitar

Types of costs

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Can we observe how those costs change?: Average costs, marginal costs

The Average Costs

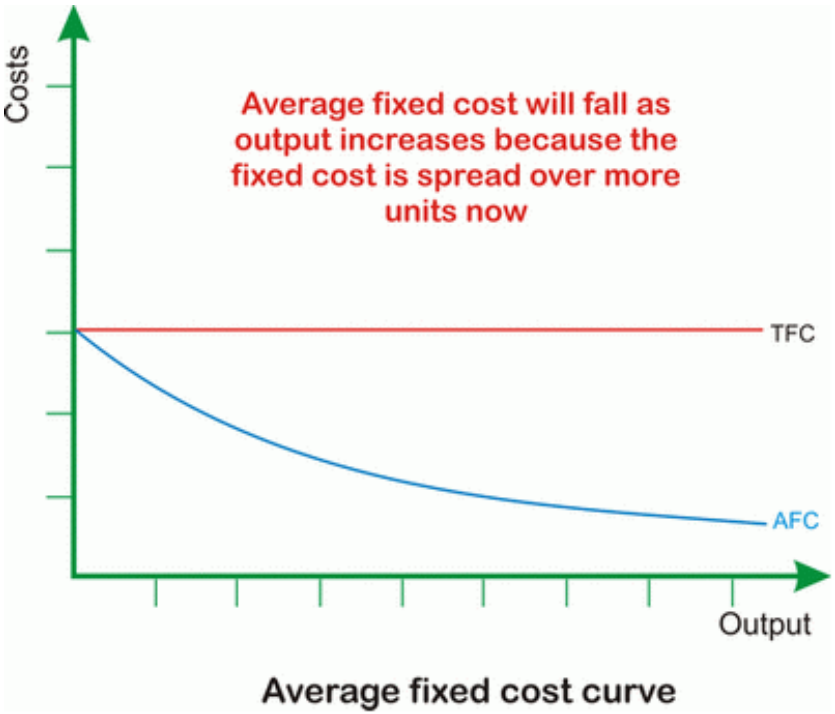
AC = Total Costs (TC)/ Total output (Q) = How much does an average unit of output cost me?

The Marginal Costs

MS = Δ Total Costs (TC)/ Δ Total output (Q) = How much more does an extra unit of output cost me?

The Average Costs in Further Detail

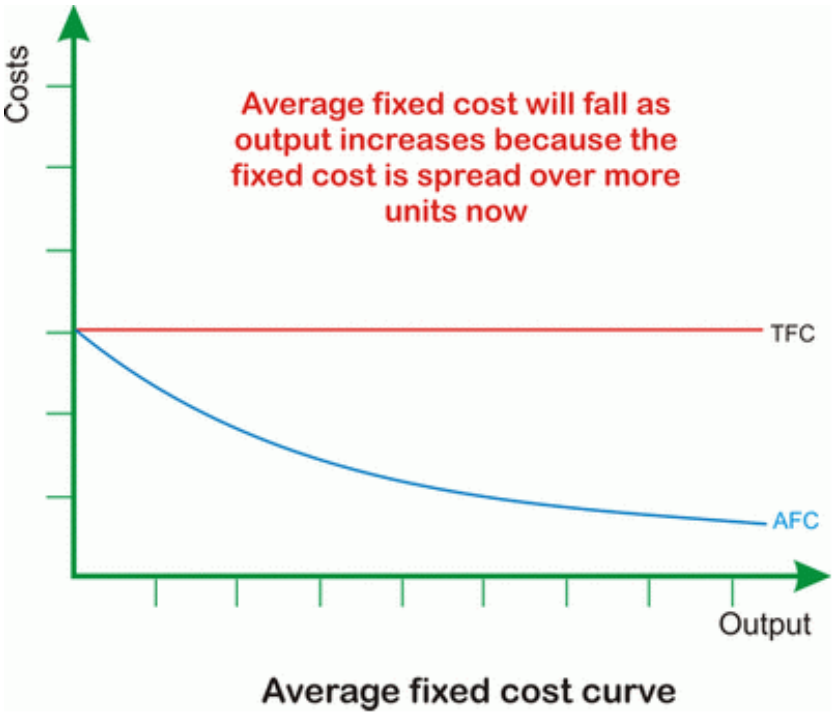
The intuition for the costs curves graphs

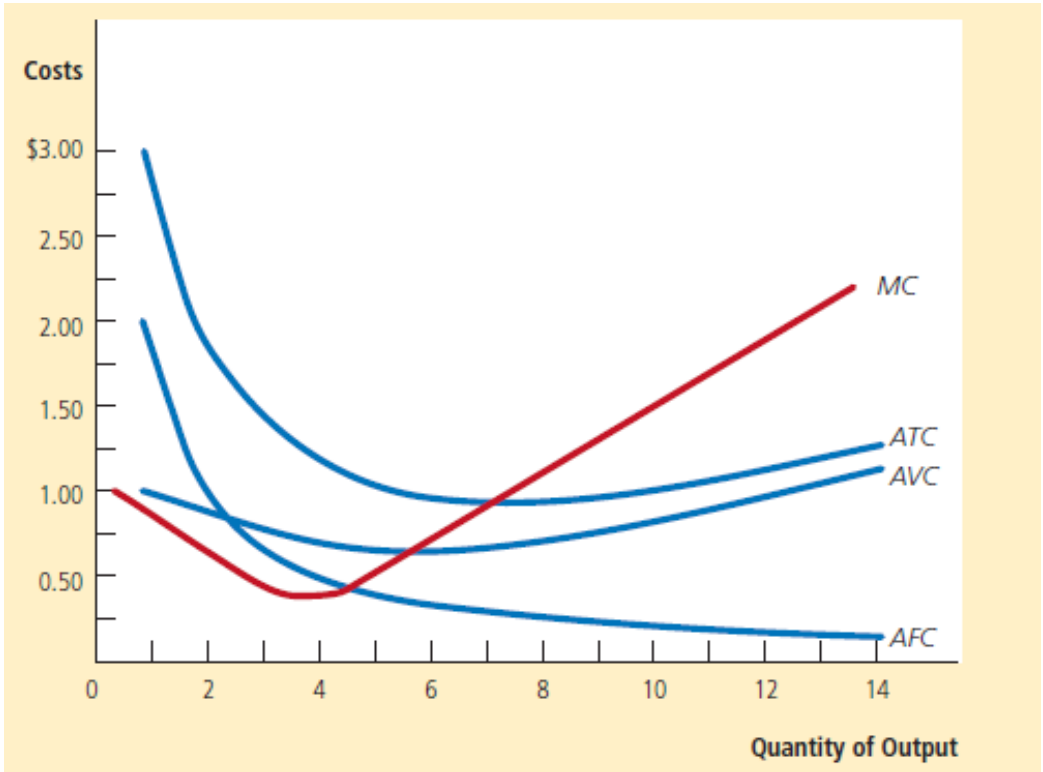


Average fixed cost curve

The Average Costs in Further Detail

The intuition for the costs curves graphs





Source: http://www.economicsguide.me

Costs

Important things to remember about short-run costs

Do remember:

1. There is a link between total product and total cost
2. This link is driven by the behavior of marginal product: MP goes up, and then goes down: learning effect, network effect and then people get tired
3. AP curve also rises, and then falls
4. MP crosses the AP at the *MAX* of AP
5. MC falls, and then rises
6. MC crosses ATC, AVC at the *MIN* of ATC, AVC
7. AFC goes down all the time
8. The difference between ATC and AVC is AFC $\Rightarrow$ AVC closes in on ATC all the time
9. These costs will matter a lot in the firms' decision making: How to maximize profit, whether to close the business, how many people to hire?

Costs in the Long-Run

Economies and diseconomies of Scale

As companies grow, they experience economies of scale. At some point they exhaust these economies of scale. And sometimes they grow too large...

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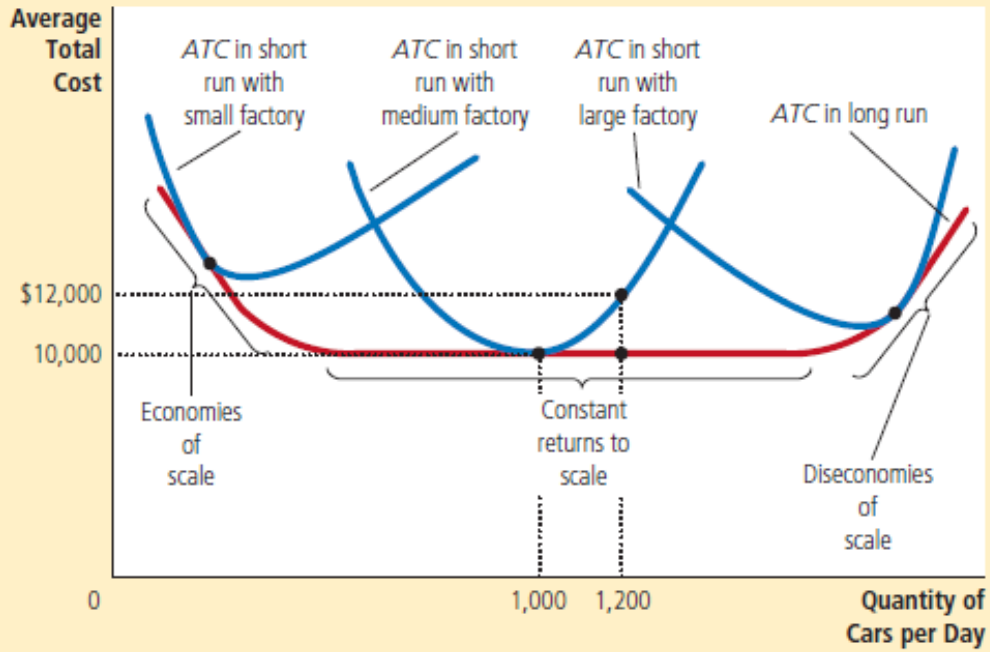
FIGURE 6

Average Total Cost in the Short and Long Runs

Because fixed costs are variable in the long run, the average-total-cost curve in the short run differs from the average-total-cost curve in the long run.



Discussion: where is the minimum efficient scale (MES) of production? Does the MES vary across industries?

Costs

So What?

Costs are one of the two crucial elements of π. Together with revenues, they determine the optimal choice of the firm, and, ultimately, the profit:

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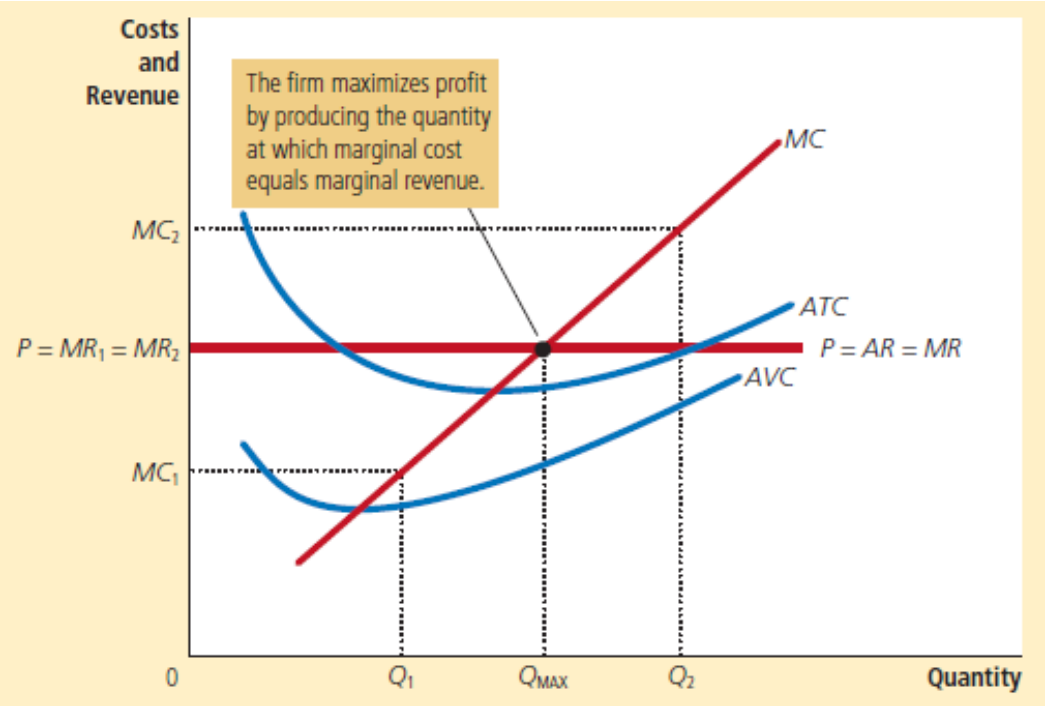
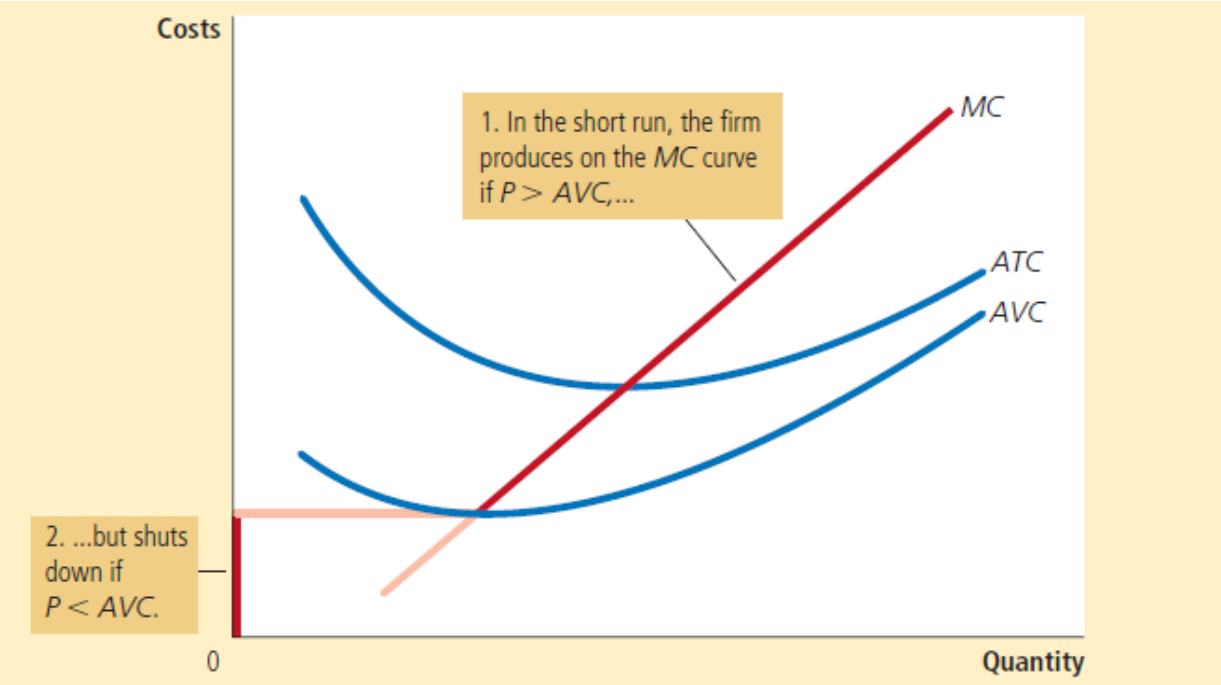


There is a certain Q that maximizes π. That is what companies live and die for.

Costs

So What?

The firm will supply a positive Q only under certain conditions:



That is why the supply curve of the firm (in the Short-Run!!) is the MC curve above the minAVC. How do things look like in the long-run? (Hint: are there fixed costs in the long-run?)

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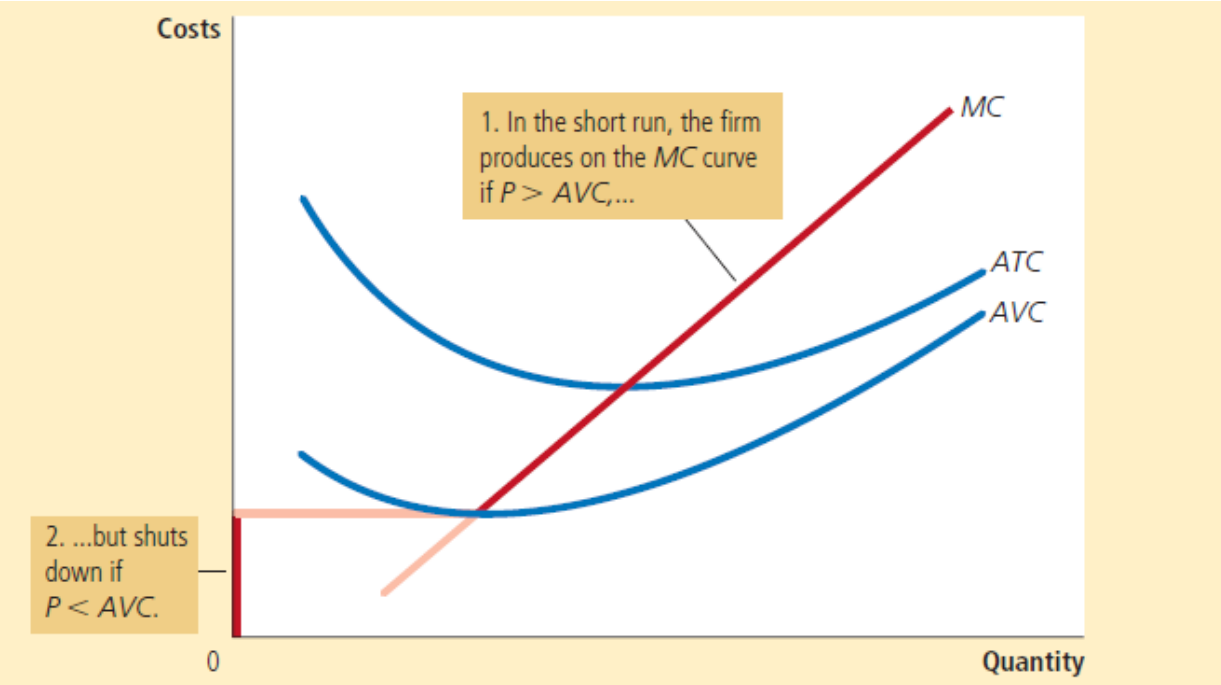

That is why the supply curve of the firm (in the Short-Run!!) is the MC curve above the minAVC. How do things look like in the long-run? (Hint: are there fixed costs in the long-run?) Next: how to find that optimal Q in various market environments?

Further Info

Reading:
M-T, ch.6+ (about: Costs of Production; Parts of: Firms in competitive markets)

Do not miss:
economist.com; wsj.com; cnbc.com