

# Title: Principles of Economics

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🔊 [00:00]

Ok that now we have described the costs that the company spaced

Let's look what it tells us about the decision of the company to supply product in the output market.

So in chapter 14 we will look at the quantity that the company chose to produce.

We will look at the firm supply and using the result about the supply by each company we will say how much the entire industry gets to produce.

So in chapter 14 we will take as given what we've learnt in chapter 13.

We will not talk specifically about the substitution between capital and labor production process we will take the cost curve the short run cost curve and the long run cost curves as given.

And we will compare how the cost of production compared to revenues that the company is spending and what that tells us about the profit maximizing output level.

We will focus on the competitive industry and we will look at less competitive industry in the following chapters.

So chapter 14 deals with perfectly competitive industries.

Chapter 15 will be with monopoly.

Chapter 16 and 17 will be with oligopolies and monopolistic competition which on the cases between perfect and 0 amount of competition in the market place.

In about the perfectly competitive industry with assuming that there are many buyers and sellers


In addition sellers can enter or exit the market there are no barriers to entry.

Implicitly we are assuming that all companies are identical so that additional companies that come into the industry have the same cost structure and average total cost at the same level as the companies that are already in the industry.

The product in the industry is homogenous we would say that both producers and



buyers  [03:00] are price takers.

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They accept the market prices given and they will not try to influence it.

So in chapter 13 we learnt that because of the diminishing marginal productivity with total cost curve of the company is convex

It might start at positive level its fixed cost of production and then as the output level of the company increases the total cost curves will increase at a faster rate and eventually might diverge to infinite.

Total revenues of the company are simple linear line we already said that every time that the company produces one unit of output its revenues go up by the amount of the price.

So we can say that the slope of the total revenue curve will be price of the output product

And we can also think that the slope of the total cost production is the additional cost of production or the marginal cost of production.

That's the cost and that's an extra cost of producing one more unit of output.

And if you compare with total revenue and total cost of production we can grab with total profits that the company that earns as the difference between the slope. And we would that say as long as total cost of production are about total revenues the company will earn negative profits.

If total revenues exceed total cost the company will earn positive profits.

And finally if once total cost again become higher than total revenues the company will again will earn negative profits.

And we can see that one total revenue rise faster than total costs so when total revenues are steeper than total costs profits are increasing.

And when total cost starts rising at a faster rate than total revenues that's when total profits of the company fall.

So one observation form this graph we will end up using in the next few chapter is that what the company cares about is the slope of these two total revenue and total cost curves.

As long as marginal revenue of the company slope of them total revenue curve is greater than marginal cost which is the slope of the total cost curve.

We should think that it is profitable for the company to produce an additional unit of output.

And when the total revenues rise more slowly than total costs which means that marginal revenue is less than marginal cost of production that's when profits fall.

So we can say that profits are maximized when the slopes of these two curves are the same.

And additional way to say it is that of course the profits are maximized when the difference between total revenues and total costs is maximized.

And you can see that that happens exactly when the slope of these two curves are identical.

So this graph showed revenues costs and profits when we had cumulative amount of dollars on the vertical line.

Now let's look at it, let's look at the same situation when we drop three units prices and costs on the vertical axis.

So again we are assuming that there is an exaggeratedly given in the market place.

So we are given what would the price the market is the company stating that as given.

And because of the technologies in the production process the company also observes what its cost curves are.

Cost of production are given and so using this exaggeratedly given price level the cost that the company faces the company's problem is to choose how much to produce.

And just like we observed in the previous slide the company will choose to produce output as long as a additional revenues are greater than additional cost of production.

As long as this price line as long as the price is that the company can get are greater than the additional cost of production the company will choose to produce all these units of output.

On the other hand when the additional costs are greater than additional revenues the company will choose not to produce those units of output.

So to maximize profits we will say that the company produces output where marginal revenue is equal to marginal cost of production.

We will say that this is the profit maximizing property for any company in any industry that this property holds for a perfectly competitive industry for a monopoly for any market structure.

In the next chapter we will say that the difference comes from(?)

This correspondence between prices in the marketplace and marginal revenues.

In perfectly competitive industry we are taking the price level as constant and the company cannot influence that price.

To jump ahead a little bit we will say that for a monopoly we will say that the monopolies will choose its price level as well as its output level.

And to sell more units of output, the company will have to reduce prices of market place.

And because of that, prices will not be constant.

And there will be a different prices and marginal revenue of company.

We will discuss that more in the next chapter.

But for perfectly competitive firm, we have the nice simple property that price is equal to average revenue of production is equal to marginal revenue of production.

And with this property the simple solution to the company's problem is to produce where price is equal to marginal production.

One additional thing that we want to check in this graph is whether the company is making positive, negative or zero profits at this profit maximizing output level.

Here, because these average revenues are greater than total average cost of production, we will say that company is making positive profit.

And so the company will definitely choose to produce output level, and choose to stop it is production in this output level.

On the next few slides, we will discuss that what happens, if that's not the case.

If the relationship between average revenues and average total cost of production is not like this.

We will say that if the company could not cover it is total cost production or it is variable cost of production

Maybe the company would be better of producing zero units of output, shutting down or maybe completely existing the industry.

Let's start by discussing the short run of output level.

And let's remember that in the short run, the company spacing two kinds of costs.

Fixed cost and variable cost of production.

Fixed costs are by assumption given, and the company cannot influence them, and the company cannot get rid of them.

So we will say that in the short run, the company will choose to produce positive amount of output as long as it can make.

As long as it's at least cover it is variable cost of production.

We will say that for prices that are high enough.

The company will choose to produce output, where price is equal to marginal cost of production.

And only if the price is fall below the minimum of the average variable cost curve.

Then intuitively, every unit of output that the company produced cost so incremental cost would be about incremental revenues.

And the company would be losing more and more money.

And in that situation it would be better decision for the company to shut down produces zero units of output.

So we would say that for prices below the minimum average variable cost of production.

The company will jump to producing zero units of output.

In the long run, the situation is similar except that the company can also avoid paying for it is factory of for it is capital.

So, in the long run, the company compare price in the market place, with the average total cost of production.

Not just the average variable cost of production.

So for, if the price level in the market place, cannot compensate the company for average total cost of production at any output level.

Then the company will, we could say jump to zero, jump to zero unit.

But in fact, the company will completely exit the market.

So to summarize, in the short run, we can have company's making profits.

Right? If the price is high enough, the company would choose to produce this amount of out pout.

And we can compare this average revenue obtain with average total cost of production.

And we would say that rectangular here.

Is the gives us the total profit that the company makes

If the price level doesn't reach all the way to the level of average total cost.

We would say that the company makes a loss, equal to this rectangular here.

And here, you should keep in the back of your head that, this loss is only relevant if average variable cost of company is below this point.

Right, only in that case, the company would choose to produce this output level and realize this loss.

If the average variable cost curve high enough, higher than this point.

The company would actually choose to produce zero units of output.

And because the lost to the company in that case would be the fixed cost production.

And so, in the situation when the company is sure that it will make a loss, you should always think that that the company will compare the loss from producing zero unit of output and the loss from producing this loss minimizing or profit maximizing amount of output.

Ok? What happens on the industry level?

So far we discuss the decisions at a particular company.

And in the short run, the company produce positive amount of output.

As long as price covered it's average variable cost of production.

With a given number of firms in the industry.

We can multiply these output level for each price, for each possible price in the market.

By 1000 to get the market supply.

Right? Remember from chapter 4 that we are adding up individual supply curves horizontal to each other to obtain market supply.

Now in the long run, company will produce as long as it's as long as the price covers it's average total cost of production.

So the supply curve for company is the portion of the marginal cost curve above minimum average total cost.

And let's think what happens in at the industry level.

So if prices are above this price level.

It means that company in the market place would be earning positive profits.

And you should think that additional companies will want to enter the industry to share some of these profits.

So if price is high enough.

More companies would enter the market you should think that.

Infinite number of companies would be willing to enter the industry to get some of these profits.

So for prices high enough, we would have maybe infinitely many companies willing to participate in this market.

And if we added up in this individual supply curve of the infinitely many companies.

We would get infinitely much output, right?

And for, long enough prices, if the prices do not cover average total cost of production of any company.

Each of these companies in the market places would want to exit the market.

So the prices below this level, there would be no company in the market place.

So we can summarize this information by saying that the long run industry supply is a perfectly, you should think that is perfectly elastic.

Supply curve, because at lower prices, no company will want to exist.

And at high enough prices an infinitely large number of companies would want to participate.

What happens if market condition changes?

So suppose that market demand increase.

Because of fashion, because of an increase in consumer's incomes.

So you should think that in the short run, when prices in market place increase.

Each company will be, each company will have an incentive to produce more output.

And each company will earn positive profit.

In the long run however, because companies are making more profits.

More companies are willing to enter the industry.

So also the supply curve in the industry will increase.

And price will fall to the original level.

So here the central idea is that, if there is a change of the demand side of the market.

In the short run companies can make losses or profits.

But in the long run, because of entry and exit.

The market supply curve will adjust so that prices are exactly at the minimum average total cost of production.

And all companies in the market place make exactly zero profits.

So we said that in the long run, market supply curve is perfectly horizontal.

And that might sound strange and unrealistic.

And so you should think that in the real world, there are complications that violate some assumption that we placed on our model.

And the long run supply curve might be upward sloping.

First of all some of the input used in the process might be available in limited quantities.

So, the supply curve may not be always perfectly elastic.

Perhaps at some level of inputs, when there are no more inputs available.

The supply curve could shift to being perfectly inelastic

Another thing to realize is that, we keep assuming that all companies are identical.

So, that when additional companies enter the market.

They have the same cost structure, the same average total cost curve as all the previous companies that have already entered the market.

In reality you may think that, there is a self-selection of companies.





The most effective most efficient companies, enter the industry first, and only if prices rise sufficiently in the market place.

Last efficient firm would enter the market.

So in this analysis of changes of to market demand.

Here we observe that if all company is identical, the supply curve would shift to, so that price of the market place fall to the original level.

But if all the company outside the market are less efficient than the companies that companies currently in the market.

You may think that additional company is will only enter, if prices can cover at least, their average total cost of production.

So if their average total cost of production are higher, than average total cost from previous firm's .

Then prices with this additional entry might be higher than prices originally, ok?

So if the marginal firms are not the same firm's that are currently in the market, which means that if firms have different cost of production or if some resources are available in limited quantities.

We could get a little bit different results.

Even the long run, supply curve in the industry could be upward slopping.

So that is the analysis of perfectly competitive markets.

So far we discussed, How much each company in a competitive market.

How much the industry, the competitive industry gets to produce for any price level.

And we also derive to the price level that result in a perfectly competitive industry.

We said that in the long run, prices fall to the minimum average total cost level.

In the next few chapters we will see how that compares to perfectly non-competitive industry, the monopolistic industry.

And two cases between the perfectly competitive and the monopolistic case.