**W8 V2 Market Supply**

0:10  
Now that we've got the firm supply curves, let's talk about what that translates to in the market.

0:15  
But remembering that there can be a difference between the long run and the short run, and we're really going to focus on the intuition for the shapes.

0:21  
Please do not memorize, do not assume it always has to look like something.

0:25  
That way if the context changes, if the reality changes, you know how to handle it because you know the intuition, OK, so we're keeping the fact that we're working in a perfectly competitive world.

0:36  
So firms, long run, short run, doesn't matter.

0:38  
They're reacting to their prices by choosing their quantity.

0:42  
Now what we did in Module 3 was pretty straightforward.

0:46  
We're like, oh, tell me how much each firm supplies.

0:48  
I'll just sum that all up and I will get market supply.

0:52  
And that works really well if I know the number of firms in the market.

0:57  
So for us, in the short run that's going to work really well because in the short run nobody can enter or exit.

1:04  
So I know exactly how many firms I have and you know the best they can do is not produce, but they cannot leave.

1:09  
In the long run, this becomes tricky because the definition of the long run is you can enter or exit.

1:15  
So I have to pay closer attention to the number of firms in the market, what that means for the long run and that's what we're going to talk about here and that's what's going to give us all of the difference in the shape for the market supply curves.

1:27  
OK, short run market supply curves.

1:29  
We are benefiting from the fact that in the definition of the short run, you cannot enter, you cannot leave as well.

1:35  
So the best firms can do a shutdown.

1:38  
Fine.

1:38  
I just calculate, I sum it up as zero and we're good.

1:42  
What that means is you're doing exactly the same as you did in module 3.

1:47  
You are just summing up horizontally all the quantities and you've got your market supply curve.

1:52  
Absolutely simple.

1:53  
Just pick that knowledge piece up from Module 3 and upload it.

1:57  
For this one, Long run is tricky because in the long run you can enter or exit.

2:02  
And here's what happens in the long run or short run, if they're entering or exiting, I don't have stability, and equilibrium needs stability.

2:10  
I need a fixed number of firms in the market.

2:12  
And how do I figure that out?

2:14  
Well, I ask, why do firms want to enter or exit?

2:18  
And firms in our world, because they're so simple, the only thing they're going to respond to is profit signals.

2:24  
So if they're making profits, they want to enter, If they're losing money, they want to exit.

2:27  
And they can in the long run.

2:29  
And that's what makes it tricky.

2:31  
So if I want to find stability, if I want to find a nice kind of market, long run supply, I'm really looking at this profit condition to give me a signal to kind of figure out how I can determine the number of firms.

2:43  
So that's where we're going to start, OK?

2:46  
Equilibrium means stability, and stability means no incentives to enter or exit.

2:53  
When a firm's gonna have no incentive to enter or exit?

2:56  
When they're making zero profits effectively.

2:58  
Right.

2:59  
I need to be indifferent because if I'm making profits, I wanna enter.

3:02  
If I'm losing money, I wanna exit.

3:04  
The only point I'm gonna say I don't care so much is if I'm indifferent.

3:08  
And I'm indifferent between exiting and entering.

3:11  
If I'm making zero.

3:12  
If I exit, I get nothing.

3:14  
If I am in and I get nothing in terms of profit, I'm stable.

3:18  
OK, so I'm looking for 0 profits.

3:20  
That is why we use zero profit condition.

3:23  
Not because it's some magic has some magic meaning #2 if firms are different and reality is that they are different.

3:31  
We usually make our lives simple here by assuming everyone's identical, but in reality it's different.

3:37  
So what we say is that the last firm entering?

3:40  
Because if your costs are lower than everyone else, you're already in the market, right?

3:44  
And the higher cost firms are outside.

3:46  
So we need the last firm to be making zero profits, but again, zero economic profits.

3:54  
Sounds suspicious?

3:55  
We've already discussed this earlier, but let's bring this back up here.

3:58  
OK?

3:59  
What does 0 profit mean?

4:01  
It means that when you face a price, OK, you are making enough money to exactly cover your costs.

4:13  
OK?

4:13  
At the price that you face, the quantity that you choose has an associated average cost, and I choose that quantity based on the marginal cost curve.

4:26  
At that quantity, price is exactly equal to average cost, which means I'm exactly breaking even.

4:32  
I'm making zero profits.

4:34  
Why would a firm ever produce if they're making zero profits?

4:37  
Because they're making zero economic profits.

4:40  
They're doing at least as well as their next best alternative.

4:44  
Quite possibly there's accounting profits in there.

4:47  
But from an economic perspective, when we're thinking about opportunity costs, they're making exactly the same as they could with their next best option.

4:54  
And that's reasonable to assume that that makes sense, right.

4:57  
OK.

4:58  
Now there are a couple of terminology terms that we use in here in that what is special about that zero profit condition?

5:06  
What is special about the quantity at that zero profit condition?

5:09  
Sometimes we call it the efficient scale.

5:11  
OK, That's just a jargony term for saying I have found the quantity that at is at minimum ATC.

5:19  
That's it, right?

5:20  
Because on this graph when I have this Q and I want to differentiate it from every other Q, because Q could be here, Q could be there, I say that this what's special about this quantity is that ATC at this quantity is also equal to MC, right?

5:37  
So at this quantity, both of those are exactly the same, and I'm going to give it a special name called Efficient Scale.

5:46  
You don't have to remember if you want to use the mouthful of words, that's fine as well.

5:49  
OK, now we say in the long run firms better be at that point where they're making zero profits because otherwise they want to enter or they want to leave.

6:01  
Now this works really well in a shortcut method if you've got all identical forms, because if one firm is making zero profits then all the forms are going to be at that.

6:08  
Be careful when we have non identical forms, OK?

6:11  
And watch out for a subtlety in that OK, so how do I use this to think about long run market supply?

6:20  
I know each firm's supply curve, marginal cost curve above minimum ATC, but what does that mean for the market?

6:28  
Because in the market, if prices rise, firms now have the opportunity to jump in or to leave if prices fall.

6:34  
OK.

6:34  
So for the last firm to enter, I need 0 profits.

6:38  
For the last firm to enter, I need P equals minimum ATC.

6:42  
That's the zero profit point.

6:49  
I use that to then think about long run market supply.

6:54  
For a lot of the examples we'll do, we'll make some simplifying assumptions to kind of assume that they are perfectly elastic.

7:00  
Let's talk a little bit about those assumptions.

7:03  
OK.

7:04  
So on here, I have the firm on the left hand side and I have the market on the right hand side.

7:10  
And what I know is that the firm's long run supply curve is the marginal cost curve above the minimum ATC.

7:19  
Now that dotted line corresponds to the minimum ATC just projected that same price all the way on to the market.

7:26  
OK, good.

7:27  
So now if you give me exactly that price, I will give you, if I'm one firm, exactly that quantity and I'm going to call this quantity here, Q.

7:41  
Let's call this Q star.

7:43  
This is the firm quantity Q star.

7:45  
OK, anything below that you're not getting anything.

7:48  
You hit that price there, I'll give you some quantity.

7:50  
Now, if I want this one firm to give me a higher quantity, this firm is going to say, no, I'm not going to give it to you.

7:57  
If you don't raise the price.

7:58  
You have to raise the price to cover my higher marginal cost.

8:01  
And then and only then I'll give you a higher quantity.

8:06  
That's for this one firm that's already in the market.

8:08  
But there's another firm sitting outside saying look at this price.

8:11  
I'm making positive profits, I will jump in.

8:15  
You don't need to go to that first firm to get the to get the goods.

8:18  
I will give it to you as a new firm coming in and I can because this is the long run, OK.

8:23  
What price will they give it to you?

8:24  
Well, they'll give it to you at their minimum price up there.

8:27  
And then another firm, you want to raise the price, another firm will say, I'll give it to you at a lower price, I'll give it to you at my minimum price.

8:33  
That's what competition is, right.

8:35  
And So what that's going to lead to is a nice smooth, it's an approximation when we make it smooth, long run supply curve that looks kind of perfectly elastic.

8:46  
Again, it's an approximation because in reality there's a little bit of jumps up in there.

8:50  
But this is only true.

8:52  
It's only the same minimum price that everyone offers because all the firms are identical otherwise some forms are going to be higher costs, lower costs and all of that.

9:01  
So let's think about an example when we've got firms that are different costs.

9:04  
So this is the blue firm and those are its costs.

9:08  
And so if you ask the blue firm to give you some goods, it's going to say, give me at least that the price, the blue price.

9:18  
There is nothing.

9:18  
I'm not giving you anything.

9:20  
You give me exactly the blue price, I'll give you this quantity.

9:23  
Anything more than this, you're going to have to give me a higher price.

9:29  
OK, good.

9:29  
How many forms of this blue one do I have?

9:32  
So let's say I only have one blue firm.

9:36  
You're gonna say, wait, but in a perfectly competitive market, you need an infinite number of firms.

9:40  
Why one firm?

9:41  
I'll say there's only one really productive firm.

9:44  
This is the one firm that has this super innovative entrepreneur, and their costs are really low.

9:51  
But only one of them.

9:52  
On the other hand, I have an infinite number of red firms.

9:59  
OK, what's true about the blue?

10:01  
The difference between the blue firm and the red firm is that the red firm has a higher cost.

10:06  
Now I want to make my diagram a little bit tractable.

10:09  
So I'm keeping the marginal cost curve the same for both firms.

10:12  
I'm just making it a difference in the average total cost curve.

10:15  
OK.

10:16  
So the first initial firm to jump in will be the blue firm because they'll give it to you at a lower price.

10:21  
And then you give them a higher pricing.

10:23  
Like, I want more goods.

10:24  
I want more goods.

10:25  
They're going to say sure, but you got to give me a higher price.

10:27  
You got to give me a higher price, and I'll give you more.

10:29  
I'm moving along my marginal cost curve.

10:32  
Nobody else wants to jump in because if they jump in, they're not going to be able to cover their costs.

10:39  
So it's still going to be the blue firm giving you money, giving you output in response of money, as long as it's the only one able to meet your minimum price.

10:51  
But the second you hit the red firms, minimum ATC, then all of those infinite firms jump in and then your supply curve kind of looks like that, right?

11:00  
You've got a long run supply curve that looks like that.

11:03  
Now this is a little bit ridiculous cuz I've got one firm and an infinite number of identical firms.

11:09  
But you can extend this, right?

11:11  
First productive and then the next more productive and you'll get something more realistic in terms of an upward sloping long run supply curve.

11:19  
OK, so when we do this of what seems ridiculous in a perfectly infinite long run supply, we're making some simplifying assumptions, specifically identical cost firms in a constant cost industry.

11:30  
However, it is useful for us to focus on the truly important things that we want you to get, which is the difference between the long run and the short run supply curves.

11:41  
OK?

11:41  
In the short run, we're using the fact that the number of firms is fixed.

11:45  
You're using module 3 and you remember from module 3 your short run supply curve is going to be upward sloping because you're summing up all the firms Marshall cost curves.

11:55  
In the long run, this zero profit condition caused because firms can freely enter or exit, give you minimum ATC rather than marginal cost, giving you the shape of the long run supply curve.