**W3 V1 Perfect Competition**

0:10  
Today, we're going to start with our first model, a perfectly competitive market, and let's talk briefly about the assumptions that we're going to make to simplify a complicated reality in our world.

0:19  
Let's also introduce some jargon that we're going to use throughout the course, make sure we're comfortable with it.

0:25  
So market is a space where buyers and sellers interact and assumptions are basically the rules of the game, right?

0:30  
They determine how people interact and the patterns of interactions.

0:35  
So let's talk about the assumptions.

0:37  
The most important assumption is we have so many buyers and sellers that each one is small relative to the market.

0:44  
What this means is that they cannot affect the price.

0:48  
For example, by buying more you get a discount.

0:50  
No, if you're large enough as a seller, you can affect the market price.

0:54  
No, none of that is happening here.

0:56  
Buyers and sellers look at the price that's flashing on the on the sign and they react to that their price takers.

1:05  
The other important assumption is going to be that consumers treat all goods as identical.

1:11  
They don't have to be identical.

1:13  
What's important is that if consumers see a lower price somewhere else, they don't care who they're buying it from, they're going to go to the lowest cost producer because there's no transactions cost, right?

1:24  
They're just going to scan for the lowest price.

1:26  
They're all identical effectively to the consumer.

1:29  
And that's going to give us a lot of the results that we're looking for in a perfectly competitive market.

1:34  
So these are the two main ones that we're going to focus on initially.

1:37  
Apart from this, we have other assumptions.

1:39  
For example, everybody knows everything about everything, right?

1:44  
Full information.

1:45  
It's a really strong assumption and we'll relax it a little bit way towards the end of the course, right?

1:51  
So this is an assumption that we're going to take as given for every single topic we do right until the end.

1:57  
Another one which we're going to examine more carefully in Module 8.

2:01  
This idea of firms can enter markets whenever they want to and leave whenever they leave want to leave with some restrictions.

2:08  
OK.

2:08  
So we're going to call that free entry and exit again much more in depth in Module 8 and taken as given for now the last one.

2:18  
It is kind of important because some things that we think of as obvious are not going to be there in this model because we're assuming it away by assuming no externalities.

2:29  
OK, I'm going to wait, wait until week 12 to define this, but we'll talk about it a little bit more specifically in our week 5 when we talk about surplus.

2:39  
But for now, our focus is going to be on the 1st 2 assumptions.

2:43  
And those are going to be the ones that we keep coming back to taking these other ones as given, right?

2:48  
So those are in the background hidden.

2:49  
We're not going to focus on them.

2:51  
We're going to focus on the first two.

2:52  
It doesn't mean that the other three don't hold.

2:54  
They do hold.

2:55  
We're just not focusing on them.

2:57  
OK.

2:57  
So this is our world that we're working within.

3:01  
It's going to lead to a world that sounds kind of ridiculous in some ways, right?

3:06  
But it is a, what we call a benchmark word, right?

3:09  
It's the perfect world.

3:11  
And once we have a perfect world and we see how things work, we have our economic intuition, then we can start introducing more realistic aspects into the model.

3:20  
But it's a nice benchmark to have.

3:21  
So I want you to not take it too seriously because we don't have perfect competition really in the real world.

3:27  
But it is a good way for us to build our economic intuition, understand the main channels, which is what we're doing in one O 1.

3:33  
And then as we introduce more realism, you can kind of see how and why things change.

3:38  
OK.

3:38  
So that's the world that we're working in.

3:40  
Keep that at the back of your mind.

3:42  
Anytime you're doing any analysis here, we're going to now switch to talking about a few graphic and graphing conventions that we have.

3:50  
So we're going to draw a lot of graphs.

3:52  
In fact, I want you to build an instinct where anytime you have an economics question, your first instinct is to draw a graph.

3:59  
All of us do it.

4:00  
That's what economists do, right?

4:01  
You ask us any question doesn't matter how much economics we've studied, our intuition comes from a small graph that we draw basic intuition and then we develop it more fully into a model.

4:11  
Now with a graphing convention thing, we're going to ask you to draw graphs.

4:14  
Please always label your axis.

4:17  
If you do not label your axis, we don't know how to interpret what you're saying, and you're not going to get any marks for this.

4:24  
OK.

4:24  
So how do we label our axis?

4:26  
Typically, we're working in a perfectly competitive world where we say there's a flashing price, OK, People enter the market, they see this flashing price.

4:36  
We usually represent this with AP, sometimes with subscripts, superscripts.

4:40  
But the P is a price and then people react to this price by choosing A quantity.

4:47  
OK.

4:48  
Sometimes we'll call this Q subscript superscript, right?

4:51  
So the reaction in a perfectly competitive market is always to a price that's beyond the control of an individual buyer or seller.

5:00  
So when we put this in a graph, typically you would put the so-called exogenous variable price on the X axis.

5:06  
But economists do it in the unintuitive way, where we put price on the Y axis and we put quantity on the X axis.

5:14  
OK, why?

5:16  
This is historical.

5:17  
We've always done this.

5:17  
And so we keep doing this.

5:18  
So we teach future generations of economists like you that we continue on with this unintuitive way.

5:23  
OK, but the reasoning, the thinking is always here's the price in a perfectly competitive market.

5:29  
And then you react to the price by choosing your quantity, even though we graph it in the unintuitive way of putting price on the Y axis and quantity on the X axis.

5:40  
OK, now let's talk a little bit about jargon.

5:43  
Anytime you start anew with a field, there's a lot of new terminology.

5:48  
And sometimes that can be really overwhelming.

5:50  
And a common instinct is not just you, right?

5:54  
For me too, when I see a new field, is to think that this jargon has some special meaning, right?

5:58  
And so if you use the jargon, you memorize the jargon, you're a good economist.

6:02  
The jargon has no meaning in the sense all it is is it's a way to communicate information.

6:08  
We don't want to say the same thing over and over again, just takes up time and space when you have to speak it or write it.

6:15  
So jargon is a short form for us to communicate information to other people who know this information.

6:21  
It doesn't mean that you don't know what's happening, right?

6:23  
So what I see a lot in ECO 101 on an exam is students throw out a bunch of jargony terms and they think they're answering the question.

6:30  
They're not.

6:31  
Right because we need you to demonstrate that you understand the economic intuition.

6:36  
So if you don't want to use a jargon, sure, don't use it right.

6:39  
Focus on the economic intuition.

6:41  
Focus on understanding it.

6:42  
Once you can do that, then use the jargon to capture in a quick way, succinct way what you're going to, what you want to say or communicate with us.

6:53  
OK, so please don't put too much emphasis on jargon, or put too much associate too much meaning with jargon.

7:00  
OK, that's it.

7:01  
Let's talk about some jargon that we're going to do in this course.

7:04  
OK.

7:05  
The first thing that we're going to do is differentiate this term, quantity demanded from demand.

7:11  
OK.

7:12  
What we have just said is we say, look, give me a price and I will tell you how people react by choosing A quantity.

7:22  
OK.

7:22  
And that is nice because what you're saying is when the price is five, they want to buy, let's say 10 units of it.

7:31  
When we're talking about quantity demanded, when we add on that quantity part to demand, we are basically doing a thought experiment or it is a result of a thought experiment where we change the price.

7:44  
We say, oh, what happens if the price goes to six?

7:46  
What happens if the price drops to three?

7:49  
And what happens to the choices that people make when they're buying that good, the quantity demanded.

7:58  
OK, so price of the good changes.

8:01  
And here's another jargony term that we're going to get to in a second.

8:04  
Everything else is held fixed.

8:05  
The only thought experiment here is price changing.

8:08  
When we're doing that thought experiment, we're effectively talking about how quantity demand changes once we introduce demand.

8:16  
I'm going to call this a movement along the curve.

8:20  
OK.

8:20  
So just put that that part there and when we come back to it and demand, you'll see what that means in here.

8:27  
OK.

8:27  
So that is quantity demanded.

8:29  
Sometimes we're going to be talking about changes in demand.

8:33  
What that is, is it's going to say people react to price.

8:39  
That's the still going to be the same, right?

8:41  
Give me a price and I'm going to react by choosing quantity.

8:44  
But what I'm doing in this whole experiment is I am keeping the price fixed.

8:48  
So the price is $5.

8:50  
It used to be that they used to buy 10 units, right.

8:54  
So that was my initial choice.

8:56  
But for some reason, demand is changing so that at the same price of $5, they're buying, let's say more 12 units or they're buying less, right, 7 units.

9:10  
But the keyword here is same price.

9:13  
Price is not changing, but people's choices are changing.

9:17  
When we introduce demand, we're going to call this a movement off the curve.

9:22  
OK, pay attention to this.

9:24  
This is useful especially for multiple choice questions, cuz we'll phrase it to make sure you're understanding the difference between moving a longer curve or off curve.

9:33  
OK, so that's one piece of jargon.

9:34  
The other piece of jargon you're going to see a lot is all else held fixed.

9:39  
OK, now what are we doing here?

9:41  
We're doing modeling because we want to say when something changes in the environment.

9:45  
Here's our prediction problem is, when you change more than one thing in a model, we're not sure what's causing what right?

9:52  
They can make too many interactions at the same time.

9:55  
So we do this thought experiment, we say we're just going to change one thing.

9:58  
We're just going to pull one lever.

10:00  
We're not changing anything else.

10:02  
And then when something changes or we see a reaction, we know exactly what to attribute that change to.

10:09  
So that's why we kind of say let's change price, all else held fixed.

10:12  
OK.

10:13  
So please make sure sometimes we'll say that explicitly.

10:17  
Sometimes it's implicit because we know that you know that.

10:21  
But especially in the beginning, make sure you're saying this to yourself and your thought process so you understand what we're doing in here.

10:26  
OK, this is very useful because it allows us to focus on the impact of the chosen factor and trace it through in the model.

10:34  
OK, so that's the other jargon term.

10:36  
The other type of jargon term that I'm going to be using a lot is talking about the type of data.

10:41  
I'll say this is discrete data.

10:42  
This is continuous data, and I'll show you what that means in a second.

10:46  
You need to be comfortable working with both.

10:48  
Sometimes you'll get discrete, sometimes you get continuous.

10:50  
Why?

10:51  
Because a economist get different types of data.

10:53  
We need to be comfortable working with both.

10:55  
B.

10:55  
It's a really good way for us to check for conceptual understanding.

10:59  
Sometimes just a small switch from the type of data we give you helps us elicit from you whether you've understood a concept or not, or whether you've just memorized something or you can just do the math but not understand the economics.

11:11  
OK.

11:11  
So please do not switch.

11:14  
I'm more comfortable with the equation.

11:16  
So I'll take the discrete data and approximate an equation.

11:18  
Do not do that, OK?

11:20  
Work with the data that you're given and get comfortable doing that.

11:23  
Cuz to be an economist, you need to be able to do both.

11:26  
Now let's talk about what discrete data is.

11:28  
Discrete data is basically information like this, right?

11:31  
I'll give you a certain number of prices, or I'll give you a certain number of quantities, but I don't have information in between those quantities, right?

11:39  
So I don't know what the price is in between zero and one, but I do know that when the quantity is 2, the price that I'm looking at in this data is 10.

11:53  
So here.

11:54  
OK, so that's one piece of information I have.

11:57  
The other piece of information I have is that let me just put the numbers here, it's easier for me.

12:02  
The other piece of information I have is when the quantity is 4, the price is 7.

12:10  
When the quantity is 6, the price is 6.

12:14  
OK.

12:14  
When the quantity is 8, the price is 3, the quantity is 10, the price is 1.

12:21  
OK, this is what I have.

12:22  
I have little points of data and I don't have any information in the in between.

12:26  
If I don't have any information in between, I, you know, instinct, you guys are here, You're like, oh, let's just approximate that with this.

12:32  
No, because if you draw the line there, it means you have some information in there.

12:35  
What we have is just these points of information.

12:39  
So if I give you this in a in a thing like this and I ask you sometimes we ask you to just draw it on a graph, basically all you'll do is you'll say, I don't know anything between zero and two, but I do know at two it's 10, right.

12:53  
I don't know any change that's happening in here but then that and so you can kind of connected if you want to connected by this.

13:00  
This is important.

13:01  
When we want to calculate, for example, area under the curve will say tell me it's coming in demand what the total area under the curve is.

13:09  
Then basically you're saying, I know that this is this information, right?

13:14  
I know that this is this area in this area without doing this.

13:19  
Don't do this because this is saying you have this extra information which you don't really have in here.

13:24  
OK, so this is discrete data.

13:25  
This is how you would work with it and this is how you'd work with it on a graph.

13:30  
The other type of data that we have is an equation.

13:33  
Typically this comes out of data work that we do and it's an approximation, right?

13:37  
But it gives you kind of continuous data.

13:39  
Thing like this.

13:40  
These equations, sometimes you write them as quantity, as a function of price, which is what we've done here.

13:46  
That's kind of the economic intuition way, right?

13:48  
Here's a price.

13:49  
This is what's given to us and this is the reaction in terms of quantity.

13:53  
Sometimes we wanna work with an equation in the other way, right?

13:57  
Why?

13:57  
Because we're solving equations.

13:59  
Just notice that you can take the same equation and just rewrite it by moving terms around.

14:03  
Please get comfortable with doing this because you're going to do this a lot, right?

14:07  
So basically you'll start off with quantity as a function of price.

14:13  
You move stuff around.

14:14  
So I take the price to the side of the equation and I'm going to get negative becomes a positive and I'm moving quantity over to decided the equation and it's going to become negative.

14:28  
OK, further simplify this.

14:31  
This is going to be 20 -, 2 Q.

14:34  
OK, so I could write this equation or sometimes will give you this equation as quantity as a function of price, but sometimes you need to switch it and to use it and you can just rewrite it as price as a function of quantity.

14:46  
This is where a lot of the algebraic mistakes happen.

14:48  
It's very important, especially for multiple choice, because you only get to choose one of the options.

14:53  
So please make sure you get comfortable with doing this and practices a lot.

14:57  
OK, now this is how it's presented to you and you need to work with this.

15:01  
One of the important things you're gonna need to work with this is graphing this.

15:05  
OK?

15:06  
You are going to have to know how to graph this.

15:08  
And this is it should be something you've done in high school.

15:10  
If you've done this a long time ago, you're not fully comfortable with it.

15:13  
Please practice this now.

15:14  
It's going to be important.

15:15  
We're going to use this pretty much every module.

15:18  
OK, so if I'm given data like this, what do I do?

15:20  
The first thing you do is you find the intercepts, right?

15:23  
So what you're saying is basically, if the quantity is 0, what is the price going to be?

15:29  
Or if the price is 0, what's the quantity going to be?

15:33  
If the price is 0, the quantity will be 10.

15:41  
So I know that my intercept here let's say will be 10.

15:47  
OK, if the quantity is 0, then I'm working to find price.

15:52  
I've got to take the same equation, work it around to get a price of 20.

16:09  
OK, once I have those intercepts, you join them with a straight line because you have information.

16:15  
That's what continuous data is.

16:16  
It's saying, I don't know before what was in between here, but with continuous information, I know exactly what it is.

16:22  
I know exactly what the quantity is for a price of 0.0021.

16:27  
OK, I have all of that information and you can approximate that and show that on a graph.

16:31  
You need to know how to do this because we're going to ask you, for example, to calculate areas under the curve like this.

16:36  
And you really need to be able to do it.

16:38  
OK, so if this is rusty, fix it now.

16:43  
So here's what we've done so far.

16:44  
We've talked a little bit about the competitive market assumptions.

16:46  
They're going to seem weird.

16:47  
You're going to say, oh, economics is not so great because we have these crazy assumptions.

16:51  
We will agree with you, but we'll say it's a starting point.

16:54  
It helps us think through the economic intuition, especially for people like you, starting new.

16:58  
Build your economic intuition and then introduce more realism.

17:01  
But please keep that in mind because all our predictions are tied to our assumptions.

17:05  
We're going to focus on the 1st 2 price takers.

17:08  
Very difficult for some students, especially for firms, because they're like firm set prices in a perfectly competitive market.

17:15  
They do not set prices, they react to prices.

17:19  
And please get used to the one-on-one jargon, OK?

17:21  
It is very useful for multiple choice questions.

17:24  
With multiple choice questions we have a little space.

17:25  
We have lots of information to communicate.

17:27  
We need you to communicate lots of information.

17:29  
So that's where we.