**W1 V2 OC**

0:10  
In this video, we're going to talk about why we use opportunity costs.

0:14  
We're going to show you with some examples how to calculate opportunity costs and pointing out some areas that you may want to watch out for.

0:20  
And then the reason we build this is we can talk about what happens when something changes, right?

0:25  
So we'll talk about the factors that could change opportunity cost.

0:30  
OK.

0:30  
Now opportunity cost is going to be a lot of work.

0:34  
And then a lot of you come back to me at this point and say, I know I use opportunity cost, so why should I even bother calculating these things?

0:41  
It's not realistic.

0:43  
To which I'm going to give you this simple example, right?

0:45  
Pick your favorite restaurant, whatever it is, right, Their favorite lunch place.

0:50  
And suppose you enter a raffle and you win this free dinner, right.

0:53  
So are you going to use it?

0:56  
It's gonna be free.

0:57  
Instinctively you'll say sure.

1:00  
But you know, you should always read the fine print.

1:02  
And if you read the fine print, it's gonna tell you this thing can only be used on November 14th, right from 7:00 to 9:00 PM straight away, it starts to seem less attractive right now.

1:14  
Why?

1:15  
It's the same voucher as before.

1:16  
It's free.

1:17  
So if the only thing that mattered to you is the price, then you shouldn't be fazed by the fact that it can be used only on one day.

1:24  
What comes up in your mind when we say it can be used on in one day?

1:27  
You're going to say, well, I don't know what I'm going to be doing on that day, right?

1:30  
Maybe I have a midterm, or maybe it's the day Taylor Swift is coming into town, right.

1:34  
And you have tickets at that exact same date and time.

1:37  
Notice, alternatives are going to matter when you have to make your decision.

1:43  
So with that simple thing, even though you're not explicitly thinking about it, so you think you're not doing it, you're behaving as if all of your decisions are based on opportunity costs because you're thinking about the alternatives.

1:55  
OK.

1:56  
So with that in mind, let's talk about how we capture opportunity cost.

2:01  
It's going to be a little bit of work because while you do it intuitively, for us as economists to analyze your choice, we're going to have to put it in a structured way because otherwise, how do we talk about changes in which element changes and why?

2:14  
So I'm going to give you a preview of how we do this.

2:18  
But remember, why do we use opportunity cost?

2:21  
Because we have a scarce amount of resources, many things to allocate them for.

2:25  
And so our question is, how do I allocate this?

2:28  
Anytime I put it to one use, if I go to the free dinner, I'm giving up my ticket to see Taylor Swift, and that's an important foregone opportunity that I should be keeping in my mind when I make a decision.

2:43  
OK.

2:43  
So when you look at the term opportunity cost, it looks vague.

2:47  
And so a lot of you will first come up with this definition or you'll see it in the textbook where it says the opportunity cost of an action is the net value expressed in dollars.

2:55  
And the next best alternative at this point, you shut down because you're like, oh, God, what is this?

2:59  
Right.

3:00  
I would encourage you to just ignore that, OK, And focus on what exactly opportunity cost means.

3:06  
If you do that, then you're golden.

3:07  
You're not going to make mistakes and you're not going to be memorizing stuff because that's the easiest way to to not be a good economist and forget about that.

3:15  
Do badly on the exam.

3:16  
OK.

3:16  
So let's talk about what it is.

3:19  
First, here's the information I need when I'm calculating opportunity cost.

3:23  
If I'm thinking about going for dinner in this case it will be the opportunity cost of action aid, right?

3:30  
What are the resources I need?

3:32  
So typically if I'm going for dinner, I would need to pay for it, right?

3:37  
And minimum I need to do it.

3:39  
But now in this example with the free dinner, I don't even need to pay for it.

3:42  
So is it free?

3:43  
But not really, because one of the resources I'm going to use is time, right?

3:48  
7:00 to 9:00 PM, I'm going to have to show up at the restaurant and get my free dinner.

3:52  
So that's one big difference between economists and accountants.

3:56  
For example, accountants will focus on the explicit cost or the price that you pay.

4:00  
Economists will focus on all of the resources needed, and that includes things like time.

4:06  
Second, if I don't use the resource for this dinner, what is my next best alternative?

4:13  
There are many things that I can do with my time.

4:15  
So you can think about all of those things that I do with my time, but you pick the next best use of those resources.

4:22  
Let's call that Opportunity Base.

4:23  
For example, I'm going to see Taylor Swift, right?

4:26  
The last thing I do need, however, is how much do I care about Taylor Swift?

4:31  
Right.

4:32  
So what is the benefit I get from going to a Taylor Swift concerts, right?

4:36  
And what's the resources that I need?

4:40  
Because Taylor Swift concert doesn't come for free, right?

4:42  
At minimum I need to purchase a ticket.

4:45  
Also need time, right?

4:46  
So it's the same resource that I need for the dinner that now the next best use of that time is going for a Taylor Swift concert, which also uses time.

4:56  
Once we have these three pieces of information, we can put them together to then calculate opportunity cost.

5:05  
Going to do this in the following way, I'm going to have to write a lot of stuff on the slides, and when I write a lot of stuff on the slides, it's really hard for me to keep track of all of the things.

5:15  
So I'm going to use a lot of shortcuts.

5:17  
So let me just explain the shortcuts that I'm going to be use using as we go down.

5:21  
OK, so action A is what I want to do, go for dinner or not?

5:26  
And the next example is going to be buy a book or not.

5:29  
OK, Action B is going to be the next best resource.

5:34  
Sometimes I'm going to have to figure out what that is.

5:36  
What's the next book that I'm going to be buying?

5:38  
Right?

5:39  
Next best book?

5:40  
Sometimes I've already decided it's this book or it's already decided that I'm going to the Taylor Swift concert.

5:45  
Everything should be expressed in dollars for the reason we talked about in the previous video.

5:50  
OK.

5:51  
Then I'm going to say that the opportunity cost of A, which is going for dinner will be the resources that I'm going to use for a subscript is going to be the, the thing that I'm using or the action that I'm thinking of.

6:08  
So that's what I'm doing.

6:09  
That's the cost of going to dinner is the time that I'm going to be using money, whatever the resources are.

6:15  
But I'm also giving up the chance to go to Taylor Swift, right?

6:22  
And that's how much I express the value in dollars, right?

6:26  
Again, everything has to be expressed in dollars, otherwise I cannot compute a number here.

6:29  
But Taylor Swift is not free, so I'm going to have to subtract out the resources used for B.

6:37  
And that's that's it, right?

6:38  
That's pretty much our fundamental equation.

6:40  
And your job with every single example that we do is to figure out what the resources are, what the values are, plug in those numbers and compute it.

6:49  
It can be tricky.

6:50  
So we're going to think about it using very simple examples.

6:55  
OK, the problems that has many more, we'll do some in class and tutorial.

6:59  
But the more you try this with the real life decisions you're making outside, the better it's going to be for you.

7:06  
So here's a very simple scenario, right You want to buy a book, you're going to walk into Indigo and you've got three options.

7:13  
OK, Pride and Prejudice, Scripts, Froth and A Suitable Boy.

7:16  
And my job is to help you figure out the opportunity cost and how to calculate it for each one of those options.

7:24  
So we're going to do a couple of different combinations just so you can kind of see with the same example as we do it.

7:30  
But let's start off with the simplest possible thing.

7:33  
Each one of those books costs exactly the same in terms of a price.

7:38  
OK.

7:38  
So if you're asking me what resource I use for each one of these books and the only resource I need is cash, Really strong assumption.

7:47  
Because if you look physically at these books, Pride and Prejudice is a little thin book suitable boys.

7:52  
Pretty thick right?

7:53  
So there could be other resources that I'm not accounting for which I am keeping in mind when I'm buying this book for example time, right?

8:03  
I'm going to talk about that in another example.

8:05  
But for this I'm going to make an assumption.

8:08  
Always check your assumptions that the only resource I'm using is money to pay for this book.

8:13  
OK, so now for each one of these, I've got to calculate the opportunity cost.

8:17  
So let's follow the principle.

8:19  
If I'm thinking about Pride and Prejudice, OK, what are the resources I'm using?

8:24  
Because I've assumed that the only resource I'm using is cash.

8:27  
I'm going to use $20 worth of cash, the next best alternative.

8:31  
So apart from Pride and Prejudice, I'm going to eliminate Pride and Prejudice for now.

8:35  
I'm going to scan all of the other books and I'm going to say, well, grapes are brought this $25.00 of value, suitable boys $35.00 of value.

8:44  
Guess what?

8:44  
Suitable boy is a better, the best alternative.

8:48  
OK, so I'm going to pick my next best alternative, which is a suitable boy.

8:55  
And that's the value of that Suitable Boy is not Free cost me $20.00 because again, I'm assuming my only resource is cash.

9:05  
So when I do this calculation, I'm going to get that The opportunity cost to Pride and Prejudice is $35.

9:12  
This and this will cancel out.

9:14  
And that's what it's going to be.

9:15  
Same calculation.

9:16  
Let's do it for grapes of Roth.

9:18  
Grapes of Roth.

9:19  
The resources I'm using $20.00 of cash.

9:23  
Next best alternative.

9:24  
So let me cancel this out.

9:26  
Let me look at the other alternatives.

9:28  
Suitable Boys were 35 to me.

9:30  
Pride and Prejudice is worth 40 to me.

9:31  
Then best is Pride and Prejudice.

9:36  
$40 worth of value, not free, $20.

9:40  
Opportunity cost is $40.

9:42  
I'm going to leave the last one for you to calculate, but you can kind of see if you're focusing on that structure.

9:48  
Thinking resources next first alternative minus the resources that that uses.

9:52  
It's pretty straightforward to do this.

9:54  
But remember the big assumption that we're making that the only resource we're using here is cash.

10:01  
Let's do the same example here.

10:03  
I want you to pause the video right here and try and do it for yourself.

10:07  
I made it simpler in that I've eliminated one book.

10:09  
I've narrowed it down to Pride and Prejudice and Suitable Boy.

10:12  
But what I have changed, however, is the fact that they are different prices.

10:16  
So please pause the video here and see if you can calculate this.

10:21  
OK.

10:21  
I hope you have your numbers ready.

10:23  
Let's calculate them together.

10:25  
So again, what are the resources I'm using?

10:28  
I've got to take a step in here, so I'm assuming that the only resource is cash.

10:33  
I'm going to change that later on, but for now the only resource is cash.

10:37  
So if I want to buy Pride and Prejudice, I'm going to have to use $20.00 of cash, no other resource because that's the only resource.

10:46  
I'm assuming I'm giving up the next best alternative, which is reading A Suitable Boy for $40.

10:54  
But A Suitable Boy only cost $15.00, right?

10:58  
So in this sense, my opportunity cost is going to be the $40.00 of value that I'm giving up by choosing Pride and Prejudice.

11:09  
I would have gotten this $40 if I read A Suitable Boy, but I also get five additional dollars free in my pocket that I could use for something else, right?

11:20  
So notice here when we have different resources, we there has to be accounted for in the opportunity cost and you're going to miss that if you're just following some basic formula structured way.

11:31  
Let's think about it for Suitable Boy.

11:33  
Actually, you know what?

11:34  
I'm going to have you pause it here, try and come back.

11:38  
Let's do it together.

11:40  
OK, so a suitable Boy $15.00 worth of cash, $40 worth of benefit given up by not reading Pride and Prejudice, but Pride and Prejudice cost me more dollars, cost me $20.00, right?

11:57  
So I'm going to put that in here.

12:01  
Now even though I'm giving up the same benefit of $40 because the books both I treat as equivalent, they give me the same benefit.

12:10  
I'm actually losing $5 in here or my opportunity cost is lowered by $5.00 because a suitable boy is cheaper compared to the next best alternative, which in this case would be Pride and Prejudice.

12:28  
Please try these with different numbers.

12:29  
Think about these for examples that you do because this can be confusing.

12:33  
The devil is in the details here, especially for multiple choice questions.

12:36  
OK, so try these by yourself.

12:40  
Now let's talk about another resource.

12:43  
So I'm going to think about something that's free, right?

12:46  
You think about a book.

12:47  
So it's free books.

12:48  
And so you don't worry about paying for anything.

12:50  
That's the assumption that I'm going to make here.

12:52  
They're all free, right.

12:54  
However, there is a difference in the time that it takes to read these books.

12:58  
So how do we work with resources that are not kind of dollar resources in terms of like prices when we have to evaluate them?

13:05  
So Pride and Prejudice takes me resources of five hours.

13:12  
We're going to have to think about how to convert into dollar, but for that's for now.

13:15  
That's the resource that I'm using.

13:17  
I'm giving up the chance to read Suitable Boy, which would be $30.

13:24  
OK, but A Suitable Boy is not free.

13:27  
It's a really thick book.

13:28  
It cost me $15.00 worth of my time in order to read this book.

13:35  
So if I'm going to subtract this out, I'm going to get Pride and Prejudice means to reading Pride and Prejudice means giving up $30.00 worth of benefit of Suitable Boy.

13:47  
But also I save 10 hours of time by reading Pride and Prejudice because the Suitable Boy is substantially longer.

13:58  
Now so far we've kind of getting away with hours and hours, but I have to make a decision about how to value these hours.

14:04  
So now at this point, because I have 10 hours here, I'm going to think about how to convert this into dollar values.

14:15  
All right, What's the dollar value of my time?

14:17  
Here is typically where you would look for other things that you would do with that time.

14:20  
For example, working for a job, you're giving up a wage to read the book, right?

14:24  
Or sitting on the beach or whatever it is hanging out with your friends.

14:27  
You've got to now take the additional step of calculating something that may not have a direct dollar value and express it in dollars.

14:35  
And I want you to do the same thing here for Suitable Boy and see if it makes sense to you and think about how you would do convert your hours into values.

14:46  
OK, we're going back now to the assumption that there's only cash.

14:51  
Please look at the problems that it has.

14:53  
More complicated stuff.

14:54  
But this is just for you to kind of intuitively work through this.

14:57  
But now I'm changing things in here, OK, same benefits, different prices.

15:02  
So, Pride and Prejudice $20 worth of resource plus $40 worth of benefit from Suitable Boy given up.

15:14  
But Suitable Boy is free, right?

15:16  
And notice now that it's going to increase the opportunity cost of buying Pride and Prejudice because the alternative, the next best alternative, is better because the price is free.

15:31  
OK, so play around with these, Think about different resources, Include them separately, include them together the same time, everything that you do.

15:39  
Pay attention to your assumptions.

15:42  
OK?

15:42  
What you're including, what you're leaving out has important implications for opportunity cost, which then has important implications for your choices.

15:50  
So let's recap.

15:51  
The opportunity cost for reading Pride and Prejudice will be the dollar value of all of the resources used to read Pride and Prejudice.

16:09  
Sometimes that's cash, sometimes that's time, sometimes it's booked.

16:13  
OK.

16:13  
Plus the fact that we're giving up the value from the next best alternative, which here I'm going to assume is a suitable boy, right?

16:20  
Tell me how much you valuate.

16:21  
Everyone could have different valuations.

16:22  
I don't care that valuations are different.

16:24  
I just want your valuation for the person who's making the decision.

16:27  
And then tell me the dollar value of the resources.

16:30  
I'm just putting RFO resources for Suitable Boy structure thinking you can handle anything we do or anything we throw at you with this type of question.

16:40  
Now the reason we do that here is because now we can talk about what happens when opportunity cost changes.

16:47  
So something changes in the environment.

16:49  
How do we think about opportunity cost changing if I've done this in a structured way?

16:53  
So opportunity cost is the price and the time and the value of the next best alternative.

16:59  
I can start thinking about what happens when those individual things change.

17:02  
So for example, when the time taken to read Pride and Prejudice goes up, I don't know, a new edition comes up.

17:13  
They find 50,000 extra pages for the Jane Austen book, and now it takes me longer to read this Pride and Prejudice book.

17:20  
In that case, this part of the opportunity cost is going to go up.

17:24  
And we can start thinking about what does this mean for the opportunity cost of Pride and Prejudice?

17:28  
Because the value of the resources is increasing, it's going to take more resources to read Pride and Prejudice.

17:35  
And even though the price of Pride and Prejudice has not changed, your opportunity cost is going to increase because you're using more resources to read Pride and Prejudice.

17:45  
OK, alternative, the time used for the suitable boy goes up, right?

17:50  
In that case.

17:51  
Here the time used for a Suitable Boy goes up.

17:54  
That's actually good for Pride and Prejudice because it makes the next best alternative less valuable, right?

18:03  
Suitable Boy is great.

18:04  
I read the book, but now it takes me much longer.

18:06  
The next best alternative is less attractive, less attractiveness.

18:10  
Best alternative means that the opportunity cost of Pride and Prejudice is lower.

18:18  
OK, write down the equation, look at the things separately and think through it logically to make sure that it makes sense.

18:24  
It's all logic.

18:25  
It is not memorization.

18:26  
Please think through it logically.

18:29  
OK, so let's take a step back here and think about some lessons that we have learnt through this process.

18:36  
Opportunity cost sometimes are included include price right?

18:44  
Why?

18:45  
Because it is a resource that we use and so it has to be in the equation.

18:48  
But if the next best alternative is exactly the same.

18:51  
So if you think about that Suitable Boy and Pride and Prejudice example we did, I had $20.00 for Pride and Prejudice.

18:58  
I had $20.00 for A Suitable Boy and then it ended up cancelling and so it seemed like it was not there, right?

19:05  
But it actually was there in the calculations.

19:08  
OK, so it may sometimes not be in the opportunity cost because it's cancelling out, but in your general thinking it's there, so please don't assume that it always has to be there or it doesn't have to be there.

19:20  
Structured way will help you think about whether it cancels out or not.

19:25  
OK, Opportunity cost in general may include costs that are not visible to an accountant.

19:32  
So an accountant just cares about things that it can get.

19:35  
They can get a receipt for Economist.

19:37  
Think about all resources and some resources.

19:39  
For example, time, right.

19:43  
You don't get a receipt for right.

19:46  
So it can, depending on the assumptions we made.

19:49  
We make, include resources which have costs that are not visible with the receipt, but we need to have them in there.

19:58  
What if they have the same amount of those implicit resources?

20:01  
There's this time, same time for each one of those, it's going to cancel out in the same way, so it's going to seem like we forgot to include it in there.

20:07  
But actually they just cancelled out.

20:09  
Doesn't mean that they were not there.

20:11  
Cancelling out means that they were exactly the same.

20:15  
OK, now I've thrown a lot of stuff in here, so if you want to take a break and pause the video, process it and come back, it would be a good time.

20:24  
But what I want to leave you with at the end is a little bit of A twist on this thinking.

20:29  
OK, notice what's been missing?

20:31  
So far I've been thinking about it as discrete books, right?

20:34  
Either read Pride and Prejudice or you read A Suitable Boy.

20:38  
There's it's all or nothing.

20:41  
Sometimes some of the decisions we make have a quantity dimension.

20:45  
OK, so lunch on either lunch or not, you can kind of say, fine, I go out, I spend $15 on lunch or not, right.

20:51  
But where do I get those $15?

20:53  
What's the next best alternative use of those $15?

20:56  
Sometimes it's simple as a lunch I could have bought somewhere else.

20:59  
Sometimes it can have a quantity dimension in here.

21:02  
So for example, I have a limited weekly budget, so if I want to go out for an extra lunch, I've got to give up 3 cups of coffee because you know, that's where the only way I'm going to get those extra $15.00, right?

21:13  
There's no other way that I can get those things.

21:15  
That's the next best alternative for me spending my money on.

21:19  
I buy a lot of cups of coffee.

21:22  
Which 3 cups Am I going to give up?

21:24  
Alright?

21:24  
Am I going to give up the most valuable cups of coffee?

21:27  
So to me, when I wake up in the morning I must have my cup of coffee.

21:30  
Is that the coffee that I'm going to be giving up when I want to go for lunch?

21:34  
Or is it the coffee that I have at the end of the day each day?

21:37  
I shouldn't be drinking coffee, but I do.

21:40  
And that's not as valuable.

21:42  
But I do it because I like it, right?

21:44  
So if you ask me to give up 3 cups of coffee, am I gonna give up the most valuable or the least valuable that I have?

21:52  
OK.

21:52  
And that's when this, what we call A twist, comes in.

21:55  
OK, because so far we've been focusing on the next best alternative, Next best alternative.

22:01  
But if I have to cut more than one unit, then what I am doing is I'm giving up the lowest value coffees first.

22:09  
You can take all the coffees that I drink at the end of the evening.

22:12  
I'm happy to give them up, but you will have to pry their first cup of coffee for my cold, dead hands, right?

22:16  
There's no way I'm giving that up because those are the most valuable.

22:19  
Pay attention to this.

22:20  
This is going to be important for us, especially when we get into demand and think about multiple units.

22:26  
So put that part in the back of your head and pay attention to this.

22:30  
But sometimes when there's a quantity of dimension, it's a little bit more tricky than the simple examples that we've done so far.

22:39  
OK, so opportunity cost.

22:41  
To summarize, if I want to take action, AI got to think about all of the resources, right?

22:46  
I got to think about the next best use of those resources, whatever those option is option B.

22:52  
And I got to think about the resources that the next best alternative uses.

22:57  
I've got to put everything in dollar values because otherwise it makes no sense to compare them.

23:02  
And then if you ask me, oh, stuff is changing in the environment, how does this change?

23:06  
No problem.

23:07  
I think about each one of those little elements and then I can focus on how I can make predictions about how your opportunity cost changes.

23:14  
The only thing I would say, please pay close attention to, sometimes you can get caught up by the negative sign in here, right?

23:21  
So just pay attention to that to make the right predictions in there.