

Chapter 2: Economic Activities: Producing and Trading

Handout 2: Law of Increasing Opportunity Cost

Opportunity Cost: Opportunity cost refers to the next best alternative forgone of an action. For example, suppose you have TK. 500 in your pocket. You have three options to spend this money: (1) Buy a new outfit, (2) Have dinner with friends and (3) Watch a movie at the theater. Suppose you rank your choices according to preference:

Activity	Rank
New Outfit	1 (best option)
Dinner with friends	2 (second best option)
Watching a movie	3 (third best option)

If you choose to go with your best option, i.e. if you choose to spend TK. 500 to buy a new outfit, then your next best alternative (i.e. your second best option) becomes your opportunity cost. This means having dinner with friends becomes the opportunity cost of purchasing a new outfit with your TK. 500.

Consider Country XYZ which produces only two types of goods – Product A and Product B. The country has limited factors of production, i.e. it has limited land, labor, capital and entrepreneurship to produce the two goods. Suppose the government of Country XYZ has divided the limited resources between the production of Product A and Product B. For example, suppose Country XYZ currently produces 50 units of Product A and 50 units of Product B. If the government now decides to produce more of Product A, it has to take away resources from the production of Product B and use it to produce more of Product A. Suppose we increase production of Product A to 60 units and this causes the production of Product B to fall to 40 units. Therefore, if we produce more Product A (10 more units of Product A) then the opportunity cost becomes the amount of Product B we have to forgo (10 units of Product B is forgone) to produce Product A.

Law of Increasing Opportunity Cost:

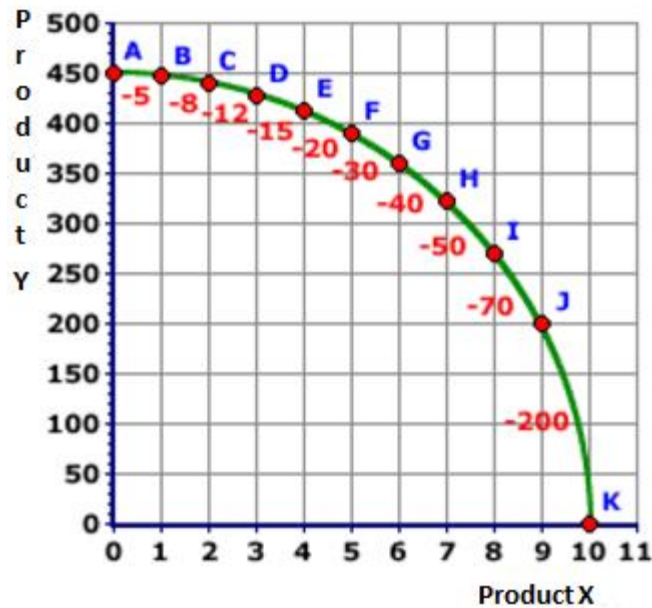
The law of increasing opportunity costs states that as you increase production of one good, the opportunity cost to produce an additional good will increase. The idea of Increasing Opportunity Cost can be illustrated using a Bowed-Out Production Possibilities Frontier.

Consider the following production possibilities schedule for Country QRS:

Combination or Bundle	Product X		Product Y		Opportunity Cost
A	0		450		
B	1		445		
C	2		437		
D	3		425		
E	4		410		
F	5		390		
G	6		360		
H	7		320		
I	8		270		
J	9		200		
K	10		0		

As we can see from the table above, with every 1 unit increase in Product X, we have to forgo more and more units of Product Y. This causes the Production Possibilities Frontier to bow out as shown below:

Production Possibilities Curve



Why are we giving up more and more units of Product Y with every unit increase in Product X? The answer is Law of Increasing Opportunity Cost. To understand this concept, we have to assume that resources allocated are technically efficient.

When the first unit of Product X is produced, we remove resources from production of Product Y that are BEST suited to the production of Product X and LEAST suited to the production of Product Y. For example, suppose that Country QRS has only 10 labor. At first, these 10 labor produce 0 units of Product X and 450 units of Product Y (refer to point A). The country is thinking of producing X which requires one labor for each unit produced. When we increase production of Product X by 1 unit, we have to take 1 labor from production of Product Y. This reduced production of Product Y to 445 units. How do we know which of the 10 labors to remove from production of Y to produce Product X? We start by removing the labor who is LEAST suited to produce Y and best suited to product X (i.e. we select the labor who does not know how to produce Y very well but is an expert in producing X). Like this we keep continuing to remove more labor from production of Y and using them for production of X.

Example: Consider this hypothetical situation where the 10 employees of Country QRS are ranked according to how good they are at producing Y. Their performance is based on how many units of Y they can produce per hour.

Serial No.	Labor	Best suited to production of Y (rank)	Production of Y per hour
1	John	1	200
2	Jill	2	70
3	Jane	3	50
4	Jacob	4	40
5	Joseph	5	30
6	Jamie	6	20
7	Jackie	7	15
8	Julia	8	12
9	Jessica	9	8
10	Jack	10	5

We see that at the very bottom of the list is Jack (meaning he is least suited to produce Y). So if we increase the production of X by one unit, the first labor we will remove from the production of Y to the production of X will be Jack. If we increase production of X by one more unit (i.e. if we now produce 2 units of X), then the second person who will be

removed from production of Y will be Jessica. Like this as production of X increases, we will keep removing individuals who are least suited to producing Y and employ them to produce X. However, as we keep increasing production of X we are gradually removing labor who are good at producing Y (such as Jane, Jill and John). Since Jane, Jill and John can produce more Y per hour, as we keep removing them to produce more X, we are giving up the production of more and more Y.

The fact that we remove more and more expert individuals from the Production of Y towards the Production of X means that we forgo larger and larger amount of Y that could be produced. Therefore, as production of X increases, and as we keep removing more and more expert labor from production of Y, our opportunity cost in terms of Y forgone increases. This is what we call Law of Increasing Opportunity Costs. Countries that demonstrate increasing opportunity cost have a bowed-out PPF.