

OPPORTUNITY COST AND COMPARATIVE ADVANTAGE

Model: a simplified representation of reality

- presents assumptions and conclusions clearly
- assumptions can be questioned (usually when believed to be unrealistic)
- conclusions can be questioned (usually when believed to be mathematically wrong)
 - these allow for more constructive exchange of ideas

PlayEconomics becomes a representation of a simple economy

Assumptions:

1. Only two possible activities
 2. Only two individuals
 - these form the 'magic four numbers'
 3. When trading there are:
 - No transactions costs (negotiation/transportation costs)
 - No other barriers (import quotas, tariffs)
- originally conceived by David Ricardo 1817
 - labelled by economist as 'magic four numbers' due to its simplicity

Lionel Robbins in 1930 defined economics as the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.

In a One Agent Economy:

Assume: Only two productive activities available

- **productivity:** determined by the amount of resources required to perform a productive activity
- i.e. for Alberto collecting bananas (1hr for 1kg) or catching rabbits (2hrs for 1kg)
- performing an activity involves use of resources
 - 1kg bananas takes 1 hour to collect
 - 1kg of rabbit takes 2 hours to catch

Assume: Resources are scarce

- economies operated in a constrained environment; financial constraints, time constraints etc
- daily productivity is important as time is a limited factor
- i.e. Alberto's time constrain: 24 hours of the day - 8 hours sleeps = leaves 16 hours of available time

Step One: Extreme Scenarios		Step Two: Intermediary Scenarios	
16h collecting bananas	<ul style="list-style-type: none"> - 16kg bananas ($16h \times (1kg/1hr)$) - 0kg rabbit 		<ul style="list-style-type: none"> - $8h \times (1kg/1hr) = 8kg$ bananas - $8h \times (1kg/2hr) = 4kg$
16h catching rabbits	<ul style="list-style-type: none"> - 0kg banana - 8kg rabbit ($16h \times (1kg/2h)$) 	16h collecting bananas AND rabbits	<ul style="list-style-type: none"> - $4h \times (1kg/1h) = 4kg$ - $12h \times (1kg/2h) = 6kg$
			<ul style="list-style-type: none"> - $1h \times (1kg/1h) = 1kg$ bananas - $15h \times (1kg/2h) = 7.5kg$ rabbit
<small>* From this the production possibility curve can be produced</small>			

Production Possibility Curve (PPC):

1. captures all maximum output possibilities for two or more goods, given the set of inputs are used to their **maximum efficiency**
2. the boundary between those **combinations of g/s** that can be produced and those that cannot
3. represents the production capacity of an economy for the two goods that it is representing

Efficient Production Point: represents a combination of goods for which currently available resources do not allow an increase in the production of one good without a reduction in the production of the other
- note: all points on the PPC are efficient points

Inefficient Production Point: represents a combination of goods for which currently available resources allow an increase in the production of one good without a reduction in the production of the other
- note: all points below and left to the PPC are inefficient

Attainable Production Point: represents any combination of goods that can be produced with the currently available resources

- note: all points on the PPC or below and to the left (i.e inside) of the PPC are attainable

Unattainable Production Point: represents any combination of goods that cannot be produced with the currently available resources

- note: all the points that lie outside of the PPC are unattainable

In a Two Agent Economy:

Time to Get		Opportunity Cost of	
	1kg of Bananas		1kg of Rabbit
Agent 1 (Alberto)	1 hour	2 hours	Agent 1 (Alberto)
Agent 2 (Leo)	4 hours	4 hours	Agent 2 (Leo)
* Productivities expressed in terms of time required		* Productivities expressed in terms of opportunity cost	

Absolute Advantage: where a subject with a given level of resources can produce more output than another subject with the same level of resources

- Adam Smith in *The Wealth of Nations* (1776)

i.e. Alberto has absolute advantage in both the production of bananas and rabbit as less time required

Opportunity Cost of a given action is the value of the next best alternative to that particular action

- the opportunity cost of activity 1 is found by activity 2 divided by activity 1 in terms of activity 2

OC bananas = loss in rabbit/gain in bananas

- OC of banana production by Alberto is $0.5/1 = 0.5\text{kg of rabbit}$
- OC of banana production by Leo is $0.25/0.25 = 1\text{kg of rabbit}$

OC rabbit: loss in bananas/gain in rabbit

- OC of rabbit production by Alberto is $1/0.5 = 2\text{kg of banana}$

- OC of rabbit production by Leo is $0.25/0.25 = 1\text{kg of banana}$

Comparative Advantage: production at the lowest opportunity cost; where one subject can produce a good with greater comparative efficiency (as measured by a lower opportunity cost of production)

- David Ricardo in *Principals of Economics and Taxation (1817)*

Principal of Comparative Advantage:

everyone is better off if each agent specialises in the activities for which they have a comparative advantage

- the gains from specialisation grow larger as the difference in opportunity cost increases
- i.e. Both Alberto and Leo are better off when they specialise according to their comparative advantage

	No Specialisation		Specialisation	
	Bananas	Rabbit	Bananas	Rabbit
Agent 1 (Alberto)	12	2	16	0
Agent 2 (Leo)	3	2	0	4
Total	15	3	16	4

*Gains from specialisation.

Specialisation:

- as exemplified in components of everyday living e.g. brushing teeth, lighting, modern economies are highly specialised

Cost of Trade:

- Alberto specialises in bananas - will want to sell to Leo at:
 - price bananas $>$ Alberto's cost of collecting bananas OR
 - price bananas $>$ Alberto's opportunity cost bananas ($= 0.5\text{kg of rabbit}$)
- Leo specialises in rabbits - will want bananas as long as:
 - price bananas $<$ Leo's cost of collecting bananas himself OR
 - price bananas $<$ Leo's opportunity cost bananas ($= 1\text{kg of rabbit}$)

therefore: $0.5\text{kg rabbit} < \text{price bananas} < 1\text{kg rabbit}$

Principal of Increasing Opportunity Cost (Low Hanging Fruit):

- in the process of **increasing the production** of any good, first employ those resources with the lowest opportunity cost
- only once these are exhausted turn to resources with higher cost

Economy-Wide PPC

- this PPC is closely related to the resources available in the economy
- main resources that drive economic growth are capital, labour and technology; depicted as a shift in the PPC

Shift in PPC

1. an increase in infrastructure (factories, equipment, etc)
2. an increase in population; therefore labour force
3. advancements in knowledge and technology (education, R&D, IT and communications tech)