

= Robinson Crusoe economy =

A Robinson Crusoe economy is a simple framework used to study some fundamental issues in economics . It assumes an economy with one consumer , one producer and two goods . The title " Robinson Crusoe " is a reference to the novel of the same name authored by Daniel Defoe in 1719 .

As a thought experiment in economics , many international trade economists have found this simplified and idealized version of the story important due to its ability to simplify the complexities of the real world . The implicit assumption is that the study of a one agent economy will provide useful insights into the functioning of a real world economy with many economic agents . This article pertains to the study of consumer behaviour , producer behaviour and equilibrium as a part of microeconomics . In other fields of economics , the Robinson Crusoe economy framework is used for essentially the same thing . For example , in public finance the Robinson Crusoe economy is used to study the various types of public goods and certain aspects of collective benefits . It is used in growth economics to develop growth models for underdeveloped or developing countries to embark upon a steady growth path using techniques of savings and investment .

In the Robinson Crusoe economy , there is only one individual ? Robinson Crusoe himself . He acts both as a producer to maximise profits , as well as consumer to maximise his utility . The possibility of trade can be introduced by adding another person to the economy . This person is Crusoe 's friend , Man Friday . Although in the novel he plays the role of Crusoe 's servant , in the Robinson Crusoe economy he is considered as another actor with equal decision making abilities as Crusoe . Along with this , conditions of Pareto Efficiency can be analysed by bringing in the concept of the Edgeworth box .

The basic assumptions of the Robinson Crusoe economy are as follows :

The island is cut off from the rest of the world (and hence cannot trade)

There is only a single economic agent (Crusoe himself)

All commodities on the island have to be produced or found from existing stocks

= = Framework = =

Robinson Crusoe is assumed to be shipwrecked on a deserted island . Similar to the choices that households (suppliers of labour) face , Crusoe has only two activities to participate in ? earn income or pass his time in leisure .

The income generating activity in this case is gathering coconuts . As usual , the more time he spends in leisure , the less food he has to eat , and conversely , the more time he spends gathering coconuts , the less time he has for leisure . This is depicted in figure 1 .

= = Production function and indifference curves = =

Crusoe 's indifference curves depict his preferences for leisure and coconuts while the production function depicts the technological relationship between how much he works and how many coconuts he gathers . If the axes depicting coconut collection and leisure are reversed and plotted with Crusoe 's indifference map and production function , figure 2 can be drawn :

The production function is concave in two dimensions and quasi @-@ convex in three dimensions . This means that the longer Robinson works , the more coconuts he will be able to gather . But due to diminishing marginal returns of labour , the additional number of coconuts he gets from every additional hour of labour is declining .

The point at which Crusoe will reach an equilibrium between the number of hours he works and relaxes can be found out when the highest indifference curve is tangent to the production function . This will be Crusoe 's most preferred point provided the technology constraint is given and cannot be changed . At this equilibrium point , the slope of the highest indifference curve must equal the slope of the production function .

Recall that the Marginal rate of substitution is the rate at which a consumer is ready to give up one

good in exchange for another good while maintaining the same level of utility . Additionally , an input 's marginal product is the extra output that can be produced by using one more unit of the input , assuming that the quantities of no other inputs to production change . Then ,