

1. Details of Module and its structure

Module Detail	
Subject Name	Economics
Course Name	Economics 03 (Class XII, Semester - 1)
Module Name/Title	Micro economics
Module Id	leec_10101
Pre-requisites	Knowledge about basic economic terms
Objectives	<p>After going through this lesson, the learners will be able to understand the following:</p> <ul style="list-style-type: none">• The central problems of an economy• Production Possibility Frontier• Efficient and Inefficient Production• Types of Economy
Keywords	Microeconomics, Production Possibility Frontier

2. Development Team

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1. Introduction

In this module, we are going to study what an economy means, types of economies, the economic problems faced by them and how to solve them.

How do we define an Economy? An economy comprises all the activities related to production, consumption and distribution of goods and services.

Let us first understand what we mean by Goods and Services. Goods are the tangible objects while services are the intangible objects which satisfy human wants. Things like wheat, apples, chocolates, phones and cars are all goods. On the other hand, education, health, banking, transport etc. are examples of services.

2. Central Problem of an Economy

Human wants are unlimited. A good way to understand this is by listing *everything* that you want. How long is the list? With the resources that one has, all the wants of an individual cannot be fulfilled at any point of time. Therefore, human beings need to choose which wants to satisfy, and how to best use the available resources for satisfying those wants. One has to make informed choices about what to consume, and what not to consume. For example, you get Rs. 100 as pocket money every month. You love to consume ice cream, chocolate and biscuits. How should you spend ₹ 100, such that you get the 'most' out of your money? To get 'most' out of your money means getting maximum satisfaction by deciding what quantity of ice cream, chocolate and biscuits to buy and consume by spending ₹ 100 on the three things. The problem of economy at national level is similar, however it is easier to decide on how to get most out of your pocket money than to decide how a nation can produce most out of its limited resources. Things are much more complicated at national level. Any

nation has a limited amount of resources: land, labour, forests, minerals, water, machines and factories. A nation, therefore, needs to decide on how to allocate the resources towards production of different commodities so that its citizens are best off.

The basic economic problem arises because wants are unlimited, while the resources are limited. Thus, **Lionel Robbins**, a famous British economist of 20th century, defines Economics as a science that studies human behavior as a relationship between unlimited wants and limited resources that have alternative uses.

The limited resources and their alternative uses give rise to the problem of “**what to produce and in what quantities to produce**”. If resources were unlimited, the problem of what to produce or in what quantities to produce would not arise, because then the economy would be able to produce all goods that the economy needed, in whatever quantity it wanted. But since the resources are limited, the economy has to decide to produce certain goods in certain quantities. If all its resources are being used, a nation that wants to increase the production of one commodity can do so only by decreasing the production of some other commodity. This is known as “**problem of allocation of resources**”.

Another question which an economy faces is “**how to produce?** This is the question which is concerned with what technique is to be used. At any given point of time, the technology which is available to a nation is fixed. Typically, we think of technology as a set of techniques. A technique is the ratio in which inputs are combined to get an output. For example, cloth can be woven by power loom or by hand loom. Similarly, to irrigate a field, water can be drawn from a well by a pair of bullocks or by motor. In case of production using hand loom and bullocks, we are using labour intensive technique. This technique uses more labour per unit of capital, relative to other techniques for producing cloth or drawing water. While using power looms and motor, we are using capital intensive technique. The choice between the different methods to be used for production would depend on availability of these inputs and their prices. Generally the prices are low for those inputs which are available in abundance. Therefore, developing countries with large population, like India, are relatively more inclined towards using labour intensive techniques of production.

For whom are the goods to be produced? Who gets what share of the economy’s output? In the modern world, goods are produced for those who have the purchasing power to purchase those commodities. Think of your country as one giant mall. How much of all the goods that are available can you consume? Notice that you can only consume what you can buy. (Of course there are some things that may be free, if you are lucky!). The more your

income, the more you can buy, the greater will be your 'share' in buying your country's output.

So, the economy faces three major economic decisions:

- What to Produce
- How to Produce
- For whom to Produce

Each of these is a complex problem. A standard technique that economists use to deal with complex problems is to break it up into simpler, representative problems, and then see how they may be solved. Solutions to these simpler problems can then be generalized to throw light on the real (and so very complicated) world. One technique we use to analyze the what-to-produce problem is to imagine a world in which only two goods are being produced. We can then represent this problem on a two dimensional diagram, using a graph called a production possibility frontier.

3. Production Possibility Frontier (PPF)

A Production Possibility Frontier (PPF) is the curve representing the maximum quantities of two different goods which an economy can produce, given technology, and given the resources it has.

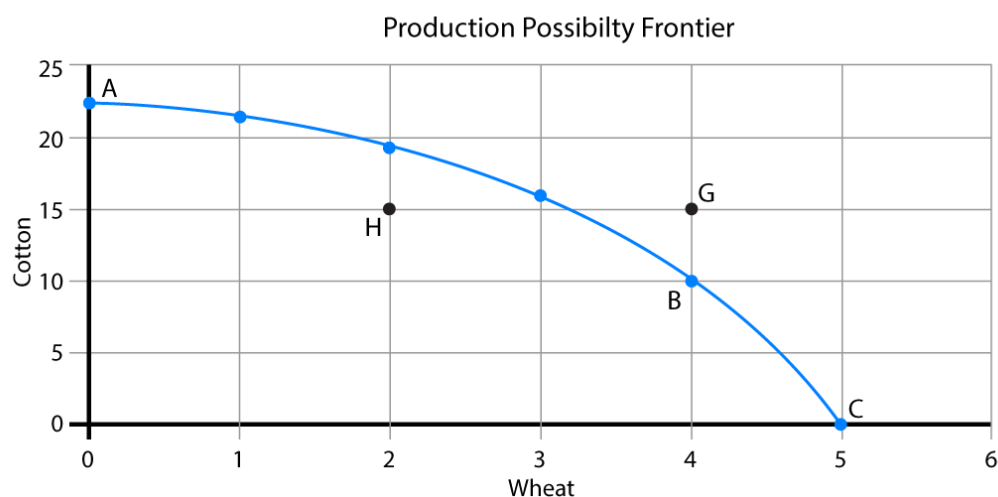


Figure 1: Production Possibility Frontier

Imagine an economy that produces only wheat and cotton. With the given resources (land and labour), this country can produce either 5 units of wheat and no cotton, 22 units of cotton and no wheat or a combination of both wheat and cotton that lie on the blue curve. To increase the production of wheat, some land and labour have to be moved away from the production of cotton towards the production of wheat, and vice versa. Thus, any point on the

PPF is maximum an economy can produce, given technology and given the amount of land and labour it has. Since the economy can do no better than the PPF, all combinations of wheat and cotton that lie on the PPF are considered **efficient**.

A combination like G which contains 15 units of cotton 4 units of wheat is not achievable for the economy, because it just does not have enough land and labour for the combination. On the other hand, a point like H which contains 15 units of cotton and 2 units of wheat is achievable, but leaves some resources unused. It is possible, with the existing land and labour and technology, to increase output of wheat or cotton or both. Such a combination is therefore considered **inefficient**. This production possibility curve is also known as Transformation curve as it describes how one goods ‘transforms’ into another by moving resources from the production from one to the other. Ideally, an economy can solve the “what to produce” problem by choosing the point on its PPF that makes its citizens best – off.

If we lay down, in tabular form, the possible combinations of goods which can be produced at different point on PPF, we construct Production Possibility Schedule. The Production Possibility Schedule corresponding to the production possibility curve above is:

Combination	Wheat (in tons)	Cotton (in tons)
A	0	22
B	1	21
C	2	19
D	3	16
E	4	10
F	5	0

Table 1: Production Possibility Schedule

If this economy chooses to produce 16 bales of cotton, what is the maximum amount of wheat that it can produce? You can see from table 1, that this will be 3 tons, at point D. Suppose this same economy chooses to produce 2 tons of wheat. Can it produce 20 bales of cotton? Table 1 tells you that it cannot. The maximum cotton it can produce if it produces 3 tons of wheat is 19 bales, at point C.

Shape of the PPF: The PPF is downward sloping, and bowed out

Notice that the PPF is downward sloping. This is because each point on the PPF represents the maximum output that is possible from the resources that the economy has. So, if the economy chooses to have more wheat, it will have to give up some cotton (and vice versa). In other words, the maximum quantity of wheat and- the maximum quantity of cotton that this

economy can produce are inversely related. As one goes up, the other goes down. Hence the negative slope.

Economists define **opportunity cost** as what must be sacrificed in order to get something. But why is the PPF bowed out? Let us examine the PPF on which Table 1 is based again. In order to get the first unit of wheat, the economy sacrifices 1 unit of cotton. We say that the opportunity cost of the first unit of wheat is 1 unit of cotton. 2 units of cotton have to be given up for the second unit of wheat. So the opportunity cost of the second unit of wheat is 2 units of cotton. To get the fifth unit of wheat, 10 units of cotton have to be given up! So the 'opportunity cost' of wheat in terms of cotton is increasing. This gives the PPF its bowed out shape .

Why does the opportunity cost rise? When the economy chooses to get the first unit of wheat, obviously land and labour have to be shifted from the production of cotton to the production of wheat. The first lot of factors shifted from cotton to wheat is likely to be those least suited for the production of wheat. So the 'sacrifice' in terms of cotton is small. As more and more factors are shifted out, these are likely to be those much more suited to cotton. The 'sacrifice' in terms of cotton grows larger. The opportunity cost of wheat rises.

In general, therefore, increasing opportunity costs arise because some factors may be better suited to the production of one commodity than the other. The bowed-out shape of the PPF represents the phenomenon of increasing opportunity cost.

Shift in PPF

The shift in PPF may occur in two situations:

- Expansion of the resources
- Increase in Productive capacity of the existing resources

Expansion of the resources: If there is an increase in the resources for example, more people have joined labour market, or more land becomes available for cultivation, the PPF may shift outward.

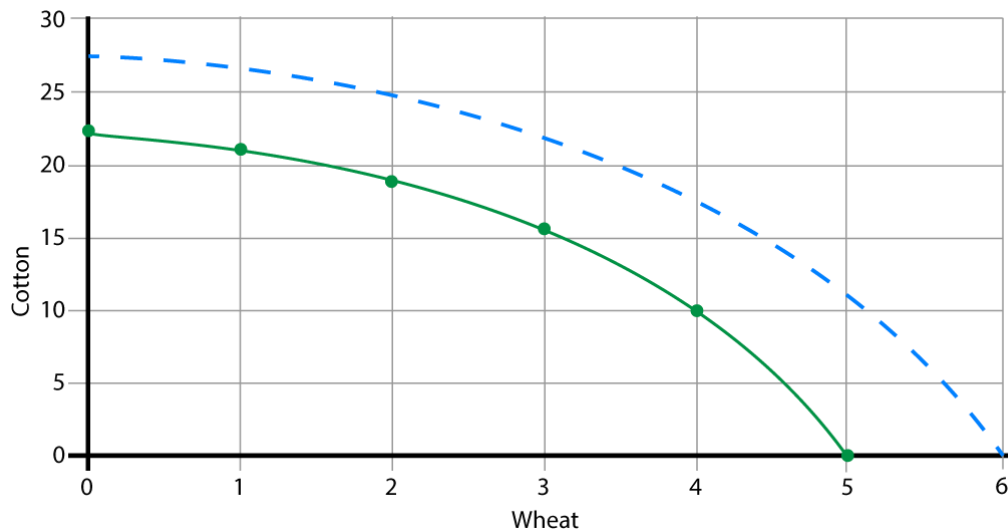


Figure 2: Increase in Productive Capacity of the existing resources

Increase in Productive Capacity of the existing resources: The productive capacity of the existing resources may expand due to improvements in technology, education and training of the human resources etc. In this case also the PPF may shift outward.

How would the PPC move if technology of production of one commodity improves and that of another commodity remains the same?

Suppose that the technology to produce cotton has improved. The maximum amount of cotton that the economy can produce with the amount of land and labour the economy has now increases. If the economy chooses to produce only cotton, it now produces not 22 but 28 units of cotton. But the technology to produce wheat has not changed. So, the economy chooses to produce only wheat, it continues to produce 5 units of wheat as before. The PPF therefore shifts out along the Y-axis, as shown in the diagram below.

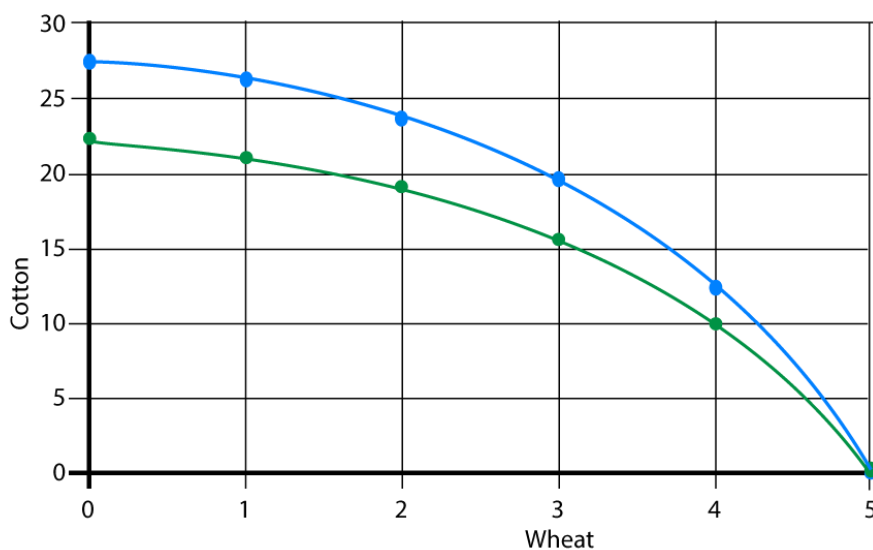


Figure 3: Shift in Production Possibility Frontier because of technological change in the production of cotton

Similarly, when the advancement in technology leads to increase in the production of wheat, the PPF swings out along the X-axis. This is shown in the figure 4 below: In this case, improvements in technology allow us to produce more wheat from the same resources. The maximum amount of wheat we can now produce if we produce no cotton at all is 6 tons. However, the technology to produce cotton has not changed. If we choose to produce only cotton, we produce 22 bales as before. In this case, the PPF swings out along the X-axis.

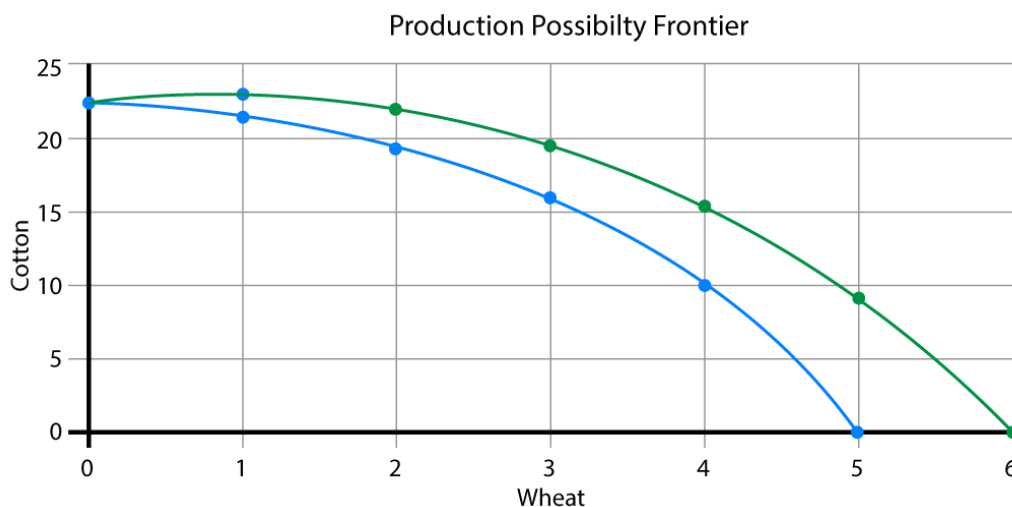


Figure 4: Shift in Production Possibility Frontier because of technological change in the production of wheat

State whether true or false:

- a) In an economy, resources and needs are unlimited. _____

Ans: (False)

- b) There cannot be a parallel shift in a production possibility frontier. _____

Ans: (False)

- c) The point beyond PPF represents unattainable level of output. _____

Ans: (True)

4. Organisation of Economic Activities

There are different forms of economy where the question of what to produce, how to produce, and for whom to produce are dealt differently. Let's look at these economies.

4.1 Market / Capitalist economy:

A capitalist economy is an economy where the means of production are owned by individuals who take decisions independently to fulfill their needs. This economy is also known as market economy. In this economy, producers are free to produce any number of goods for any consumer and with the technique they want to use. So, they solve the problem of what to produce by considering those goods that would fetch them maximum profit. They decide on the technology for production by selecting the methods that are cost effective and easily available. They will solve the problem of 'for whom to produce' by producing for those people who are able to and are willing to pay the highest prices for the produced goods. Economies such as those of the USA, France, Germany and Japan are considered as market economies.

4.2 Centrally planned/ Socialist economy:

In case of socialist economy, the means of production are owned by government or by the central authority that plans the different economic activities. The main aim of such an economy is to provide maximum welfare to its citizens. Therefore, the decisions on what to produce, how to produce and for whom to produce are taken by the government. It is assumed that the government acts to ensure the best interests of the citizens. The erstwhile Soviet Union was a socialist economy.

4.3 Mixed Economy:

In these economies, the means of production are partly owned by the private sector. Government owns a significant share of them as well. This means some decisions are taken by the government and some decisions are left for the market (private sector). India is considered a mixed economy. A very large part of the Indian economy is market based. The agricultural sector is almost exclusively privately owned and operated. A very large part of the manufacturing sector is also privately owned and operated. However, the government owns some key industries. Until 1991, government owned industries were the largest manufacturers of steel, aluminium etc. in the country. The government also holds monopoly over some key services- banking, railways, telecommunications, power generation etc. Although, the role of the private sector in all these activities has grown since 1991, the government still remains a major economic power. This coexistence of private and Government owned enterprises is a key feature of a mixed economy.

5. Positive and Normative Economics

Positive economics is the branch of economics that deals with *what actually is*. It is based on facts and figures and denotes an objective statement. Example of positive statement is: increase in the price of wheat will lead to fall in the demand for wheat. Normative economics is the branch of economics that deals with *what should be*. It is based on value judgement and denotes subjective statement. An example of normative statement is: The price of wheat ought not to increase (because if it does, what will the poor eat?). Economists like to deal mainly with positive statements. Positive statements can, in fact, go a long way to help us take (or give up) normative positions. Let us re-examine the question of wheat prices. We can draw up a list of 'positive' questions that help us decide whether or not price of wheat should go up:

1. Are any of the poor sellers of wheat? (In that case they may benefit from an increase in prices of wheat.)
2. Do the poor eat wheat mainly? Or do they eat something else – rice, bajra, jowar, ragi? (In that case the price of wheat may not matter to the poor as much as the price of rice, bajra, jowar, ragi.)

6. Microeconomics and Macroeconomics

Economics is studied under two main branches namely, microeconomics and macroeconomics. Microeconomics deals with the study of individual units as consumers and producers. It looks at how consumers make their decisions to consume, and how producers make their decisions to produce. It also examines how the decisions of individual economic agents are coordinated by the market.

Macroeconomics, on the other hand, deals with aggregate measures of the economy i.e. it looks at the economic behavior of the whole economy. It looks at economy-wide phenomenon such as national income and its growth, unemployment, inflation etc.

7. Summary

Every economy faces the problem of what to produce, how to produce and for whom to produce. The production possibility frontier is a simple graphical representation of the choices faced by an economy. Given the limited resources of the nation, an economy operating on its production possibility frontier is using its resources efficiently. The shape of the PPF represents the phenomenon of increasing opportunity costs. Growth of the economy can be represented through shifts in the PPF. Different types of economies solve the problem of what to produce, how to produce and for whom to produce differently, depending on who

owns the means of production. Broadly, the study of Economics is divided into two fields: microeconomics and macroeconomics. We shall study all these concepts in more detail in the modules that follow.