
Zagazig University
Faculty of Vet. Medicine
Department of Animal Wealth

د / محمد عبد اللطيف على على

مدرس الإقتصاد البيطرى وإدارة المزارع

CHAPTER I

INTRODUCTION TO VETERINARY ECONOMICS

WHAT ECONOMICS IS ALL ABOUT

Economics is a social science deal with choice among alternative uses of scarce resources.

Economics examines how these choices add up to an economic system, and how this system operates.

Scarcity is central to economic theory

For example, one can have more money by working harder, but less time (there are only so many hours in a day, so time is scarce). No much land on which to grow food, land is scarce).

The word 'Economics' was derived from

Greek words 'Oikos' (a house)

'Nemein'(to manage)

Managing a household, using the limited money or resources that a household has.

Few important definitions

Used in

the economic theory

1- Economic and Wealth

The early economists defined economics as a science of wealth.

Adam Smith, who is also regarded as father of economics, stated that economics is a science concerned with the nature and causes of wealth of nations.

That is, economics deal with the question as to how to acquire more and more wealth by a nation.

However, the above definitions have been criticized on various grounds. As a result, economists emphasis has been gradually shifted from wealth to man.

2- Economic and Welfare

Economics not only analysis the aspect of how to acquire wealth but also how to utilize this wealth for obtaining good human life.

From the previous definition we find the following points:

(a) Economics is not only the study of wealth but also the study of human beings.

(b) Wealth in itself is meaningless unless it is utilized for obtaining material things of life.

(c) Economics is a social science. It does not study isolated individuals but all individuals living in a society.

3- Economic and Scarcity

Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses.

(a) 'Ends'

are the wants: which every human being desires to satisfy.

Want is an effective desire for a thing, which can be satisfied by making an effort for obtaining it.

We have unlimited wants and as one want gets satisfied another arises.

For example, one may have the desire to buy a car or a flat. Once the car or the flat is purchased, the person wishes to buy a more so, the list of his wants does not stop here but goes on one after another.

As human wants are unlimited, we have to make a choice between the most urgent want and less urgent wants.

Thus the problem of choice arises. That is why economics is also called as a science of choice. If wants had been limited, they would have been satisfied and there would have been no economic problem.

B. 'Means' or resources are limited

Means are required to be used for the satisfaction of various wants. For example, money is an important means to satisfy many of our wants.

Means are **scarce** (short in supply in relation to demand) and so it must be used optimally to get the maximum satisfaction.

(c) The scarce means have alternative uses.

It means that a commodity or resource can be put to **different uses**.

Finally in short, economics is a social science concerned with the use of scarce resources in an optimum manner for obtaining desired level of income, output, employment and economic growth.

4- Economic Positive or Normative science?

A positive science describes 'what is'

Normative science explains 'what ought to be'.

Thus a positive science describes a situation as it is, whereas normative science analysis the situation and suggests/comments on wrongness or rightness of a thing/state.

For example, 'population in India is rising', is a positive statement and 'Rising population is an obstacle in the way of development' is a normative statement.

Economics should not be treated as only positive science. It should be allowed to judgments of an economic situation.

Therefore, Economic considered both positive and normative science. Thus, Economics is the social science that studies the allocation of scarce resources to satisfy unlimited wants. This involves analyzing the production, distribution, trade and consumption of goods and services.

Economics is said to be positive when it attempts to explain the consequences of different choices given a set of assumptions or a set of observations, and normative when it prescribes that a certain action should be taken.

5- OPPORTUNITY COST

Opportunity cost is a term which means the cost of something in terms of an opportunity foregone (and the benefits that could be received from that opportunity), or the most valuable foregone alternative.

In other words, the opportunity cost of a given commodity is the next best alternative cost or transfer costs.

As we know that productive resources are scarce, therefore, the production of one commodity means not producing another commodity. The commodity that is sacrificed is the real cost of the commodity that is produced and this is the opportunity cost.

Let us explain this with an example. Suppose a producer can produce a cattle or a sheep with the money. If the producer decides to produce cattle and not sheep, then the real cost of the cattle is equal to the cost of sheep, i.e., the alternative foregone.

The simplest way to estimate the opportunity cost of any single economic decision is to consider, "What is the next best alternative choice that could be made?". It is to be noted that opportunity cost is not the sum of the available alternatives, but benefit of the best alternative of them.

The principle of opportunity cost applies to all decisions, not just economic ones.

6- Rational choices

When making decisions of how to allocate scarce resources, farmers, agrobusiness people, government officials and consumers of livestock products need to assess the costs and benefits of their actions.

Where a person makes a decision that generates the greatest benefit relative to cost an economist would say that a rational choice has been made.

Therefore, the decision is not made on cost alone, but also comparing this cost with the benefit that is derived from spending the money and using the item purchased.

For example, firms that make feed inputs for livestock production will want to assess the investment and running costs required for a new feed versus the income that will generate.

A more complex decision making process is carried out by governments when deciding which projects to fund and how big they should be. The government must weight up the relative costs and benefits of each project to produce a mixture of projects that give the best chance for economic growth and encourage poorer groups in society.

7- PRODUCTION POSSIBILITY CURVE

The production possibility Curve is a graph that depicts the trade-off between any two items produced. It is also known as Transformation Curve or Production Frontier, which shows the maximum feasible quantities of two or more goods that, can be produced with the resources available.

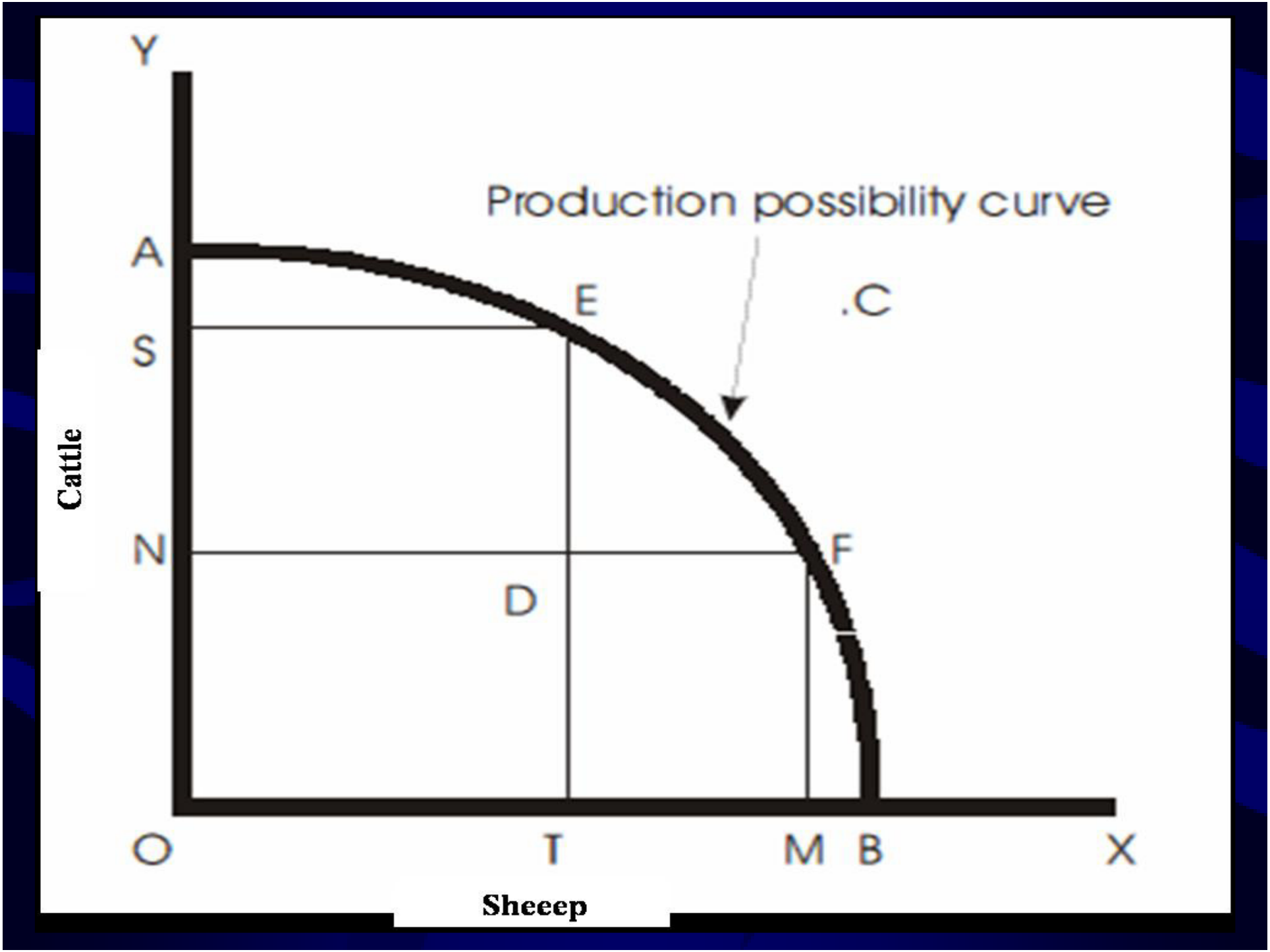
In other words, it indicates the opportunity cost of increasing one item's production in terms of the units of the other forgone.

The table below illustrates production possibilities of a simple economy producing two commodities—cattle and sheep.

Two production possibilities E and F are shown. When the economy decides to put more resources for the production of sheep, it must sacrifice some resources from the production of cattle.

Thus, when 10000 sheep are decided to be produced, 5000 cattle cannot be produced as the resources are now diverted to the production of sheep.

Production possibilities	sheep (in 1000's)	cattle (in 1000's)
E	5	15
F	10	10


Y
Production possibility curve
A
E
.C
S
Cattle
N
F
D
O
T
M
B
X
Sheeep

All points on a production possibilities curve are points of maximum productive efficiency or minimum productive inefficiency: resources are allocated such that it is impossible to increase the output of one commodity without reducing the output of the other.

The production possibility curve does not remain stationary. It moves outward overtime with growth of resources and improvement in technology. This is because we get more output from the same quantities of resources.

If all resources in the economy are utilized in the production of cattle, OA units of cattle can be produced.

On the other hand, if all resources are put in the production of sheep, OB units of sheep would be produced in the economy. Joining points A and B, we get production possibility curve AB.

In case, the economy decides to produce both the commodities by using the available resources, it can produce various combinations of cattle and sheep by staying on the curve AB, such as at E or F.

At point E, it can produce OS units of cattle and OT units of sheep.

Similarly, at F, ON units of cattle and OM units of sheep can be produced.

Thus, the points E, F or any other point on curve AB show maximum feasible combinations of cattle and sheep which can be produced with the resources available.

Point C in the figure is not attainable or feasible for the economy as it is above the production possibility curve AB, i.e., beyond the capacity of the economy.

Again, it will not produce at point D which is though attainable but not desirable, because in that case the economy's resources will not be used most effectively.

To produce more sheep, some units of cattle are to be sacrificed, i.e., cattle can be transformed to sheep. The rate at which one product is transformed into another is called marginal rate of transformation (MRT). Thus, MRT between cattle and sheep is the units of cattle (in our case, 5000), which has to be sacrificed for the production of sheep.

MRT increases, as more of one commodity is produced and less of another. This makes Production Possibility curve concave to the origin.

Uses of Production Possibility Curve

It helps in finding the solution of the basic problems of production—what and how to produce and for whom to produce goods in the economy.

CENTRAL PROBLEMS OF AN ECONOMY

Scarcity is the root cause of all economic problems. We know that resources are scarce or short in supply in relation to demand; but wants or ends are unlimited.

As a consequence, we face **the problem of choice** among so many of our wants. This is because scarce means have alternative uses. Thus, we have to choose among the most urgent and less urgent wants.

In fact, the basic problem of an economy is the problem of choice. More precisely, problem before us is to take **right decisions** in regard to the goals or ends to be attained and the way, the scarce means to be utilized for this purpose.

Every economy faces some fundamental problems called as **central problems of an economy**.

These are the following:

(1) What goods and services are to be produced? The first major problem faced by an economy is what types of goods and services to be produced. As resources are limited, we must choose between different alternative collection of goods and services that may be produced. Moreover, we have to decide about the quantity of the goods to be produced in the economy.

(2) How to produce these goods and services? The next problem we have to tackle is the problem of how to produce the desired goods in the economy. Thus the question of techniques to be used in the production comes in the mind.

(3) For whom these goods and services are to be produced? Once we have decided what goods to be produced and what techniques to be used in the production of goods, we are encountered with another problem, i.e., the problem of distribution of goods in the economy. This is the problem of sharing of national income.

(4) Are the resources efficiently used and fully employed? We have also to see that scarce resources are efficiently utilized and full employment. This is the problem of economic efficiency or welfare maximization.

(5) How to attain growth in the economy? An economy is to ensure that it is attaining sufficient growth rate so that it is able to grow larger and larger and develop at faster rate.

SUBJECT MATTER OF ECONOMICS

The subject matter of economics is divided into two categories

A- Microeconomics B- Macroeconomics

A- Microeconomics

Microeconomics: which deals with individual agents, such as households and businesses.

In Greek mickros means small. Thus microeconomics deals with a small part of the whole economy. For example, if we study the price of a particular commodity instead of studying the general price level in the economy.

In short, microeconomics is the study of the economic behaviour of individual consumers, firms, and industries and the distribution of production and income among them.

Important points of Microeconomics significance

1. Microeconomics is of great help in the efficient management of the limited resources available in a country.

2. Microeconomics is helpful in understanding the working of free enterprise economy where there is no central control.

3. It explains how through market mechanism goods and services produced in the community are distributed.

4. It helps in the formulation of economic policies, which are meant for promoting efficiency in production, and welfare of the people.

5. Microeconomics is the basis of welfare economics.

6. Microeconomics is used for constructing economic models.

Microeconomic also suffers from the following defects or limitations

1. It is not capable of explaining the functioning of an economy as a whole.

2. It assumes full employment; which is rare in real life.

3. It cannot be used for solving the problem relating to public finance, monetary and fiscal policy etc.

B- Macroeconomics

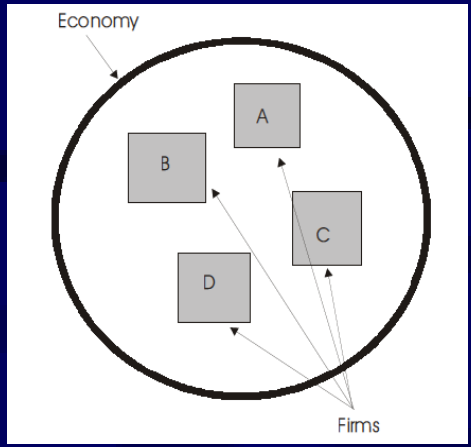
Macroeconomics: deals with the aggregates of the system. The word macro means large. Macroeconomics, thus, deals with the behaviour of various economic variables that refer to the economy as a whole. These variables are total national income, aggregate employment etc.

DISTINCTION BETWEEN MICROECONOMICS AND MACROECONOMICS

Micro and macroeconomics are the two broad branches of economic theory.

As we already know that microeconomics deals with a small part of the economy. It studies the economic behaviour of individual unit.

Macroeconomics, on the other hand, deals with the aggregates of the whole economy. In other words, it is a study of all units combined together. It is a study of economic system as a whole.



Let us take the whole economy as a circle.

When we study any aspect of the circle, we deal macroeconomics.

The economy consists of, say, four firms/companies— A, B, C and D. If we are analyzing price of products sold, employment generated or output produced by firm A, we are studying microeconomics.

Further, If A and B together make one industry (industry means many firms producing similar types of products), and we study any aspect related to this industry, we are again studying microeconomics.

RESOURCES AND THE IMPORTANCE OF VETERINARY ECONOMICS IN VETERINARY MEDICINE

Types of resources

A.Veterinary resources

The veterinary resources include the various aspects used in conservation of animal health and increasing their livability.

They include drugs, vaccines, disinfectants, accurate ration formulation, and accurate visiting of the farms.

Veterinary costs represent 3-4% from the total costs and 5-6% from the variable costs.

B. Economic Resources

1. Land

Land includes all of the natural physical resources. For example fertile farm land, the benefits from a temperate climate or the ability to harness wind and solar power and other forms of renewable energy.

2. Labour

Labour is the human input into the production process. Some workers are more productive than others because of the education, training and work experience they have received.

3. Capital

To an economist, investment is not the money that people put into the stock market or into bank but, the term capital means investment in capital goods that can then be used to produce other consumer goods and services in the future.

- Fixed capital includes machinery, plant and equipment, new technology, factories and other buildings (more than one year).
- Working capital refers to stocks of finished and semi-finished goods that will be either consumed in the near future or will be made into finished consumer goods (during the production cycle).

4. Technology

Improved technology in farming has vastly increased the productivity of our agricultural sector. The introduction of the first milking machine not only allowed work to be done faster (since milking machine is quicker than hand milkers) but also reduced the time of milking (stress) and polution.

5. Infrastructure

Infrastructure is the stock of capital used to support the entire economic system.

Examples of infrastructure include road & rail networks; airports & docks; telecommunications e.g. cables and satellites to enable web access.

6. Market

The concept of a market is any structure that allows buyers and sellers to exchange any type of goods, services, and information. The exchange of goods or services for money is a transaction. Market participants consist of all the buyers and sellers of a good who influence its price.

7. Manager

Farm managers tend animals, raise crops, plan strategies for maximum yield, organize farm administration, work machinery, organize associated businesses, and manage staff.

They need to have technical and practical competence, coupled with the ability to make sound business decisions.

The economic information can help the manager in the following aspects:-

1- To know **the accurate using of veterinary resources** in increasing livability and productivity of the farm animals (Dairy cattle, beef cattle and poultry.. etc.).

2- **Take a decision** to treat or not treat diseased as the cost of treatment is beneficial to the farmer or discarded the animal is best.

3- To plane **the more economical vaccine program** against highly infectious contiguous diseases like (FMD) as it is highly contiguous viral diseases, also against mastitis and some bacterial diseases like Tuberculosis and Brucellosis.

4- To plane accurate program against highly economic internal parasitic diseases like fasciolisis, gastrointestinal tract parasites and also against some destructive economically external parasites like lice, mites and fleas.

5- Construction the herd health program in any farm either large or small animals or poultry farms and determination the accurate herd health program which is highly profitable for the farmer.

6- Determine the best policy to manage their farm.

7- To construct the accurate records which help the managers for raising the productivity and livability of their farm.

8- To determine the best animal breed to bred it which yield high production and high profit for the farmer and to determine the best density (animal/m2) of either (large, small or poultry) and also, the best type of housing which suitable for the type of animal.

9- Linear programming help the manager to construct the best economic feeding plane for their animals with minimum cost.

10- Budgeting help the manager to determine the best profitable project used in the farm.

11- Sensitivity analysis and cost benefit analysis can help the manager to determine the profitability of any projects which plane it.

12- Determination of the best productive stage to produce in it either in stage I, II or III and the best quantity of different resources to produce using it.

13- To avoid risk and uncertainty.

14- To determine the best time of marketing animals and its product (Milk, meat and egg).

15- In poultry we can determine the best profitable weight of birds to market the birds at it.

16- Determine the policy of marketing animal product.

17- Help in achievement animal and farms welfare.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