

Principles of Economics



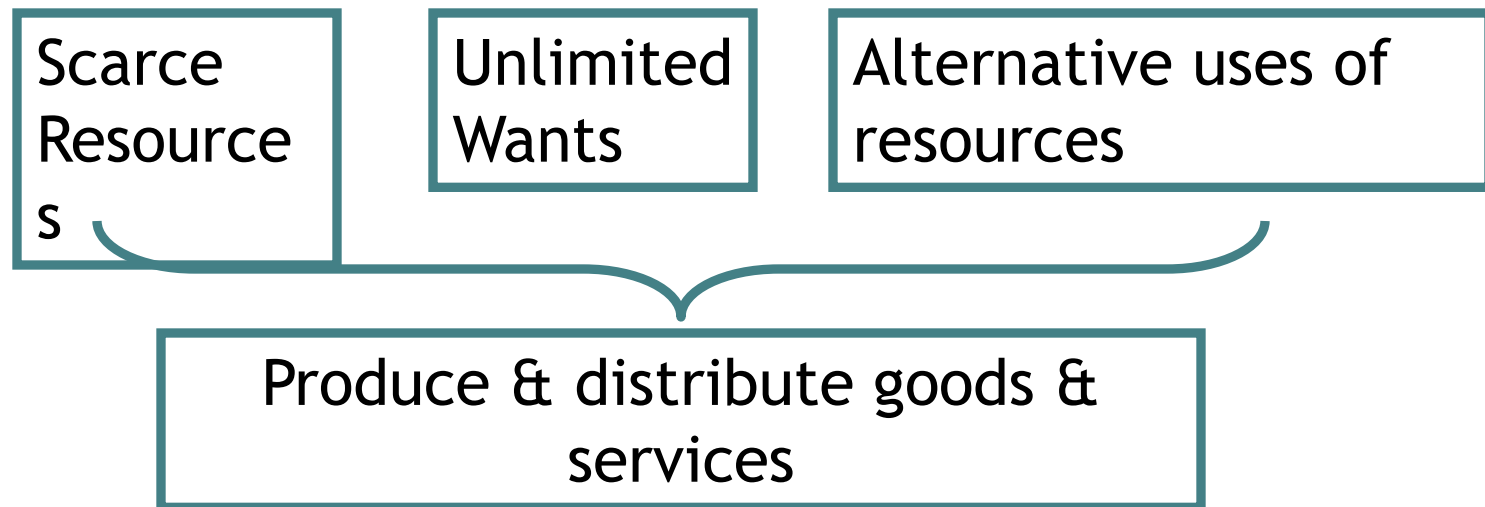
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CSE, IIUC; March, 2016

Economics

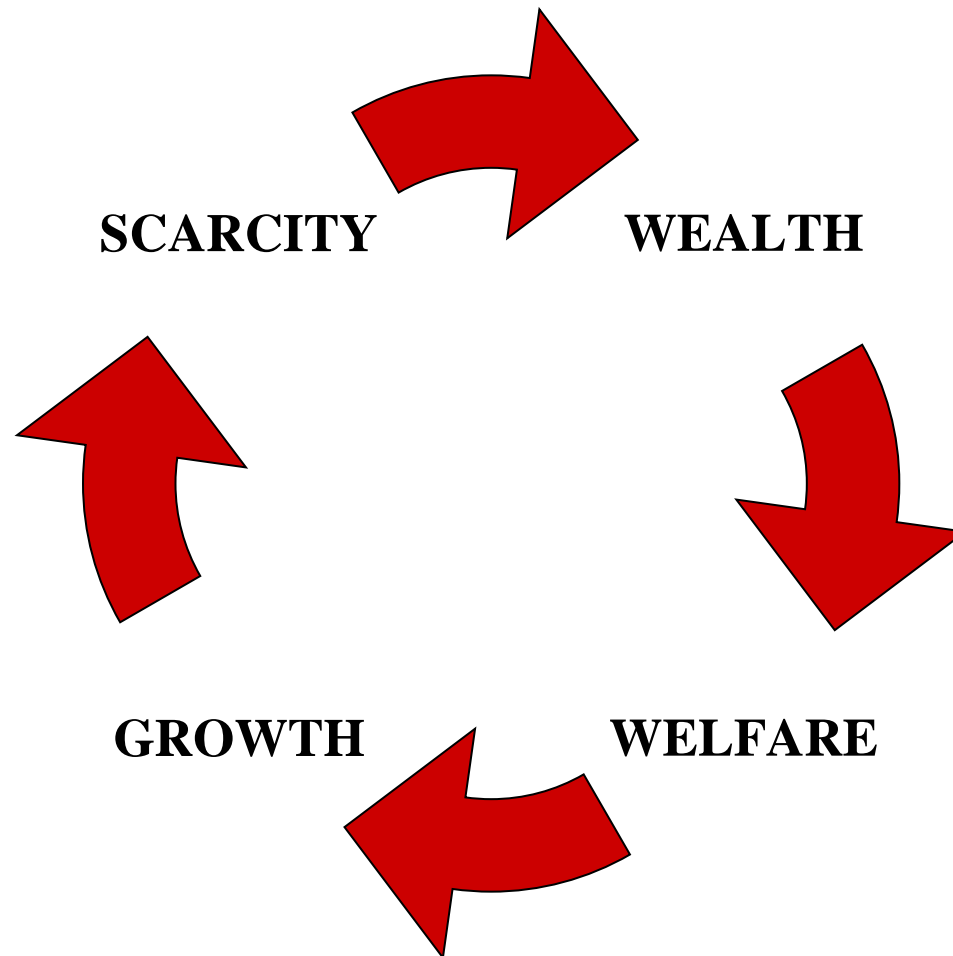
- **Economy** - A system that provides living to the people
- **Economic activity** - any activity performed for earning money for the satisfaction of human wants.
- **Economics** is the social science that seeks to describe the factors which determine the production, distribution and consumption of goods and services.

Economics

- A social science concerned with those aspects of social behavior and those institutions which involve the allocation of scarce resources among unlimited and competing uses, to produce and distribute goods and services in the satisfaction of human wants, which are innumerable and insatiable.



Origin and Scope of Economics



- **Wealth Definition by Adam Smith**

- a science which studies the nature, causes and growth of the wealth of nations
- Adam Smith - Father of economics

- **Criticism**

- No attention was paid to man for whom wealth is really meant.

- **Welfare Definition by Alfred Marshall**

- study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the use of the material requisites of well being. Thus it is, on the one side, a study of wealth; and on the other, and more important side the study of man.

- **Criticism**

- Non-material goods are not acknowledged by Marshall.
- Limited to those activities which increase human welfare.

- **Scarcity Definition by Lionel Robbins**

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

- **Four characteristics**

- Man has unlimited wants or ends.
- The means or resources to satisfy them are limited.
- These resources are not specific & have alternate uses.
- Man has therefore to choose between wants.

- **Criticism**

- Aggregates of the entire economy (national income, total output etc.) and the problem of unemployment and instability are not covered
- The causes and growth patterns of national income and per capita income are left untouched.

- **Growth Definition by Paul A. Samuelson**
 - is a study of how man and society choose, with or without the use of money, to employ scarce productive resources which could have alternate uses, to produce various commodities over time and distribute them for consumption now and the future among various people and groups of society.

Concerns of Modern Economics

- Allocation of society's resources among alternative uses
- Efficiencies and inefficiencies of economic system
- Distribution of the society's output among individuals and groups
- Ways in which production and distribution change over time

Significance of Economics

- Consumers
- Producers
- Administrators
- Planners
- Academicians

Micro Economics

Studies individual units like individual household, pricing of a firm, wages of a worker, profits of an entrepreneur, and so on.

- Theory of Demand
- Theory of Production
- Price determination in Commodity market
- Price determination in Factor market

Microeconomic issues

- choices: *what, how and for whom*
- the concept of opportunity cost
- rational economic decision making: marginal costs and marginal benefits
- microeconomic objectives
 - efficiency
 - equity

Macro Economics

Deals with the average and aggregates of the system rather than the particular items in it, and attempts to define these aggregates in a useful manner and examines their relationship.

- Theory of National Income
 - GDP/GNP/NDP
- Theory of Employment
 - Unemployment, its types and rate
- Theory of Money
 - Commodity money (barter), modern money (paper), banking and insurance, interest rates.
 - Three purpose - transaction, saving and speculative

Macro Economics

- ▣ Theory of General Price Level
 - Wholesale Price index, consumer price index
- ▣ Theory of International Trade
 - Balance of payment, foreign exchange rate and purchasing power parity theory
- ▣ Economics of Growth
 - Four factors - human resource, natural resource, capital formation and technological changes and innovation
 - Business cycles, investment and savings

- Macroeconomic issues
 - growth
 - unemployment
 - inflation
 - balance of payments problems
 - cyclical fluctuations

Examples of microeconomic and macroeconomic concerns

	Production	Prices	Income	Employment
Micro Economics	Production/Output in Individual Industries and <u>Businesses</u> How much steel How many offices How many cars	<u>Price of Individual Goods and Services</u> Price of medical care Price of gasoline Food prices Apartment rents	<u>Distribution of Income and Wealth</u> Wages in the auto industry Minimum wages Executive salaries Poverty	Employment by Individual Businesses & <u>Industries</u> Jobs in the steel industry Number of employees in a firm
Macro Economics	<u>National Production/Output</u> Total Industrial Output Gross Domestic Product Growth of Output	<u>Aggregate Price Level</u> Consumer price index Producer Price index Rate of Inflation	<u>National Income</u> Total wages and salaries Total corporate profits	Employment and Unemployment in the <u>Economy</u> Total number of jobs Unemployment rate

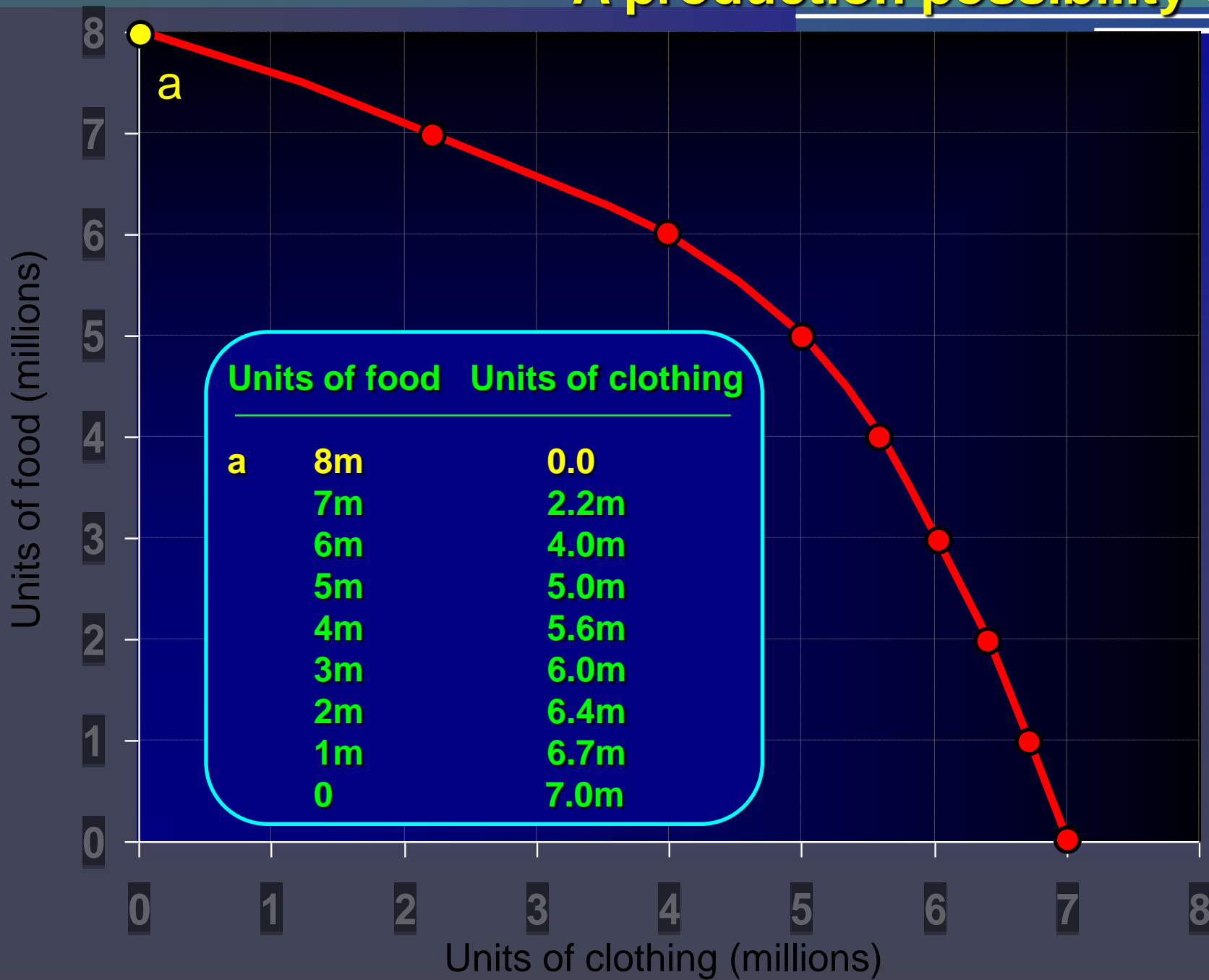
- **Production** The process by which resources are transformed into useful forms
- **Resources/ Inputs** Anything provided by nature or previous generations that can be used directly or indirectly to satisfy human wants.
- **Capital** Things that have been already been produced that are in turn used to produce other goods and services
- **Producers** Those people or groups of people, whether private or public, who transform resources into usable products.
- **Outputs** Usable products

Production Possibility Curve

Illustrates the principles of constrained choice, opportunity cost and scarcity.

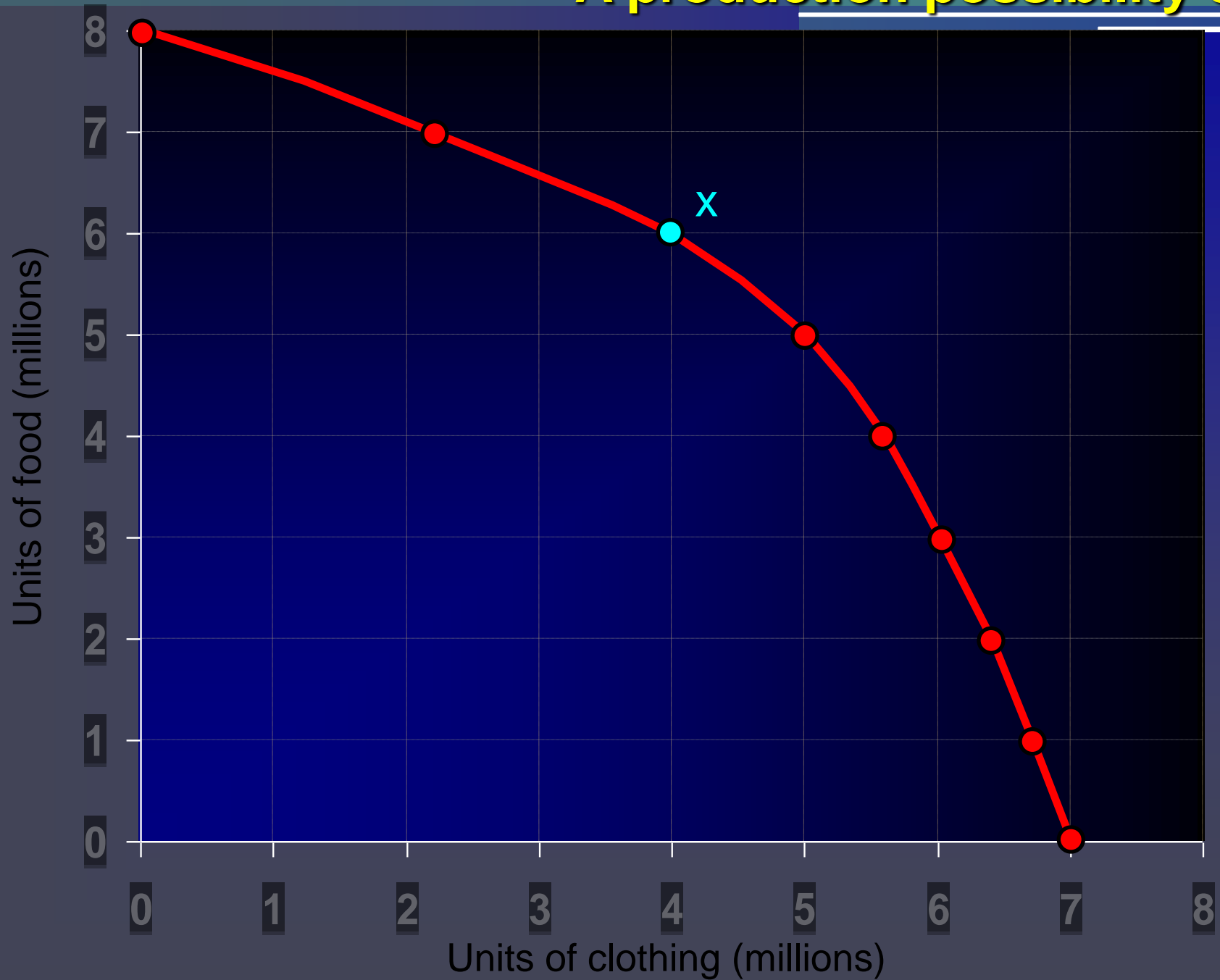
A graph that shows all the combinations of goods and services that can be produced if all of society's resources are used efficiently

A production possibility curve¹⁹

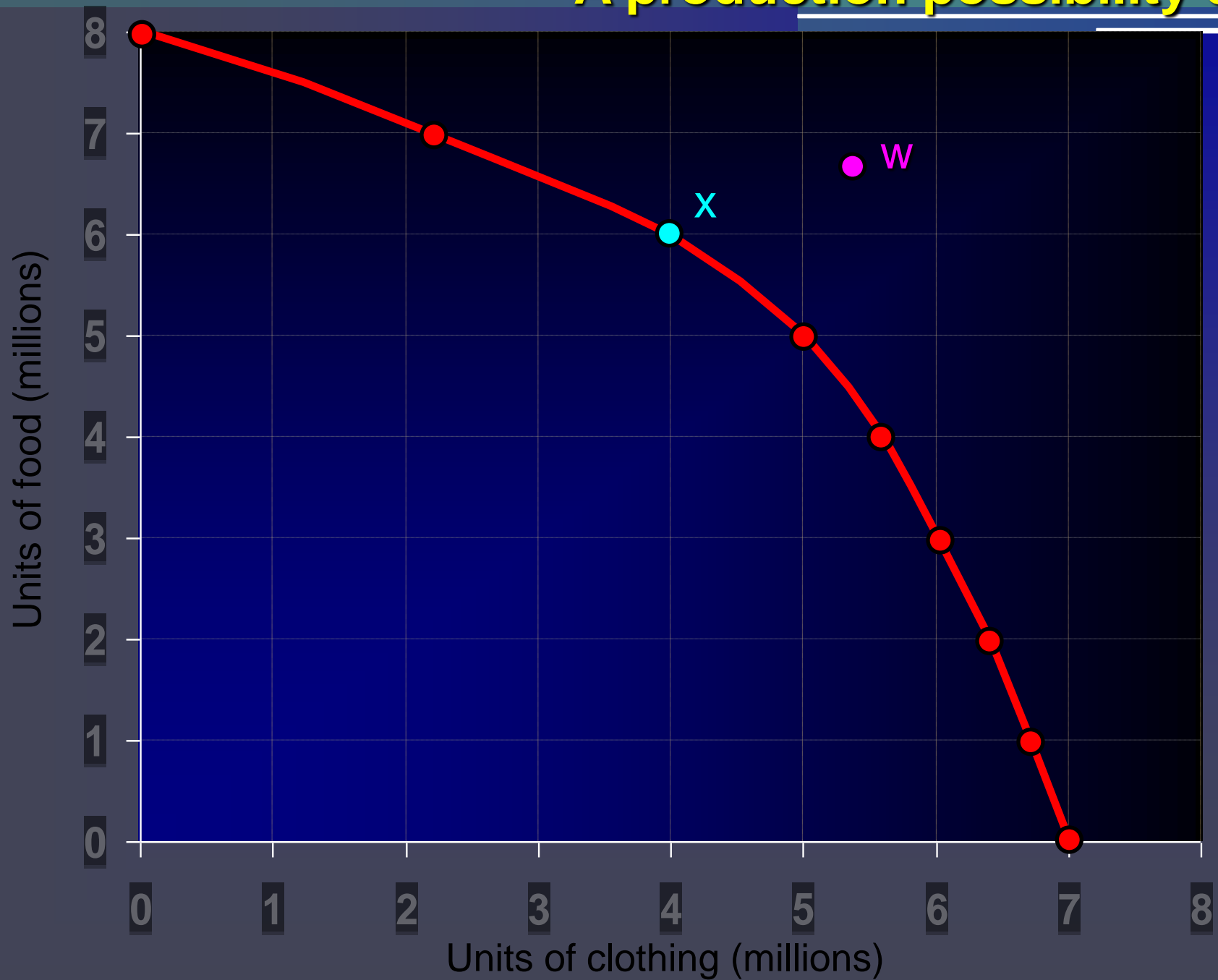


A production possibility curve

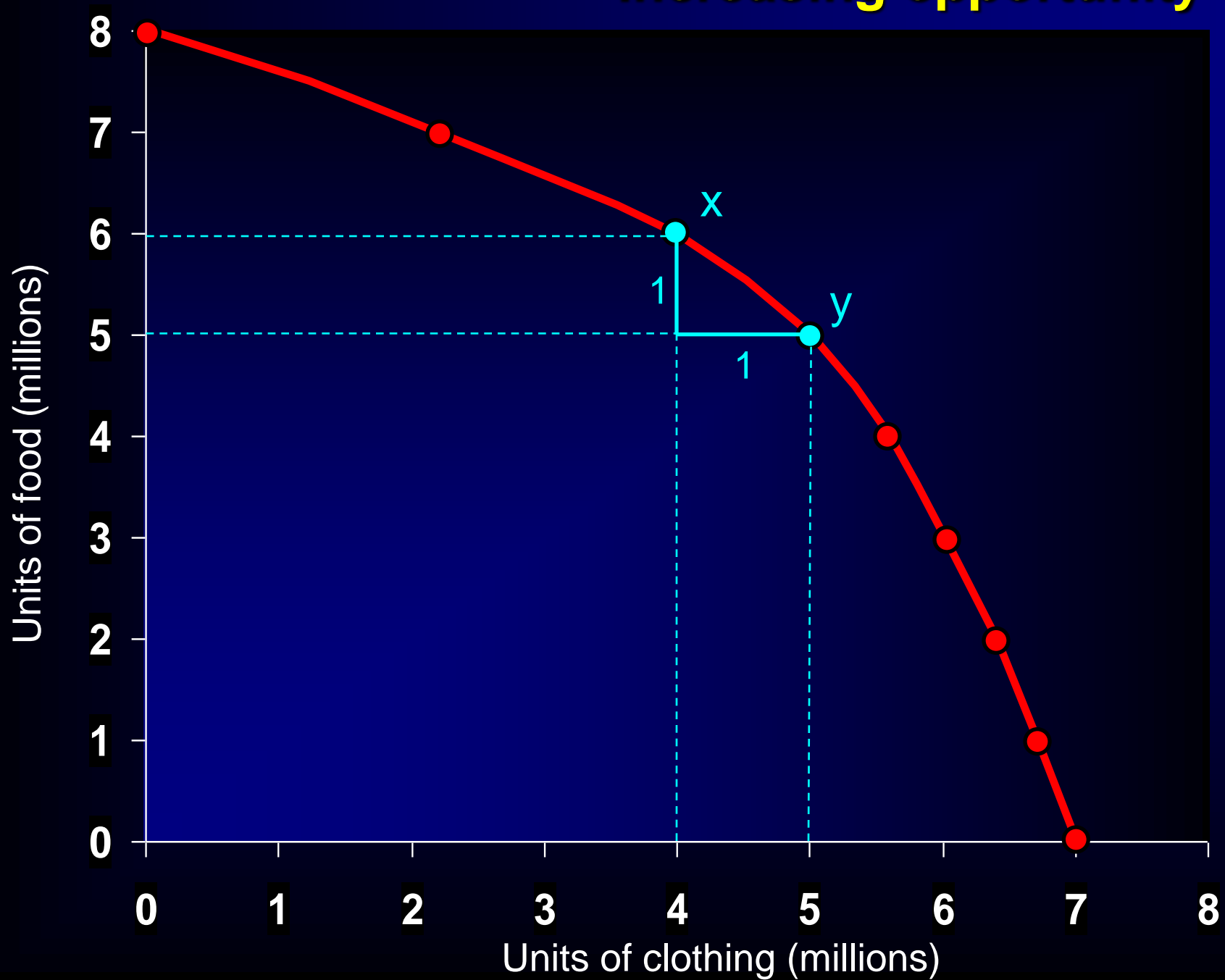
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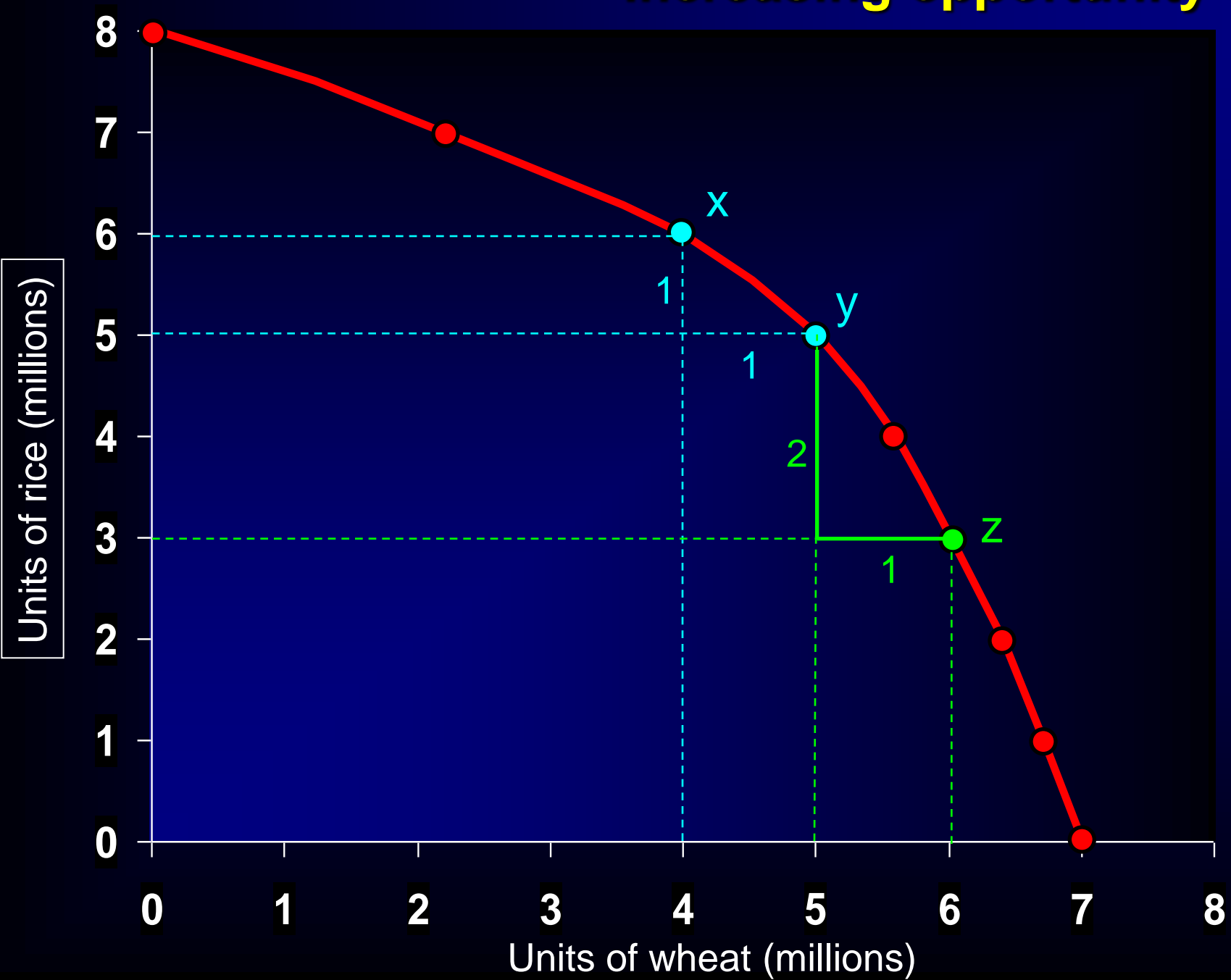
A production possibility curve²¹



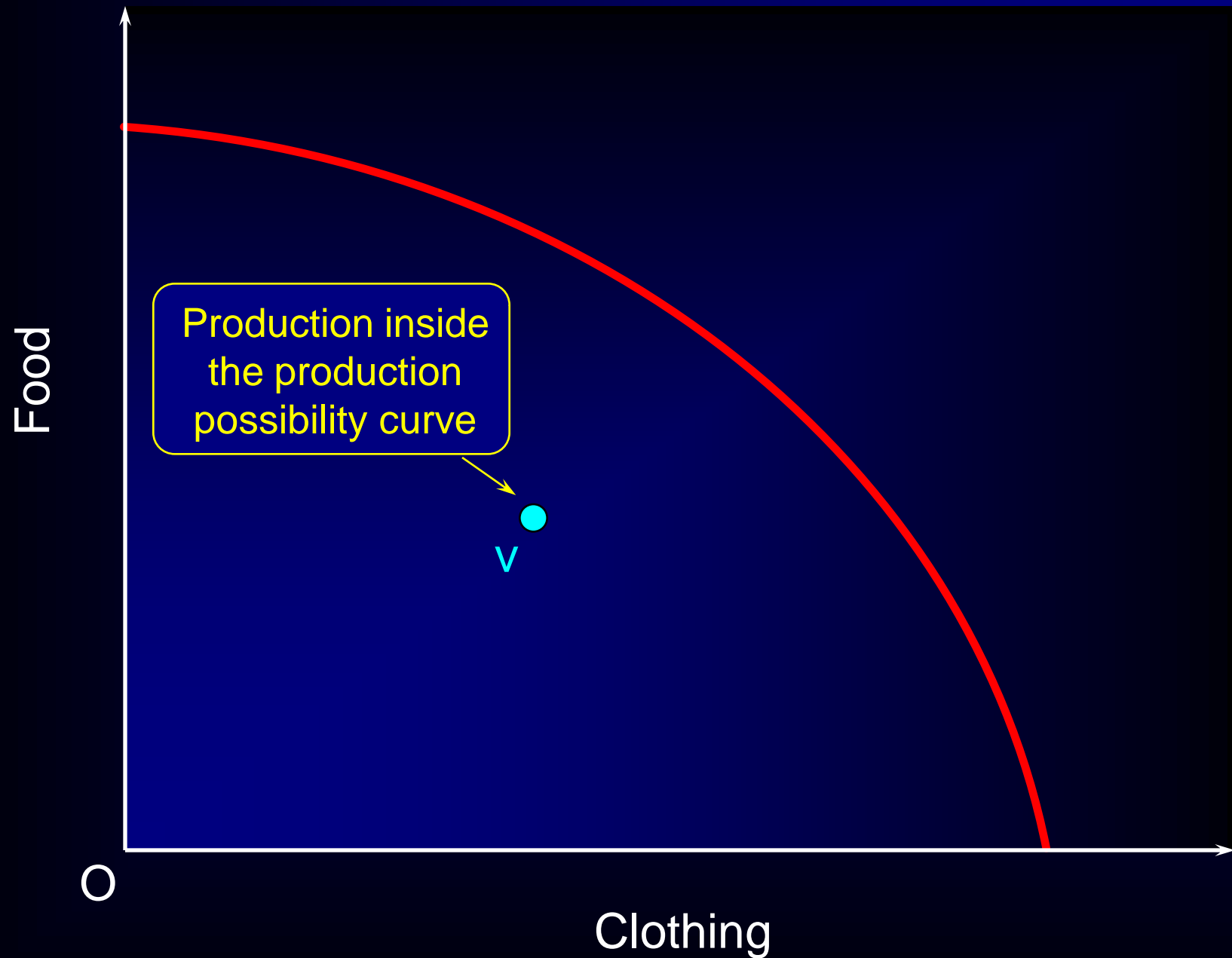
Increasing opportunity costs²²



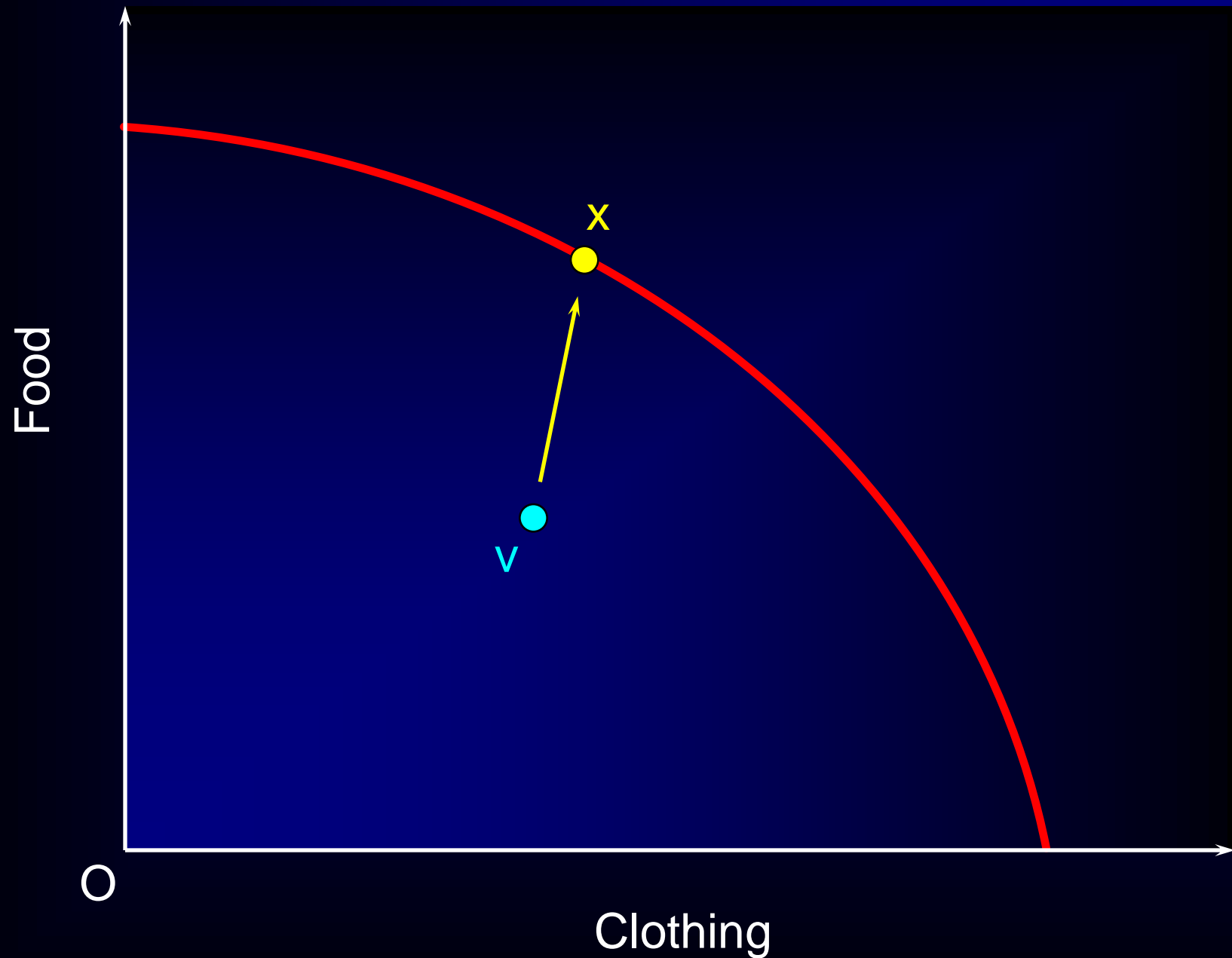
Increasing opportunity costs²³



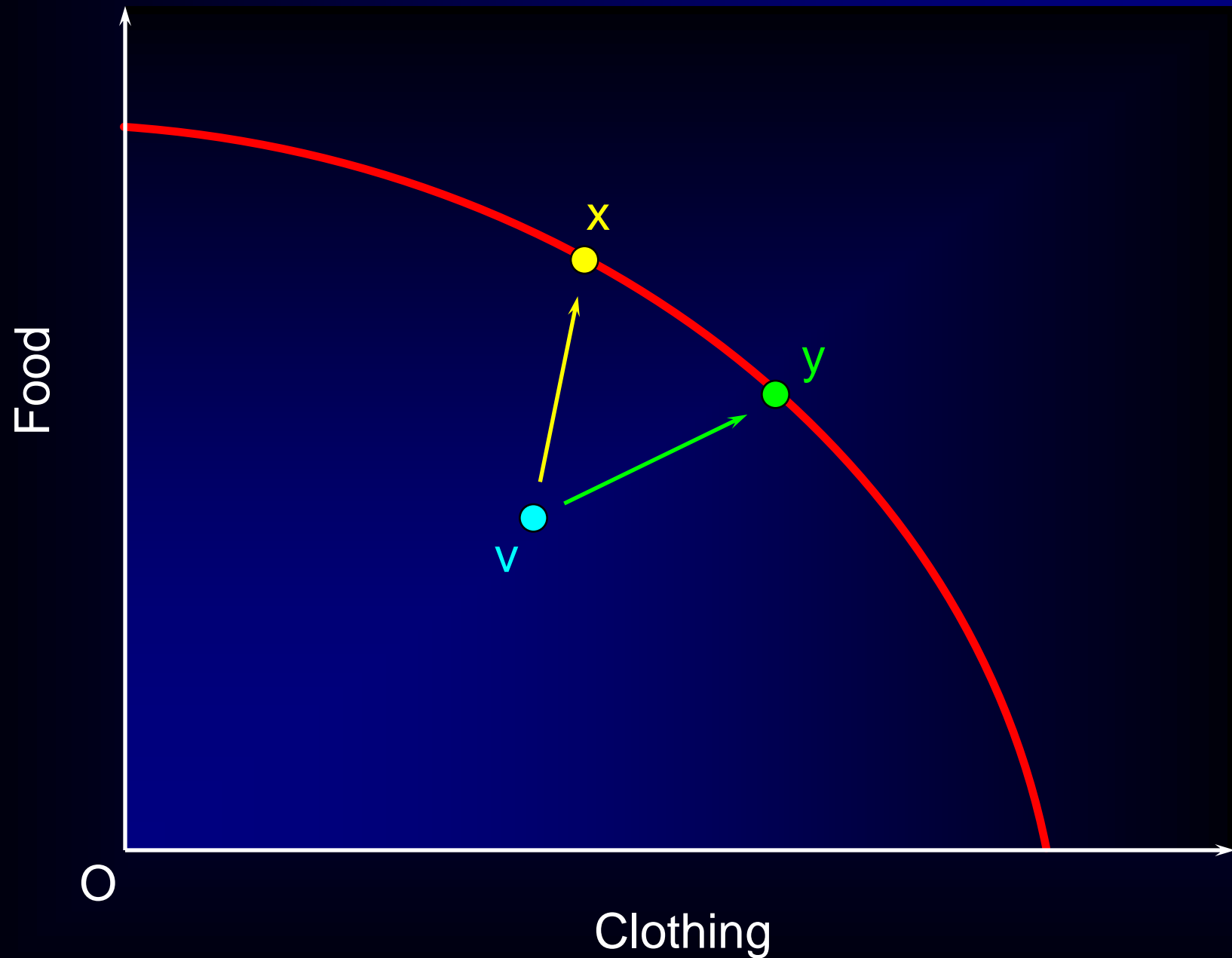
Making a fuller use of resources²⁴



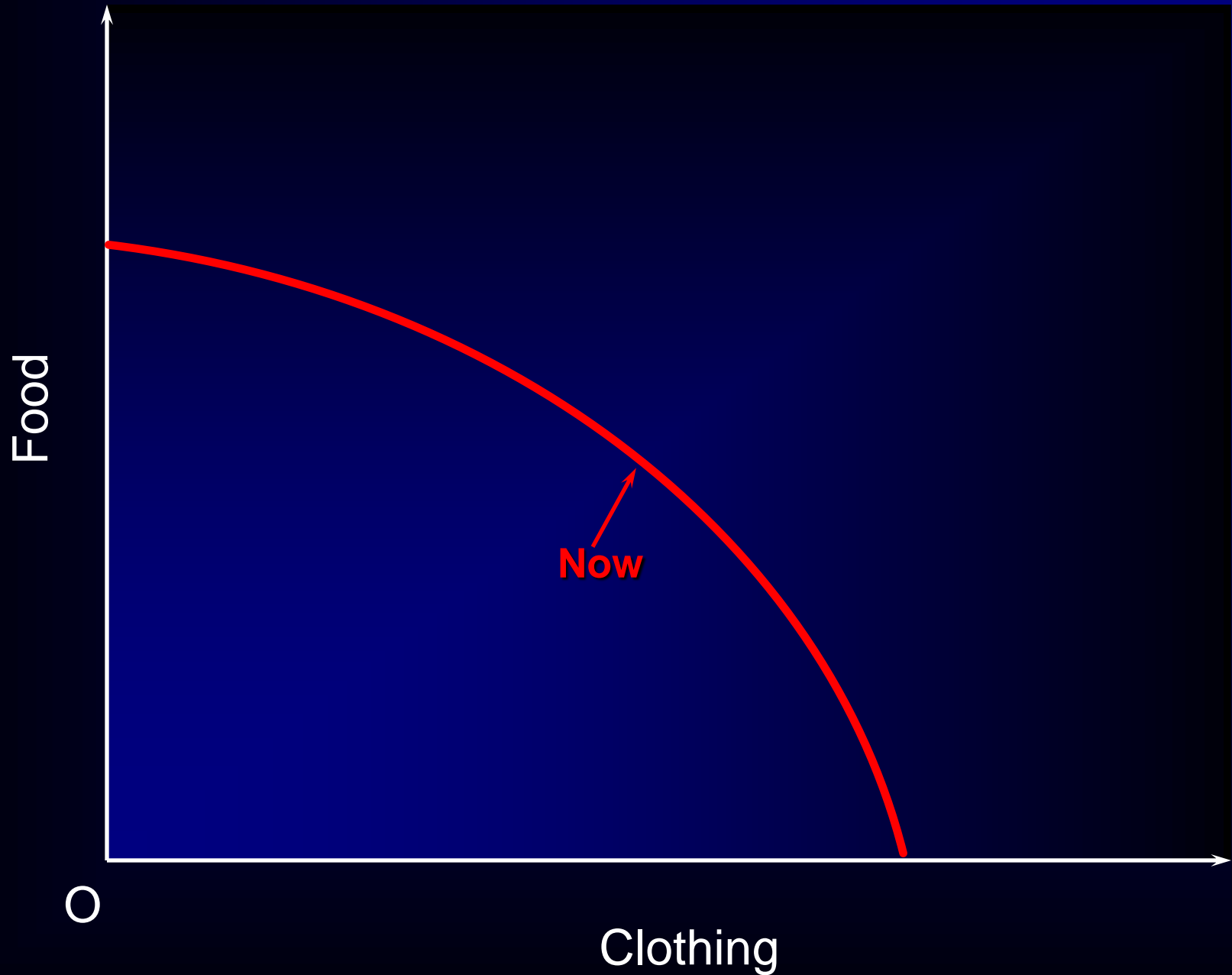
Making a fuller use of resources²⁵



Making a fuller use of resources²⁶



Growth in potential output²⁷



Growth in potential output²⁸



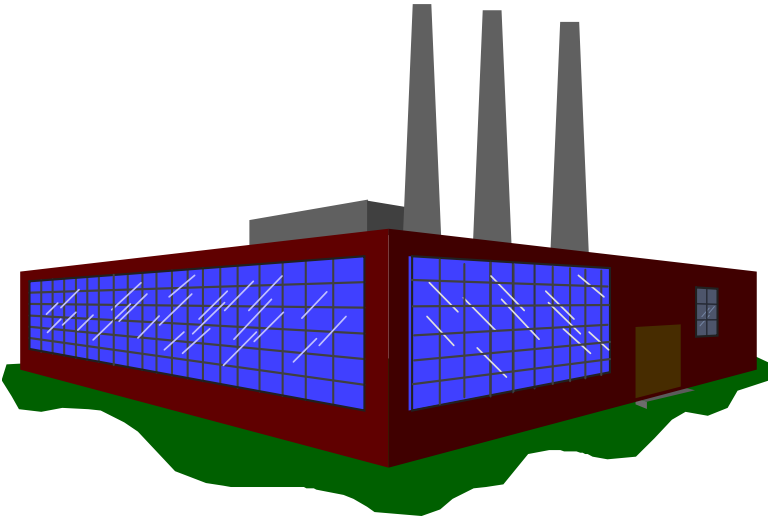
Business Economics

- The purpose of Business Economics is to show how economic analysis can be used in formulating business policies by
 - Identifying possible courses of action
 - Evaluating the revenues and costs associated with each course of action
 - Choosing the one course that best meets the goal or objective of a firm

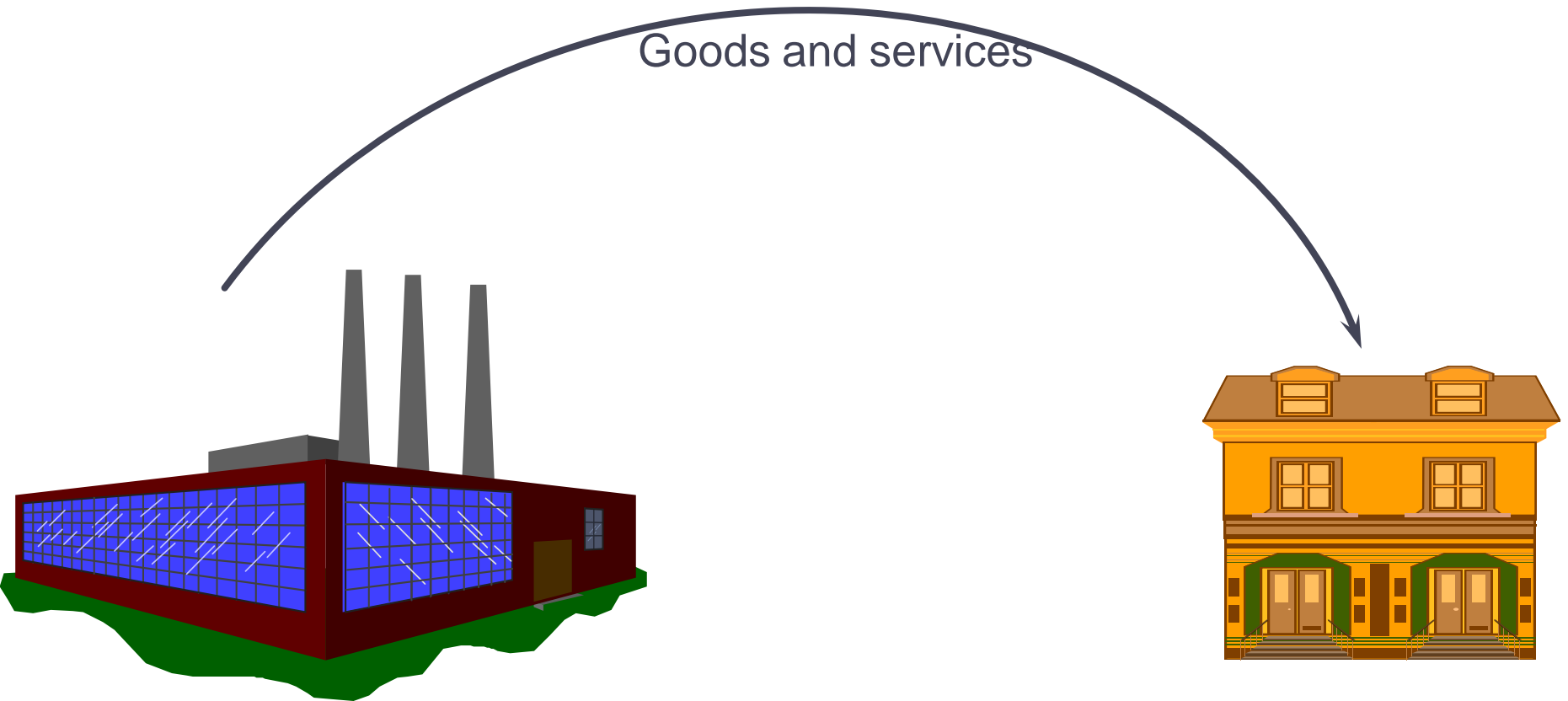
CIRCULAR FLOW OF ECONOMIC ACTIVITY

- **Households**
 - The consuming units in an economy
- **Firms**
 - The producing units in an economy
- **Product or Output markets**
 - The market in which goods and services are exchanged
- **Input or Factor markets**
 - The markets in which the resources used to produce products are exchanged
 - Labor market
 - Capital market
 - Land market

The circular flow of goods and incomes

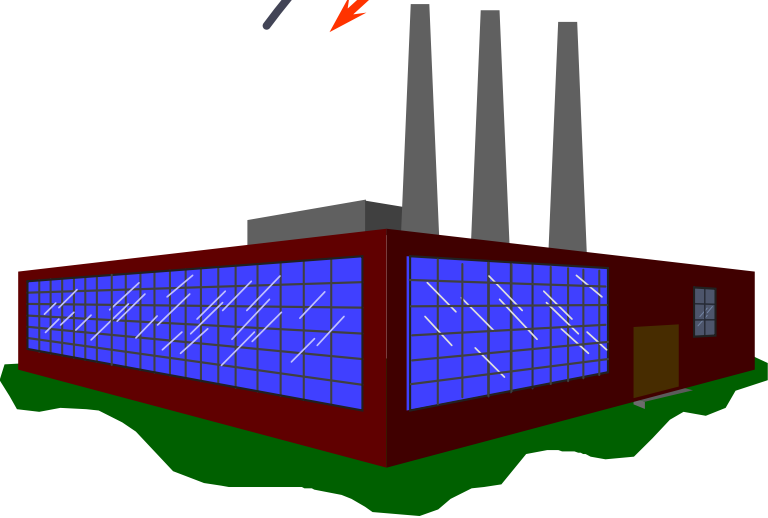


The circular flow of goods and incomes



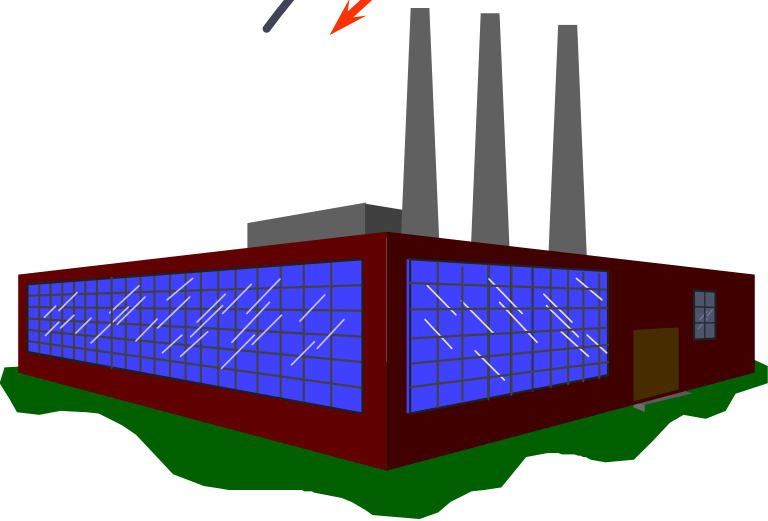
Goods and services

Consumer
expenditure



Goods and services

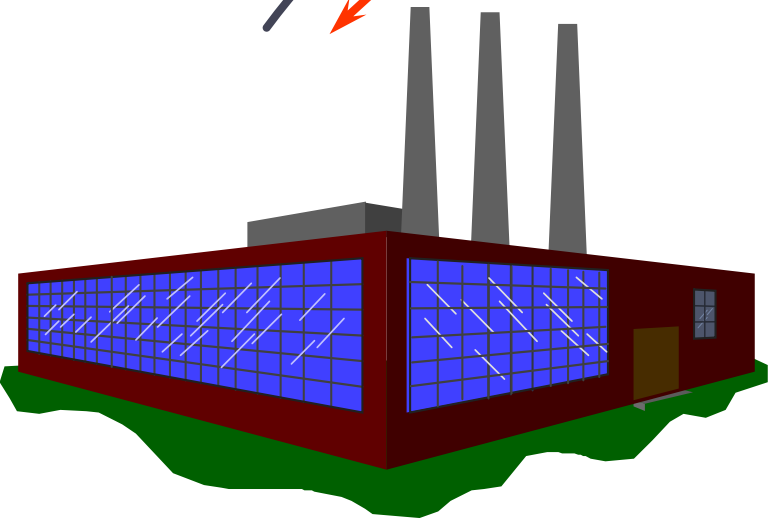
Consumer
expenditure



Services of factors of production (labour, etc)

Goods and services

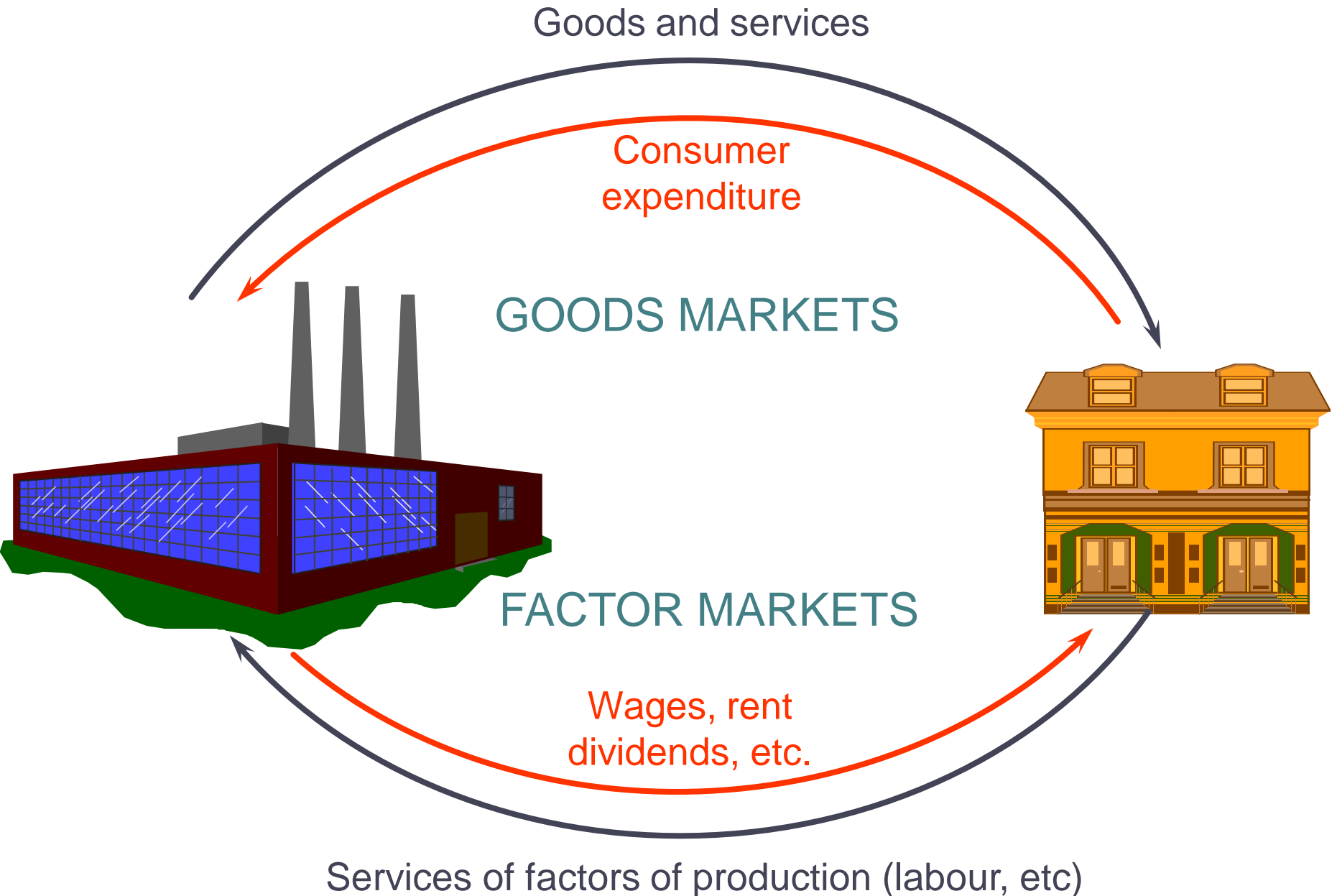
Consumer
expenditure



Wages, rent
dividends, etc.

Services of factors of production (labour, etc)

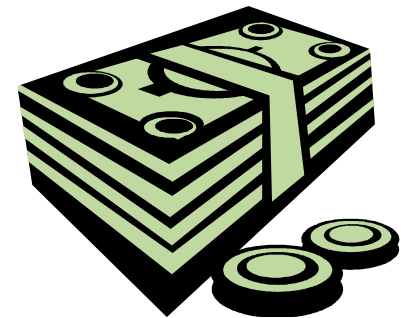
The circular flow of goods and incomes



NATURE AND FUNCTION OF PROFIT

- Difference between the revenues earned from the sale of goods and services and the costs incurred in earning these revenues

$$\text{Profit} = \text{Revenues} - \text{Costs}$$



Revenues and Costs

- **Revenue** is the income earned by a firm through its normal course of business
- **Costs** -
 - **Actual costs** are the actual out of pocket expenditures of the firm to purchase/ hire the inputs it requires in production
 - **Opportunity Cost: Cost of foregone option.**

Definitions of Profit

- Accounting/Business Profit: Total revenue minus the explicit or accounting costs of production.
- Economic Profit: Total revenue minus the explicit and implicit costs of production.

Example:

- A graduate turns down a job offer at Rs. 60,000 per year to start his own venture. He is considering investing Rs. 200000 of his own money, which has been in a bank account earning 5% per year. The projected income statement for the year as prepared by an accountant is:

Income statement prepared by an accountant:

		(in Rs)
Sales		90,000
Less cost of goods sold		40,000
Gross Profit		50,000
Less: Advertising	10,000	
Depreciation	10,000	
Utilities	3,000	
Property Tax	2,000	
Misc. expenses	5,000	30,000
Net accounting profit		20,000

Opportunity costs

- Rs.200000 invested in business can earn interest in the bank account @ 5% per year
- Annual wage of a graduate being Rs.60000 per year

Why should engineers study economics?

Engineering is a great applied science that studies how to make solutions to practical scientific problems.

- While engineering deals with **how to solve these problems**, economics is the complementary science of **how to optimize** these solutions.
- Economics analyses production mathematically and statistically. For engineering, microeconomics is the invaluable tool to determine optimization with given resource constraints
- The best solutions in engineering are not always the **best-designed** or the ones of highest quality but also the ones which are **cost-effective** and efficient given constraints. Economics can master these concepts.