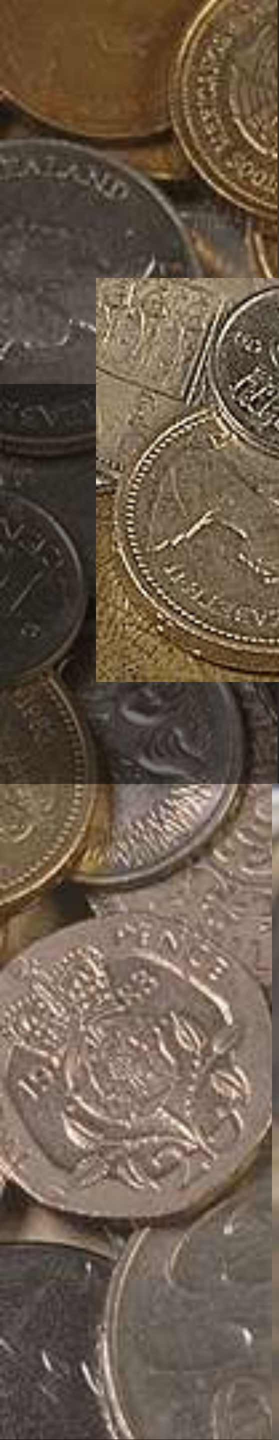

Engineering and Managerial Economics

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What Is Economics?

Economics is a social science concerned with the production, distribution, and consumption of goods and services. It studies how individuals, businesses, governments, and nations make choices on allocating resources to satisfy their wants and needs, trying to determine how these groups should organize and coordinate efforts to achieve maximum output.

Economics can generally be broken down into :

(1) **Macroeconomics**:-which concentrates on the behavior of the aggregate economy, and

(2) **Microeconomics:-** which focuses on individual consumers and businesses.

Macroeconomics

Thus, Macro Economics is the study and analysis of an economy as a whole. It studies not individual economic units like a household, a firm or an industry but the whole economic system. Macroeconomics is the study of aggregates and averages of the entire economy.

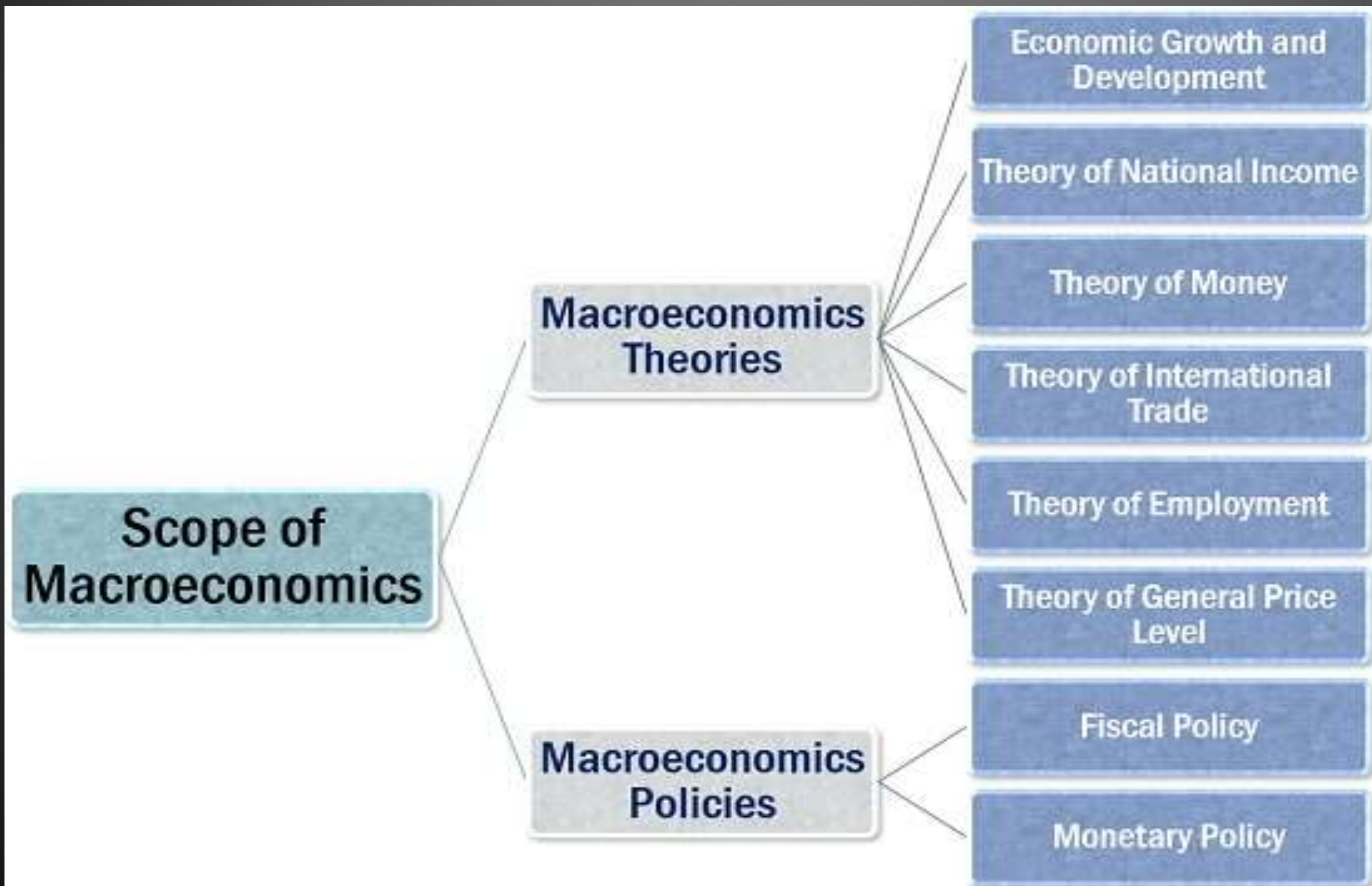
Macro Economics involves the study of:

- Behavior of an economic system as a whole
- Aggregates and averages covering the entire economy
- Behavior of large aggregators such as:
- Total Employment
- National Product
- National Income
- General Price-Levels etc.

Nature of Macro-economics

- It is a study of national aggregates
- It studies economic growth
- It ignores individual differences between aggregates

Scope of Macro-economics



Macroeconomics Theories

There are six significant theories under macroeconomics:

(1) Economic Growth and Development: evaluation of country's economy in terms of per capita income.

(2) Theory of National Income: evaluation of national income, including the income, expenditure and budgeting.

(3) Theory of Money: Macroeconomics analyzes the functions of the reserve bank in the economy, the inflow and outflow of money, along with its impact on the employment level.

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(4) **Theory of International Trade**: It is a field of study that enlightens upon the export and import of goods or services.

(5) **Theory of Employment**: helps to figures out the level of unemployment and prevailing employment issues and opportunities in the country.

(6) Theory of General Price Level: the analysis of product pricing and how these price levels fluctuate because of inflation or deflation.

Macroeconomics Policies

The government and the reserve bank functions together while determining the macroeconomic policies, for the nation's welfare and development.

The two segments of this section are as follows:

(1) **Fiscal Policy**: meeting the deficit of income over the expenditure; it is a form of budgetary decision under macroeconomics.

(2) **Monetary Policy**: Monetary policy is framed by the reserve bank in collaboration with the government. These policies are the measures taken to maintain economic stability and growth in the country by regulating the various interest rates.

Microeconomics

The part of economics whose subject matter of study is **individual units**, i.e. a consumer, a household, a firm, an industry, etc. It analyses the way in which the decisions are taken by the economic agents, concerning the allocation of the resources that are limited in nature.

It studies consumer behaviour, product pricing, firm's behaviour. Factor pricing, etc.

According to Spencer and Siegelman, *"Micro Economics is the integration of economic theory with business practices for the purpose of facilitating Decision Making and forward planning by Management"*

Nature of Micro-economics

- Micro in nature.
- It is pragmatic i.e. a practical subject.
- It is Normative – i.e. descriptive as well as prescriptive.
- It is conceptual.
- Micro Economics aims at Problem solving.
- Micro Economics borrows from mathematical, operational, research, statistical and accounting principles and tools to analyze and determine relationships between various economic variables.

Scope of Micro-economics

- Demand Analysis and Forecasting
- Cost and Product Analysis
- Pricing decision
- Profit Management
- Capital Management
- Analysis of Business Environment
- Business decisions related to economic concepts

Managerial Economics

Managerial economics is a discipline which deals with the application of economic theory to business management. It deals with the use of economic concepts and principles of business decision making. Formerly it was known as “Business Economics” but the term has now been discarded in favor of Managerial Economics.

Managerial Economics may be defined as the study of economic theories, logic and methodology which are generally applied to seek solution to the practical problems of business.

According to *Spencer*and *Seegelman* “Business Economics (Managerial Economics) is the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management.”

Nature of Managerial economics

(1) **Micro in nature;**-Managerial economics is concerned with the analysis of finding optimal solutions to decision making problems of businesses/ firms.

(2) **Pragmatic:-** It is a practical and logical approach towards the day to day business problems.

(3) **Positive as well as Normative science:-** Managerial economics describes, what is the observed economic phenomenon (positive economics) and prescribes what ought to be (normative economics)

(4) **Conceptual in nature:-** Managerial economics is based on strong economic concepts.

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(5) **<u>Macro in nature:-</u>** A business functions in an external environment, i.e. it serves the market, which is a part of the economy as a whole.

(6) **<u>Multi-disciplinary</u>**:- It uses many tools and principles belonging to various disciplines such as accounting, finance, statistics, mathematics, production, operation research, human resource, marketing, etc.

(7) **<u>Science and Art both:-</u>** It come up with ‘technique to solve the problem’(Science) and also involves ‘application of those techniques’(Art) to solve the business problems.

Scope of Managerial Economics

(1) **Demand Analysis and Forecasting:-** A major part of managerial decision making depends on accurate estimates of demand. A forecast of future sales serves as a guide to management for preparing production schedules and employing resources. Demand analysis and forecasting occupies a strategic place in Managerial Economics.

(2) **Cost and production analysis**:- A wise production manger concerned with the volume of production, process, capital and labour required, cost involved, etc. to minimize cost of production by applying managerial economic concepts like- Cost concepts, cost-output relationships, Economics and Diseconomies of scale and cost control etc.

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(3) <u>Pricing Theory and Analysis of Market Structure</u>:- It focuses on the price determination of a product keeping in mind the competitors, market conditions, cost of production, maximizing sales volume, etc.

(4) <u>Profit Analysis and Management:-</u> Business firms are generally organized for earning profit and in the long period, it is profit which provides the chief measure of success of a firm. Economics tells us that profits are the reward for uncertainty bearing and risk taking.

(5) Capital and Investment Decisions: Capital is the most critical factor of business. Capital management implies planning and control of capital expenditure. The main topics dealt with under capital management are cost of capital, rate of return and selection of projects.

Role of Managerial Economics in business decision making

The performances of firms get analyzed in the framework of an economic model. The economic model of a firm is called the theory of the firm. Business decisions include many vital decisions like whether a firm should undertake research and development program, should a company launch a new product, etc.

Business decisions made by the managers are very important for the success and failure of a firm. Complexity in the business world continuously grows making the role of a manager or a decision maker of an organisation more challenging! The impact of goods production, marketing, and technological changes highly contribute to the complexity of the business environment.

Managerial Economics and Decision Making:

- A decision is simply a selection from two or more courses of action.
- The Essence of an economics is the solution to an economic problem.
- When two or more alternative courses of economic action are available there is the problem of choice- The economic problem

Optimization:

- Optimization is the act of choosing the best alternative out of all the available ones.
- It describes how decisions or choice among alternatives are taken or should be made.
- It is important in efficiently managing an enterprise's resources and thereby maximizing shareholder wealth.
- Optimization is a paint which is either maximum or minimum.
- It helps in making decision.

Some of important Business Decision Problems

Product Price and Output

- Make or Buy decision
- Production Technique
- Advertising media and intensity
- Inventory management decision
- Investment and Financing Decision
- Cost Decision
- Marketing decision

Decision Sciences

Tools and Techniques of analysis:

- Numerical Analysis
- Statistical Analysis
- Forecasting
- Game Theory
- Optimization

Managerial Economics is use of Economics concepts and Decision Science Methodologies to solve managerial decision Problems.

Steps of Decision Making Process

6. Sensitivity Analysis

5. Make a Choice

4. Forecast the Consequences

3. Discover the Alternatives

2. Determine the Objective

1. Define The Problem

1.Define the Problem

What is the problem and how does it influence managerial objectives are the main questions. Decisions are usually made in the firm’s planning process. Managerial decisions are at times not very well defined and thus are sometimes source of a problem.

2. Determine the Objective

In practice, there may be many problems while setting the objectives of a firm related to profit maximization and benefit cost analysis. Are the future benefits worth the present capital? Should a firm make an investment for higher profits for over 8 to 10 years? These are the questions asked before determining the objectives of a firm.

3. **Discover the Alternatives**

For a sound decision framework, there are many questions which are needed to be answered such as – What are the alternatives? What factors are under the decision maker’s control? What variables constrain the choice of options? The manager needs to carefully formulate all such questions in order to weigh the attractive alternatives.

4. **Forecast the Consequences**

Forecasting or predicting the consequences of each alternative should be considered. Conditions could change by applying each alternative action so it is crucial to decide which alternative action to use when outcomes are uncertain.

5. **Make a Choice**

Once all the analysis and scrutinizing is completed, the preferred course of action is selected. In this step, the objectives and outcomes are directly quantifiable. It all depends on how the decision maker puts the problem, how he formalizes the objectives, considers the appropriate alternatives, and finds out the most preferable course of action.

6. Sensitivity Analysis

Sensitivity analysis helps us in determining the strong features of the optimal choice of action. It helps us to know how the optimal decision changes, if conditions related to the solution are altered. Thus, it proves that the optimal solution chosen should be based on the objective and well structured. Sensitivity analysis reflects how an optimal solution is affected, if the important factors vary or are altered.


THANK YOU