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# **PRINCIPLES OF MACROECONOMICS-I**

**B.E.C.C.-133**

**Chapter Wise Reference Book  
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*Based on*

**C.B.C.S. (Choice Based Credit System) Syllabus of**

**I.G.N.O.U.**

**& Various Central, State & Other Open Universities**

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# QUESTION PAPER

June – 2023

(Solved)

## PRINCIPLES OF MACROECONOMICS-I

B.E.C.C.-133

Time: 3 Hours ]

[ Maximum Marks : 100

Note: Answer questions from all the Sections as per instructions.

### SECTION-A

Note: Answer any two questions from this Section:

**Q. 1. Explain the circular flow of income and output in an economy. What are the leakages from the system?**

**Ans. Ref.:** See Chapter-2, Page No. 19, 'Circular Flow of Income'.

**Q. 2. Define national income. How do we measure national income by expenditure method?**

**Ans.** National income is the sum total of the value of all the goods and services manufactured by the residents of the country, in a year., within its domestic boundaries or outside. It is the net amount of income of the citizens by production in a year. To be more precise, national income is the accumulated money value of all final goods and services produced in a country during one financial year. Computation of National Income is very vital as it indicates the overall health of our economy for that particular year. The aggregate economic performance of a nation is calculated with the help of National income data. The basic purpose of national income is to throw light on aggregate output and income and provide a basis for the government to formulate its policy, programs, to maximize the national welfare of the people. Central Statistical Organization calculates the national income in India.

**Also See Ref.:** Chapter-3, Page No. 41, 'Expenditure Method'.

**Q. 3. Explain, with the help of diagrams how output and employment are determined in the classical system.**

**Ans. Ref.:** See Chapter-4, Page No. 60, 'Output and Employment in the Classical System'.

**Q. 4. What are the functions of money ? Describe the measures of money supply.**

**Ans. Ref.:** See Chapter-8, Page No. 121, 'Functions of Money' and Page No. 122, 'Measures of Money Supply'.

### SECTION-B

Note: Answer any four questions from this Section:

**Q. 5. Discuss the Fisher's approach to quantity theory of money.**

**Ans. Ref.:** See Chapter-9, Page No. 129, 'Quantity Theory of Money: Fischer's Approach'.

**Q. 6. Bring out the various instruments of monetary policy in India.**

**Ans. Ref.:** See Chapter-10, Page No. 146, 'Instruments of Monetary Policy'.

**Q. 7. Explain the concept of Keynesian cross by using appropriate diagram.**

**Ans. Ref.:** See Chapter-5, Page No. 84, Q. No. 5.

**Q. 8. With the help of a diagram, explain the effect of change in tax rates on equilibrium output.**

**Ans. Ref.:** See Chapter-6, Page No. 92, 'Effect of Change in Government Spending and Tax Rate'.

**Q. 9. What is meant by net exports ? Explain how a change in exchange rate affects net exports.**

**Ans. Ref.:** See Chapter-3, Page No. 47, 'Net Exports' and Chapter-7, Page No. 110, Q. No. 6.

**Q. 10. Explain the process of credit creation by the banking system.**

**Ans. Ref.:** See Chapter-8, Page No. 119, 'Credit Creation by Banking System'.

**Q. 11. Discuss the concept of quantitative easing and its impact on money supply.**

**Ans. Ref.:** See Chapter-10, Page No. 147, 'Quantitative Easing'.

SECTION-C

**Q. 12. Write short notes on any two of the following.**

**(a) Liquidity Trap.**

**Ans.** A liquidity trap is an adverse economic situation that can occur when consumers and investors hoard cash rather than spending or investing it even when interest rates are low, stymieing efforts by economic policymakers to stimulate economic growth.

A liquidity trap may develop when consumers and investors keep their cash in checking and savings accounts because they believe interest rates will soon rise. That would make bond prices fall, and make them a less attractive option.

Since Keynes' day, the term liquidity trap has been used more broadly to describe a condition of slow economic growth caused by widespread cash hoarding due to concern about a negative event that may be coming.

**(b) High-powered money.**

**Ans.** The current practice is to explain the determinant of the money supply in terms of monetary base or high-powered money. High-powered money is the sum of commercial bank reserves and currency (notes and coins) held by the Public. High-powered money is the base for the expansion of Bank deposits and creation of money supply. Thus, High power money The supply of money varies directly with changes in the monetary base and inversely with the currency and reserve ratios. The use of high-powered money consists of the demand of commercial banks for the legal limit or required reserves with the central bank and excess reserves, and the demand of public for

currency.  $50 + H = C + RR + ER$  Where, C represent currency RR = Required reserves ER = The Excess reserves A commercial bank's reserves depend upon its deposits. But a bank usually hold reserves in excess of its required reserves. In fact, Bank do not advance loans up to the legal limits precisely less than that. Hence the need arises for maintaining excess reserves by them. Thus, the money supply is determined by the required reserve ratio and the excess reserve ratio of commercial bank. The required reserves ratio (RRr) is the ratio of required reserves to deposit ( $RR / D$ ) and the excess reserve ratio (ERr) is the ratio or excess reserves to deposits ( $ER / D$ ). ML\_\_ £ 11-4--1 Edit The demand for currency by the public is expressed as a proportion of Bank deposits. Thus the currency ratio  $Cr = C / D$  Where C is the currency and D deposits. The currency ratio is influenced by such factors as changes in income levels of the people, the use of credit instruments by the public, and uncertainties in economic activity.

The formal relation between the money supply and high-powered money can be stated as in the form of equations: The money supply (M) consists of deposits of commercial bank (D) and currency (C) held by the public. Thus the supply of money,  $M = D + C$  (1) High-powered money (H) (or monetary base) consists of currency held by the public (C) puts required reserves (RR) and excess reserves of commercial banks.

**(c) Balance of Trade.**

**Ans. Ref.:** See Chapter-7, Page No. 105, 'Balance of Trade'.

**(d) Invisible Hand.**

**Ans. Ref.:** See Chapter-4, Page No. 60, 'Invisible Hand'.

■ ■

# **Sample Preview of The Chapter**

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# PRINCIPLES OF MACROECONOMICS-I

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## Issues and Concepts

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1

### INTRODUCTION

To understand and learn any subject, it is necessary to understand the concepts of that subject. We learn this subject only by learning those concepts. In the first part of this unit we have learned about the nature and scope of economics. Till now you have been familiar with microeconomics, which covers topics related to economic agents like households and firms. In the context of households, our main concern is utility maximization with budget constraints. Similarly, in the context of firms, profit maximization (or its dual cost minimization) is subject to a resource constraint. We have learnt through various diagrams how families make choices, what hindrances they face, and how optimal levels of consumption are attained. These optimization problems faced by any household can be explained through diagrams and can also be solved by mathematical methods, especially linear algebra.

A similar treatment is used to analyze the activity of firms, where firms maximize their production level when the prices of inputs and their available resources are known. The answer to the question – ‘does the same maximization problem is applicable in the context of countries also?’ is - Yes, countries also face some objective tasks, and they also face problems. Some Objective functions for a country are maximization of growth in Gross Domestic Product (GDP), minimization of household poverty, maintaining a stable price

level, reducing inequality in the distribution of income among individuals, etc. Macroeconomics is a different framework to analyze these issues.

Macroeconomics is that branch of economics in which we study the functioning of the entire economy. Accordingly, it interacts with appropriate variables, such as national income, national consumption, national savings, national investment, exports, imports, etc. many of these variables are related to micro economic units. There are no mere aggregations.

### CHAPTER AT A GLANCE

#### WHY STUDY MACROECONOMICS?

At the beginning of the twentieth century, there was no such branch of economics as macroeconomics. According to Kugman and Wells, ‘Macroeconomics’ was coined by Ragnar Frisch in the year 1933. Theoretical development in macroeconomics in the year 1936 by J. This became clear with the publication of the book ‘General Theory of Interest, Employment and Money’ written by J.M. Keynes.

As we said earlier, macroeconomics is concerned with the study of aggregate level activities in any economy. The need for a separate branch of macroeconomics arose because what applies to individual units may not apply to the entire economy. For example, suppose a firm employs workers to produce a product (say, cement).



She can hire as many workers as she needs at the current wage rate. An increase in the demand for labor by a single firm has no effect on the wage rate. However, if firms increase their demand for labor (say, due to economic growth and optimism in the country), it will experience a shortage of labor and an increase in wage rates. Moreover, there is a limited number of workers available in a country. Therefore, from this time onwards the demand for labor will increase the wage rate, not the supply of labor.

Let us consider another example of savings by a family and Total savings of a country.

It is commonly believed that we should not spend all our income but should save some part of it for the future. In fact, a person can increase his future income level in the form of interest by saving more. By the way, there is another aspect of this topic also.

Whenever a person saves some part of his income, his consumption expenditure reduces by the same amount. As a result, the demand for the goods and services (say, clothes etc.) on which the money is spent decreases.

The sales of the merchant from whom he buys decline and as a result, the merchant's income (profit) decreases. Due to the decrease in the income of the businessman, his expenditure on goods and services also decreases. This sequence continues.

We should not forget that when we consume we create demand for goods and services. This demand for goods and services leads to production activities and employment generation in the country. No demand for goods and services results in no production, no employment, and no income generation. Thus, it would be in the national interest that there should be a steady increase in domestic consumption. In the above context, it is often said that thrift is certainly a personal virtue but it is also a social vice. This is called the paradox of saving.

There are many types of trees in the forest and each of them can be different. Microeconomics is like studying trees in a forest, i.e. their species, size, growth, age etc. On the other hand, macroeconomics is like studying the forest, such as its area, density, composition, and overall ecosystem. As forests and trees are equally important, similarly, macro aspects are as important as individual aspects. Microeconomics is useful in analyzing the activities of firms and households, macroeconomics is used for policy formulation and policy evaluation. Some crucial topics like economic growth, inflation, employment, national debt payment balance, business cycle etc. are part of macroeconomics and need to be analyzed at the macro level.

#### **CERTAIN CONCEPTS**

Here some frequently used concepts in macroeconomics are being presented.

##### **Stocks and flows**

Any stock is measured at some point in time. For example, the capital stock of any country includes machines, equipment and buildings. It refers to that portion of national wealth that is reproducible (i.e., man-made); It includes those resources which help in the production of goods and services. Capital stock can be measured at a particular date. Money supply, labor force, and external debt are some other examples of stock.

Flows are measured in terms of some time interval; accordingly, it is a rate. In microeconomics, as you must have seen, the production of any firm can be measured on a per day or per month basis. Without any time dimension, production will remain vague. Similarly, if a person says that his income is Rs. 10,000, it must be unclear – is it per day, per week, or per month? The same logic applies in macroeconomics. The gross domestic product (GDP) of any country is a flow. It represents the value of final goods and services produced in a year.

Income, expenditure, savings, investment, consumption, profit, loan etc. are examples of

flows. The stock increases over time through changes in accumulation. This change in capital stock is reflected by investment. Mathematically, a stock can be viewed as the integral of a flow variable over a period of time.

### Short Run and Long Run

You will know the concepts related to short run and long run in microeconomics. Some factors of production are fixed in the short run. Capital and technology for any firm are considered fixed in the short run; They can be changed only in the long term. Accordingly, in the long run there are no constraints before a firm and it can maximize its output if all production factors are variable.

In macroeconomics, we routinely treat some variables as somewhat inflexible only in the short run, especially the price level and wage rates. As we will see in the following units, traditional economists considered prices and wage rates to be completely flexible in the sense that they adjust to changes in aggregate demand and aggregate supply instantaneously. According to Keynes, these variables are inflexible and take time to adjust to their desired level. Accordingly, prices and wages reach their equilibrium levels only in the long run and not in the short run. Since policy makers are concerned with the short run also, they consider inflexibility in prices and wages in policy formulation.

The flow of capital investment between all sectors of the economy is possible only in the long run, not in the short run. Exchange of capital between countries is another variable which adjusts to its equilibrium level only in the long run. The effect of these types of flows extends only over a period of time.

### Economic Models

In economics we often use the word 'paradigm' or 'model'. It means a simplified explanation of reality. It helps us in understanding, analyzing and predicting economic behavior. Any economic model can be for any microeconomic agent like a

family or a firm. In macroeconomics, it represents the functioning of the overall economy.

In macroeconomics, we point out relevant macroeconomic factors (e.g. income, production, expenditure, investment, savings, exports etc.) and set up relationships between them. The relationships between these houses can be presented through diagrams and mathematical equations. Macroeconomic models may be without mathematical expressions, but may not be precise or accurate.

Any economic model is based on some concepts. These concepts are intended to cover the essential elements without ignoring the finer details. Let us understand this through an example. In the example of a firm, we assume that there are two factors of production, namely capital and labor. We place all types of labor in a homogeneous category - capital does not differentiate between a manager and a worker in the workplace. Similarly, while describing an indifference curve we ignore the type of families. The activities of a rich family will be different from the activities of a poor family; or the activities of a family in a rural area will be different from the activities of a family in an urban area. We don't pay attention towards such details because we just need to consider the response of households to changes in prices and income. For different objectives we need to consider different models.

In the Keynesian model, we consider aggregate indicator variables such as total consumption, total investment, government expenditure and net exports. We determine the equilibrium level of output for the overall economy, not considering the activities of households and firms.

Many growth models (such as the Harrod-Dommar model or the Solow model) assume that there is only one sector in the economy and an aggregate production function that shows the relationship between a function of both total output and all inputs (i.e., total capital and total labour). It may seem ambiguous but the purpose of

these growth models is to analyze the equilibrium conditions for economic growth, savings ratio and population growth. These models do not serve the details but the broad conclusions extracted are very important for policy formulation. Does the growth rate vary in different countries? Solutions to questions like these can be found through the above growth models.

### Growth Rate

We use growth rate frequently in our day-to-day activities. A person is keen to know the rate of increment in salary over the year, rate of interest on savings and rate of inflation affecting his purchasing power.

At a macro level, he might be interested in the rate at which a country's population is growing or GDP is growing. The measurement of growth rate is the same in all cases. The annual growth rate of a variable is calculated as follows -

Growth Rate =  $(\text{Value in current year} - \text{Value in previous year}) / \text{Value in previous year} \times 100$

Growth rate of GDP =  $(\text{Current year's GDP} - \text{Previous year's GDP}) / \text{Last year's GDP} \times 100$

Let us find the growth rate of GDP (we often see this phrase in newspapers). (We often use the word growth in the context of GDP growth).

We find that India's GDP at current prices in FY 2018-19 was Rs. 190.10 lakh crore whereas in the year 2017-18 at current prices It was Rs. 170.95 lakh crore. If we substitute these values in the above equation we get  $(190.10 - 170.95) / 170.95 \times 100 = 11.20$  percent

Accordingly, the GDP growth rate calculated above for the year 2018-19 will be 11.20 percent. As we find in official statistics and reports published in newspapers. India's GDP growth rate has not been so high during the year 2018-19. It was quite low. The error we have made here is that we are considering the present value of GDP which includes output growth and price growth. Our objective, however, is to estimate the growth in production during the financial year 2018-19. We need to keep the impact of price rise neutral,

for this we consider GDP at constant prices. GDP at constant prices in India for the year 2019 is shown on the base year 2011-12. India's GDP rate at constant prices for the year 2018-19 is Rs. 140.78 lakh crore which in the year 2017-18 was Rs. 131.80 lakh crore (The base year taken is 2011-12, accordingly, these values are in the prices of the year 2011-12.) By putting these values in above equation we can easily access GDP growth rate, in the year 2018-19, the actual, GDP growth rate was as follows:

$(140.78 - 131.80) / 131.80 \times 100 = 6.81$  percent.

### PRODUCTION POSSIBILITY CURVE

Almost all countries aim at achieving higher economic growth. But the economic growth of a country cannot exceed a limit.

This range is limited by the availability of inputs like land, labour, capital, raw materials, energy and technical know-how. The financial resources which are mandatory to use these natural resources are also limited. The financial budget of a country gives information about the government policies and key areas of the government.

The budget itself shows how much money is to be spent on different sectors of the economy. This is necessary because a country has limited resources that can be allocated to various items of expenditure. Generally we have seen that any country faces many constraints. It may be that there is not enough budget to carry out various activities or a shortage in the supply of some strategic raw materials or a delay in starting a project. And there could be a long development period between start and end of a project, etc.

In macroeconomics, we present the constraints facing a country through a Production Possibility Curve (PPC). For the sake of simplicity, let us assume that the said country produces only two commodities (say, a capital good and a consumable good). Here the said curve (PPC) is concave at the origin (see Figure 1) which shows that more production of one commodity can be done only if the production of the other commodity is reduced.