

# TOPPER'S INSTITUTE

## CA INTER – ECONOMIC OF FINANCE - RTP

### Q.1

- (a) Define National Income. Draw the basis of distinction between GDP at current and constant prices. [3 Marks]
- (b) You are given the following data on an economy in millions:

Consumer Expenditure (inclusive of indirect taxes)	110 m
Investment	20 m
Government Expenditure (inclusive of transfer payments)	70 m
Exports	20 m
Imports	50 m
Net Property Income from abroad	10 m
Transfer payments	20 m
Indirect taxes	30 m
Population	0.5 m

- (i) Calculate the Gross Domestic Product at market prices.  
(ii) Calculate the Gross National Income at market prices.  
(iii) Calculate the Gross Domestic Product at factor cost.  
(iv) Calculate the per capita Gross National Income at factor cost.

[3 Marks]

### Q.2

- (a) Define consumption function? Examine what would happen if aggregate expenditures were to exceed the economy's production capacity? [3 Marks]

- (b) For an Economy with the following specifications

Consumption,  $C = 50 + 0.75 Y_d$

Investment,  $I = 100$

Government Expenditure,  $G = 200$

Transfer Payments,  $R = 110$

Income Tax =  $0.2Y$

- (i) Find out the equilibrium of income and the value of expenditure multiplier.  
(ii) If autonomous taxes worth ₹ 25 Crores are added. Find out equilibrium level of Income.  
(iii) If the economy is opened up with exports  $X = 25$  and imports  $M = 5 + 0.25Y$  Calculate the new level of Income and balance of Trade (Assume that there are no autonomous Taxes.)

[3 Marks]

**Q.3**

- (a) Define the concept of market failure. Describe the different sources of market failure. **[3 Marks]**
- (b) Identify the market outcomes for each of the following situations
- (i) A few youngsters play loud music at night. Neighbours may not be able to sleep.
  - (ii) Ram buys a large SUV which is very heavy.
  - (iii) X smokes in a public place.
  - (iv) Rural school students are given vaccination against measles.
  - (v) Traffic congestion making travel very uncomfortable.

**[3 Marks]**

- Q.4** Examine what types of fiscal policy measures are useful for redistribution of income in an economy?

**[5 Marks]****Q.5**

- (a) Describe the different determinants of money supply in a country.
- (b) What role does Market Stabilization Scheme (MSS) play in our economy?
- (c) Examine what would be the effect on money multiplier if banks hold excess reserves?
- (d) Write a note on Cash Reserve Ratio (CRR). Explain the operation of CRR.

**[4 Marks]**

- Q.6** Explain the nature of changes in exchange rates and their impact on real economy?

**[5 Marks]**

# ECONOMICS - RTP ANSWERS

## Ans.1

- (a) National Income is defined as the net value of all economic goods and services produced within the domestic territory of a country in an accounting year plus the net factor income from abroad. According to the Central Statistical Organization (CSO) 'National income is the sum total of factor incomes generated by the normal residents of a country in the form of wages, rent, interest and profit in an accounting year'.

National income may be measured at current prices or at constant prices. If goods and services produced in a year are valued at current prices, i.e., market prices prevailing in the year in which goods and services are produced, we get national income at current prices or nominal national income. If goods and services produced in a year are valued at 'fixed' prices, i.e., prices that prevailed during a previous year chosen as base year, we get national income at constant prices or real national income. Thus GDP at constant prices is the value of domestic product in terms of constant prices of a chosen base year. A base year is a carefully chosen year which is a normal year free from price fluctuations.

The GDP market prices is sensitive to changes in average price level. The same physical output will correspond to a different GDP level if the average level of market prices changes. That is, if prices rise, GDP measured at market prices will also rise without any real increase in physical output. This is misleading because it does not reflect changes in the actual volume of output. GDP at current prices makes no adjustment for inflation or deflation. GDP at constant prices is inflation /deflation corrected and can be used to measure true growth of GDP. For example, the GDP of 2015-16 may be expressed either at prices of that year or at prices that prevailed in 2011-12. In the former case, GDP will be affected by price changes, but in the latter case GDP will change only when there has been a change in physical output. Since real national income accurately reflects the real change in physical output of a country, it can be used to make a year to year comparison of changes in the volume of output of goods and services.

- (b) (i)  $GDP_{MP} = C + I + G + (X - Z)$   
 $110 + 20 + (70 - 20) + (20 - 50) = 150$  million
- (ii)  $GNP_{MP} = GDP$  at market prices + net property income from abroad  
 $150 + 10 = 160$  million
- (iii)  $GDP$  at factor cost =  $GDP$  market prices – indirect taxes  
 $150 - 30 = 120$  million
- (iv) Per capita Income =  $GNP$  at factor cost / Population =  $(160m - 30m) / 0.5$  million  
 $= 130 / 0.5 = 260$

## Ans.2

- (a) Consumption function is the functional relationship between aggregate consumption expenditure and aggregate disposable income, expressed as  $C = f(Y)$ ; shows the level of consumption (C) corresponding to each level of disposable income (Y)

Aggregate expenditures in excess of output lead to a higher price level once the economy reaches full employment. Nominal output will increase, but it merely reflects higher prices, rather than additional real output.

- (b) (i) Level of Disposable income  $Y_d$  is given by  
 $Y_d = Y - \text{Tax} + \text{Transfer Payments}$ , Where, Transfer Payment = 110  
 $Y - 0.2Y + 110 = 0.8Y + 110$ ,  
 and  $C = 50 + 0.75 Y_d$

$$50 + 0.75(0.8Y + 110) \text{ (where } Y_d = 0.8Y + 110)$$

$$= 50 + (0.75 \times 0.8Y) + (0.75 \times 110) = 132.50 + 0.6Y$$

$$C = 132.50 + 0.6Y$$

Now  $Y = C + I + G$ , Where  $C = 132.50 + 0.6Y$ ,  $I = 100$ ,  $G = 200$  (Given)

$$Y = (132.50 + 0.6Y) + 100 + 200$$

$$= 432.50 + 0.6Y$$

$$Y - 0.6Y = 0.4Y = 432.50$$

$$\text{or } Y = 432.50 / 0.4 = ₹ 1,081.25 \text{ Crores}$$

$$\text{Expenditure Multiplier} = \frac{1}{1-b} = \frac{1}{1-0.6} = 2.5 \text{ (Multiplier in closed economy} = \frac{1}{1-b})$$

- (ii) If autonomous taxes worth of ₹ 25 Crores added, this will reduce disposable income by ₹ 25 crores

Level of Disposable income  $Y_d$  is given by

$$Y_d = Y - \text{Tax} + \text{Transfer payments}$$

Thus  $Y_d = Y - 0.2Y + (110 - 25) = 0.8Y + 85$  (Income Tax Given =  $0.2Y$ , Transfer Payments = 110)

$$C = 50 + 0.75(0.8Y + 85) \text{ (Given } C = 50 + 0.75 Y_d)$$

$$C = 50 + (0.75 \times 0.8Y) + (0.75 \times 85)$$

$$50 + 0.6Y + 63.75 = 113.75 + 0.6Y$$

$$Y = C + I + G$$

$$(113.75 + 0.6Y) + 100 + 200 = 413.75 + 0.6Y \text{ (} C = 113.75 + 0.6Y, I = 100, G = 200)$$

$$Y - 0.6Y = 413.75$$

$$0.4Y = 413.75$$

$$Y = 413.75 / 0.4 = ₹ 1034.375 \text{ Crores.}$$

- (iii)  $Y = C + I + G + (X - M)$ , Where Consumption,  $(C) = 132.50 + 0.6Y$ , Investment  $(I) = 100$ , Government Expenditure  $(G) = 200$

Since  $X = 25$ ,  $M = 5 + 0.25Y$

$$Y = (132.50 + 0.6Y) + 100 + 200 + \{25 - (5 + 0.25Y)\} \text{ (Given } X = 25 \text{ crores and } M = 5 + 0.25Y)$$

$$Y = (132.50 + 0.6Y) + 100 + 200 + (25 - 5 - 0.25Y)$$

$$= (1 - 0.6 + 0.25) Y = 452.50$$

$$Y = 452.50 / 0.65$$

$$= ₹ 696.15 \text{ Crores}$$

$$\text{Imports} = 5 + 0.25Y = 5 + (0.25 \times 696.15) = ₹ 179.04 \text{ Crores}$$

Balance of trade = Exports – Imports

$$\text{Balance of Trade} = 25 - M = 25 - 179.04 = -₹ 154.04 \text{ crores.}$$

Thus, there is adverse balance in Trade of ₹ 154.04 crores

### Ans.3

- (a) Market failure is a situation in which the free market fails to allocate resources efficiently in the sense that there is either overproduction or under production of particular goods and services leading to less than optimal market outcomes. The reason for market failure lies in the fact that though perfectly competitive markets work efficiently, most often the prerequisites of competition are unlikely to be present in an economy. There are two aspects of market failures namely, demand -side market failures and supply side market failures. Demand -side market failures are said to occur when the demand curves do not take into account the full willingness of consumers to pay for a product. Supply-side market failures happen when supply curves do not incorporate the full cost of producing the product.

There are four major reasons for market failure. They are: market power, externalities, public goods, and incomplete information.

1. Excess market power or monopoly power causes the single producer or small number of producers to produce and sell less output than would be produced in a competitive market and to charge higher prices that give them positive economic profits.
2. Externalities, also referred to as 'spillover effects', 'neighbourhood effects' 'third - party effects' or 'side-effects', occur when the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price. Externalities cause market inefficiencies because they hinder the ability of market prices to convey accurate information about how much to produce and how much to buy.
3. Public goods (also referred to as a collective consumption good or a social good) are indivisible goods which all individuals enjoy in common and are non excludable and non rival in consumption. Each individual's consumption of such a good leads to no subtraction from any other individual's consumption and consumers cannot (at least at less than prohibitive cost) be excluded from consumption benefits of that good. Public goods do not conform to the settings of market exchange and left to the market, they will not be produced at all or will be under produced.
4. Incomplete information: The assumption of complete information which is a feature of competitive markets is not fully satisfied in real markets due to highly complex nature of products and services, inability of consumers to quickly / cheaply find sufficient information, inaccurate or incomplete data, ignorance, lack of alertness and uncertainty about true costs and benefits. Misallocation of scarce resources occurs due to information failure and equilibrium price and quantity is not established through price mechanism. Asymmetric information also referred to as the 'lemons problem' which occurs when there is an imbalance in information between buyer and seller i.e. when the buyer knows more than the seller or the seller knows more than the buyer also distort choices and cause market failure. Adverse selection, another source of market failure, is a situation in which asymmetric information about quality eliminates high - quality goods from a market. Moral hazard i.e. opportunism characterized by an informed person's taking advantage of a less-informed person through an unobserved action arises from lack of information about someone's future behavior also causes market failure. In short, asymmetric information, adverse selection and moral hazard affect the ability of markets to efficiently allocate resources and therefore lead to market failure because the party with better information has a competitive advantage.

- (b) The market outcomes of different situations are given below;
- (i) Negative consumption externality; social cost not accounted for; market failure; overproduction
  - (ii) Negative consumption externality; environmental externality; wear and tear of roads; increased fuel consumption; added insecurity imposed on others; social cost not accounted for; overproduction.
  - (iii) Negative consumption externality; overproduction.
  - (iv) Public good, merit good; positive consumption externality; under production; scope for government intervention.
  - (v) Negative externality; social cost not accounted for; overproduction.

**Ans.4** Many developed and developing economies are facing the challenge of rising inequality in incomes and opportunities. Redistribution of income to ensure distributive justice is essentially a fiscal function. Fiscal policy is a chief instrument available for governments to influence income distribution and plays a significant role in reducing inequality and achieving equity and social justice. The distribution of income in the society is influenced by fiscal policy both directly and indirectly. While current disposable incomes of individuals and corporates are dependent on direct taxes, the potential for future earnings is indirectly influenced by the nation's fiscal policy choices.

Government revenues and expenditure have traditionally been regarded as important instruments for carrying out desired redistribution of income. Each of these can be manipulated to achieve desired distributional effects.

- A progressive direct tax system appropriately designed to protect incentives ensures that those who have greater ability to pay contribute more towards defraying the expenses of government and that the tax burden is distributed fairly among the population.
- Indirect taxes can be differential: for example, the commodities which are primarily consumed by the richer income group, such as luxuries, are taxed heavily and the commodities the expenditure on which form a larger proportion of the income of the lower income group, such as necessities, are taxed light. Property taxes act both as a source of revenue and as an efficient redistributive instrument.
- A carefully planned policy of public expenditure helps in redistributing income from the rich to the poorer sections of the society. This is done through spending programmes targeted on welfare measures for the disadvantaged, such as :
  - (i) poverty alleviation programmes
  - (ii) free or subsidized medical care, education, housing, essential commodities etc. to improve the quality of living of poor
  - (iii) infrastructure provision on a selective basis
  - (iv) various social security schemes and more efficient social transfers under which people are entitled to noncontributory, means -tested social pensions, conditional cash transfer programs, unemployment relief, sickness allowance etc.
  - (v) subsidized production of products of mass consumption
  - (vi) public production and/ or grant of subsidies to ensure sufficient supply of essential goods, and
  - (vii) strengthening of human capital for enhancing employability etc.

The design of redistribution policies should justify both re distributive and efficiency objectives. Choice of a progressive tax system with high marginal taxes may act as a strong deterrent to work, save and invest. Therefore, the tax structure has to be carefully framed to mitigate possible adverse impacts on production and efficiency. Additionally, the redistributive fiscal policy and the extent of spending on redistribution should be consistent with the macroeconomic policy objectives, especially macroeconomic stability of the nation.

### Ans.5

- (a) There are two alternate theories in respect of determination of money supply. According to the first view, money supply is determined exogenously by the central bank. The second view holds that the money supply is determined endogenously by changes in the economic activities which affect people's desire to hold currency relative to deposits, rate of interest, etc. The current practice is to explain the determinants of money supply based on 'money multiplier approach' which focuses on the relation between the money stock and money supply in terms of the monetary base or high-powered money. This approach holds that total supply of nominal money in the economy is determined by the joint behaviour of the central bank, the commercial banks and the public.

The money supply is defined as

$$M = m \times MB$$

Where M is the money supply, m is money multiplier and MB is the monetary base or high powered money.

$$\text{Money Multiplier (m)} = \frac{\text{Money Supply}}{\text{Monetary Base}}$$

Money multiplier m is defined as a ratio that relates the change in the money supply to a given change in the monetary base. It denotes by how much the money supply will change for a given change in high-powered money. The multiplier indicates what multiple of the monetary base is transformed into money supply.

If some portion of the increase in high-powered money finds its way into currency, this portion does not undergo multiple deposit expansion. In other words, as a rule, an increase in the monetary base that goes into currency is not multiplied, whereas an increase in monetary base that goes into supporting deposits is multiplied.

- (b) Market Stabilization scheme (MSS), introduced in April 2004, is a monetary policy intervention by the RBI to withdraw excess liquidity (or money supply) by selling government securities in the economy. Under the Market Stabilisation Scheme (MSS) the Government of India borrows from the RBI (such borrowing being additional to its normal borrowing requirements) and issues treasury bills/dated securities that are utilized for absorbing from the market excess liquidity of a more enduring nature arising from large capital inflows. The bills/bonds issued under MSS would have all the attributes of the existing treasury bills and dated securities. The bills and securities will be issued by way of auctions to be conducted by the Reserve Bank. These bonds are issued by RBI on the behalf of Government in order to mop out excess liquidity from the market (Banks) and not for raising capital for government.
- (c) The money multiplier approach to money supply considers the ratio of deposit to reserve,  $e = \{ER/D\}$  which represent the behaviour of commercial banks as one of the determinants of money supply. The commercial banks are required to keep only a part or fraction of their total deposits in the form of cash reserves. For the commercial banking system as a whole, the actual reserves ratio may be greater than the required reserve ratio since the banks keep with them a higher than the statutorily required percentage of their deposits in the form of cash reserves. The additional units of high-powered money that goes into 'excess reserves' of the commercial banks do not lead to any additional loans, and therefore, these excess reserves do not lead to creation of money. Therefore, if the central bank injects money into the banking system and these are held as excess reserves by the banking system, there will be no effect on deposits or currency and hence no effect on money multiplier and therefore on money supply.
- (d) Cash Reserve Ratio (CRR) refers to the fraction of the total net demand and time liabilities (NDTL) of a scheduled commercial bank in India which it should maintain as cash deposit with the Reserve Bank. The RBI may set the ratio in keeping with the broad objective of maintaining monetary stability in the economy. The credit creation capacity of commercial banks is inversely related the cash reserve ratio. Higher the CRR, lower will be the credit creation and vice versa. CRR has, in recent years, assumed significance as one of the important quantitative tools aiding in liquidity management. Higher the CRR with the RBI, lower will be the liquidity in the system and vice versa. During deflation, the RBI reduces the CRR in order to enable the banks to expand credit and increase the supply of money available in the economy. In order to contain credit expansion during periods of inflation, the RBI increases the CRR.

**Ans.6** Changes in exchange rates portray depreciation or appreciation of one currency against another. The terms, '₹ currency appreciation' and 'currency depreciation' describe the movements of the exchange rate. Currency appreciates when its value increases with respect to the value of another currency or a basket of other currencies. On the contrary, currency depreciates when its value falls with respect to the value of another currency or a basket of other currencies. If the Rupee dollar exchange rate changes from  $\$1 = ₹ 65$  to  $\$1 = ₹ 68$ , the value of the Indian Rupee has diminished or Indian Rupee has depreciated and the US dollar has appreciated. On the contrary, home-currency appreciation or foreign-currency depreciation takes place when there is a decrease in the home currency price of foreign currency (or alternatively, an increase in the foreign currency price of home currency). The home currency thus becomes relatively more valuable. Under a floating rate system, if for any reason, the demand curve for foreign currency shifts to the right representing increased demand for foreign currency, and supply curve remains unchanged, then the exchange value of foreign currency rises and the domestic currency depreciates in value.

Following are the impact of exchange rate changes on the real economy:

The developments in the foreign exchange markets affect the domestic economy both directly and indirectly. All else equal, an appreciation (depreciation) of a country's currency raises (decreases) the relative price of its exports and lowers (increases) the relative price of its imports leading to changes in import and export volumes and consequently on import spending and export revenue. Depreciation adversely affects importers as they have to pay more domestic currency on the same quantity of imports and benefits exporters as forex earnings will fetch more in terms of domestic currency.

For an economy where exports are significantly high, a depreciated currency would mean a lot of gain. Depreciation of domestic currency primarily decreases the relative price of domestically produced goods and diverts spending from foreign goods to domestic goods. Increased demand, both for domestic import-competing goods and for exports encourages economic activity and creates output expansion. Overall, the outcome of exchange rate depreciation is an expansionary impact on the economy at an aggregate level.

As a result of depreciation or devaluation, the terms of trade of the nation can rise, fall or remain unchanged, depending on whether price of exports rises by more than, less than or same percentages as price of imports. Depreciation also can have a positive impact on country's trade deficit as it makes imports more expensive for domestic consumers and exports cheaper for foreigners. However, the fiscal health of a country whose currency depreciates is likely to be affected with rising import payments and consequent rising current account deficit (CAD) and diminished growth prospects of overall economy.

Depreciation is also likely to fuel consumer price inflation, directly through its effect on prices of imported consumer goods and also due to increased demand for domestic goods. The impact will be greater if the composition of domestic consumption baskets consists more of imported goods. Indirectly, cost push inflation may result through possible escalation in the cost of imported components and intermediaries used in production.

When a country's currency depreciates, production of export goods and import substitutes becomes more profitable. Therefore, factors of production will be induced to move into the tradable goods sectors and out of the non tradable goods sectors. By lowering export prices, currency depreciation helps increase the international competitiveness of domestic industries, increases the volume of exports, augments windfall profits in export oriented sectors and import-competing industries and promotes trade balance. If exports originate from labor-intensive industries, increased export prices will have spiraling effects on wages, employment and income. If inputs and components for manufacturing are mostly imported and cannot be domestically produced, increased import prices will increase firms' cost of production, push domestic prices up and decrease real output.

Foreign capital inflows are characteristically vulnerable to exchange rate fluctuations. Depreciating currency hits investor sentiments and has radical impact on patterns of international capital flows. Foreign investors are likely to be indecisive or highly cautious before investing in a country which has high exchange rate volatility. Foreign direct investment flows are likely to shrink and foreign portfolio investments are likely to flow into debt and equity. This may shoot up capital account deficits affecting

the country's fiscal health. Reduced foreign investments also widen the gap between investments required for growth and actual investments. Over a period of time, unemployment is likely to mount in the economy.

If investor sentiments are such that they anticipate further depreciation, there may be large scale withdrawal of portfolio investments and huge redemptions through global exchange traded funds leading to further depreciation of domestic currency. This may result in a highly volatile domestic equity market affecting the confidence of domestic investors.

Company that have borrowed in foreign exchange through external commercial borrowings (ECBs) but have not sufficiently hedged against foreign exchange risks would also be negatively impacted as they would require more domestic currency to repay their loans. A depreciated domestic currency would also increase their debt burden and lower their profits and impact their balance sheets adversely. Exchange rate fluctuations make financial forecasting more difficult for firms and larger amounts will have to be earmarked for insuring against exchange rate risks through hedging.

Investors who have purchased a foreign asset, or the corporation which floats a foreign debt, will find themselves facing foreign exchange risk. However, remittances to homeland by non residents and businesses abroad fetches more in terms of domestic currency.

In case of foreign currency denominated government debts, currency depreciation will increase the interest burden and cause strain to the exchequer for repaying and servicing foreign debt.

Depreciation would enhance government revenues from import related taxes, especially if the country imports more of essential goods. Depreciation would also result in higher amount of local currency for a given amount of foreign currency borrowings of government.