
UNIT 20 TOPICS IN INTERNATIONAL ECONOMICS

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20.1 OBJECTIVES

After going through this unit, you will be able to:

- 1 differentiate between absolute advantage and comparative advantage;
- 1 explain how international trade takes place on the basis of comparative advantage;
- 1 discuss the Ricardian model of international trade;
- 1 describe the gains from trade;
- 1 define the various measures of terms-of-trade; and
- 1 explain and analyse the balance of payments.

20.1 INTRODUCTION

In this unit we will discuss the nature of international trade and the reasons why countries trade with each other. To begin with, we will examine whether there is any difference between internal and international trade. This will be followed by two questions: why trade takes place and how it does so.

Two theories will help us explain the gains from trade. This will be followed by the concept and structure of balance of payments along with the meaning of deficit/surplus in a country’s balance of payments.

In this unit our attempt is to make a very simple presentation of issues related to international trade. We have steered clear of tedious and ‘difficult’ derivatives while bringing the essence of concepts to you.

20.2 COMPARATIVE ADVANTAGE AS BASIS FOR TRADE

Our wants are unlimited and resources are limited. We cannot satisfy all our wants. As the resources are also limited, we try to make the best use of them both

in consumption and production. One may be capable of undertaking many economic activities or able to produce a number of goods. But his efficiency or productivity will not be the same to produce all the goods. He may be relatively efficient for some goods less efficient or inefficient for some other goods. The same is true for all individuals. In view of this, persons choose their own lines of economic activities in which they are more efficient than others. This division of economic activities is also called division of labour. What is true for individuals is true for regions or nation.

Trade, whether within a country or between countries is an **act of exchange**. We exchange one thing for another. Like individuals, countries also normally do not produce each and everything. Only under restrictive assumption of a closed economy, where we do not have external trade and economic relations, almost all the commodities are produced within a country and exchange or barter takes place within the country.

Needless to say that in the closed economic scenario, we presume above, it will result neither in maximization of production nor optimum use of factors of production. In fact closed or isolated economies are unthinkable these days. Rapid changes in transport and communication have changed the meaning of place and time. Transportation has become so quick that one can take his breakfast in India and lunch in France/Germany and evening tea somewhere else. Earlier it took many days to cover few hundred miles.

In international trade we have two important questions: Why does trade take place? And how does trade take place? We will answer these one by one.

20.2.1 Comparative Cost Advantages - Why Trade Takes Place ?

An important question is why people trade? The answer is very simple. It is human nature to exchange one thing for another. People exchange things not for the sake of exchange but for the simple reason that they cannot produce everything efficiently and at a lower cost. Similarly, a country, which has, for example, mineral resources only and limited cultivable land, is bound to import agricultural commodities. Thus, we find that like individuals, countries also differ in factor endowments. As a result, some countries can produce other commodities more efficiently at a lower cost. There is a possibility that a country can produce most of the commodities at a lower cost as compared to many others. But the level of efficiency will not be the same for all goods. In some commodities, that country may be the best, in some it may be better and still in some others it may be just good. The efficiency is not equal in all lines of production. It is of different degrees. As it will not be possible for that country to produce all commodities because of the limitations of resources and also of time factor, production of these commodities where its superiority is most marked will be undertaken. We can, therefore, conclude that trade takes place because of relative differences in costs, which result from differences in factor endowments.

Let us take an example. We take two countries and assume that they produce only two commodities. [The number of countries and commodities can be more, but specialization in production will be on the basis of efficiency, that is, relative costs of production]. Let A and B be two countries and both of them produce commodities X and Y. We also assume that with certain amount of labour and capital different units of X and Y are produced. Let the following table show quantities of X and Y that can be produced in their countries with given amounts of capital and labour.

Country	Commodity	
	X	Y
A	20	10
B	10	20

Country A can produce 20 units of X and 10 units of Y. Country B, on the other hand, with the same amount of labour and capital can produce 10 units of X and 20 units of Y. In this example A is most efficient in the production of X and B is most efficient in the production of Y. The cost ratio of X and Y in A is 1:2 and B country it is 2:1. Obviously, under these circumstances, country A will gain by producing X only and country B will gain by producing Y commodity only. Country A has absolute advantage in X and country B has absolute advantage in Y. It is called the theory of absolute advantage and was propounded by Adam Smith who assumed labour to be the only factor of production. He thought that these absolute differences in advantage are the basis of international trade.

The basis of absolute cost advantage theory is that cost ratios of commodities differ in different countries, but, it has assumed that each country is absolutely superior in one line of economic activity. This appears unrealistic. Because in a group of countries, a country can be relatively more or less efficient. It is not normal to find a country absolutely superior. Superiority is always relative. Therefore, it is more practical to consider relative or comparative differences in cost. David Ricardo gave his explanation on the basis of comparative differences in the cost of production. It is, therefore, known as comparative cost theory of international trade. Before considering comparative differences in cost, let us take one example where costs are different. Again we assume, A and B, two countries producing X and Y commodities such that

Country	Commodity	
	X	Y
A	20	10
B	10	20

In this example country A has advantage in both the commodities as 20 unit of X and 10 unit of Y can be produced with a certain amount of labour and capital. While country B, with the same amount of factors, can produce 10 units of X and 5 units of Y. Obviously country A is superior and more efficient in both X and Y commodities and country B is less efficient in both commodities. Let us now consider the ratios of commodities in both the countries. In country A, the ratio of X and Y is 2:1 and in country B also the ratio of X and Y is 2:1. Under such circumstances trade may not take place as both the countries have an equal cost ratio. In country A two units of X will exchange for one unit of Y and in country B also two units of X will exchange for one unit of Y. Although country A is absolutely superior in both the commodities and country B is absolutely inferior in both X and Y trade will not take place as no country will gain because the cost-ratios are similar or identical in both the countries. Here, we find that despite 'advantage' there will be no trade. However, specialization and trade can be mutually beneficial even for such economies if there exists substantial economies of scale in both the industries. Yet, it is not possible to pinpoint which commodity a country must specialize in.

20.2.2 Ricardo's Comparative Cost Theory

Let us take an example to explain Ricardo's comparative cost theory. As usual we have two countries and two commodities and the amount of labour needed (in hours) to produce one unit each of X and Y as given below:

Country	Hours required for Commodity	
	X	Y
A	120	100
B	80	90

From the above example, it is clear that country A is able to produce 1 unit of X with 120 hours of labour while it can produce 1 unit of Y with 100 hours of labour. Thus, X is more expensive than Y. One unit of X will cost $120/100$ units of Y. In country B, it takes 80 hours of labour to produce 1 unit of X and 90 hours of labour to produce 1 units of Y. Notice that country B has absolute advantage in both lines of production because it takes less labour in B than A to produce both X and Y. However, within B, Y is more expensive per unit than X. One unit of X costs $80/90$ or 0.89 units of Y. Although country B has absolute advantage in both lines of production, each country has a comparative advantage in different goods. A has a comparative advantage in producing that good whose opportunity cost is lower in this country than in the other country. The opportunity cost of 1 unit of X for Y in country A is $120/100 = 12/10$ while in country B it is $80/90$ or $8/9$. Thus, the opportunity cost of X for Y is lower in B than A. On the other hand, the opportunity cost of 1 unit of Y for X in country A is $100/120 = 10/12$, while in country B it is $90/80$ or $9/8$. So opportunity of Y for X is lower in A than in B. Thus, B has a comparative advantage in producing X while A has a comparative advantage in producing Y.

We saw above that in country A, one unit of X traded for $120/100$ or 1.2 units of Y, while in B, one unit of X traded for $80/90$, or 0.89 units of Y. If country A could import one unit of X for less than 1.2 units of Y, and if country B could import more than 0.89 units of Y for 1 unit of X, both countries would gain from international trade.

Ricardo did not discuss about the point where the actual rate will be determined. He only explained why trade takes place. The actual rate will be determined by the mutual demand of A and B countries. This was explained by J.S. Mill who propounded the theory of Reciprocal Demand. In fact, the other question, how trade takes place was explained by J.S. Mill. Both the theories together constitute the Classical Theory of International Trade.

Before we proceed further, it will be necessary to discuss Ricardo's assumptions regarding comparative cost theory. You may note that assumptions are a necessary part of theory. They simply facilitate our analysis and formulation of the theory. But if assumptions interfere with the conclusions then we have to critically examine the nature of the assumptions. Ricardo's assumptions, for the sake of convenience, can be put into two categories. The first category will consist of facilitating assumptions. In this category we put the following: (1) Two countries, (2) Two commodities, (3) Labour cost and not money cost, (4) No transport costs, (5) Free

trade, (6) Gold standard, (7) Perfect Competition in the production of the goods. The assumption of two countries and two commodities is just to facilitate the analysis. We can increase the number of countries and commodities. Trade will take place only on the basis of comparative cost. We are giving below three countries and three commodities case :

Countries	Commodities		
	X	Y	Z
A	10	11	12
B	9	11	10
C	11	10	9

Figures in table show number of units of respective commodities that a given amount of labour can produce. Now in this case also the trade will place only on the basis of comparative advantage or disadvantage. Country A is most efficient in Z commodity, country C is most efficient in X commodity and country A and B are equally efficient in the production of Y commodity. The basis of trade will remain the same irrespective of the number of countries and commodities.

Next, the labour cost can be converted into money costs. We can express the costs of products in terms of the currency of the participating countries. Instead of giving cost in terms of units of commodities with fixed amount of labour, we can give unit cost in terms of money. The country which can produce larger units of a commodity with the given amount of labour will have lower prices (the lower cost in money terms) as compared to a country which is producing lesser number of units with the same amount of labour. The fact is that it will not invalidate the theory. Even if we consider money cost the terms of trade will remain the same. The same logic applies to transport cost. Transport costs will change the cost ratios (as we will have to add the cost of transport to money cost). Trade according to Ricardo's theory of comparative cost will take place on the basis of comparative or relative difference in cost.

If we drop the assumption of gold standard, it will not change the basis of trade. Even under paper currency, the trade will take place on the basis of cost differences.

Assumption of free trade is necessary. If countries adopt restrictive trade practices like tariff and quotas, then the normal pattern of trade is disrupted. There will be distortion. It will not be a normal situation.

Ricardo's labour cost approach has been severely criticised by many economists, particularly, Ohlin. Ohlin in his 'Interregional and International Trade' in Appendix has given his criticism of the comparative cost theory. His argument is that labour cost approach is not the correct tool to find the cost of a commodity. Nobody can dispute this. Because these days labour cost can vary roughly from 30% to 60% depending upon the nature of the commodity. Capital is equally important. Once we accept the importance of capital, rate of interest assumes importance.

If capital accounts for a larger share in the cost, then even rate of interest can also bring about a change in the cost of production, the comparative advantage will be affected. These days technology has also assumed much importance. The fact is that labour cost is not the correct index of measuring cost of production. Labour cost alone cannot determine cost. Further, labour is not homogeneous. There are different types of labour like unskilled, skilled, trained and technical. All these have different wages or rates of remuneration. It will be difficult to find comparative

costs even if we accept labour costs.

The second category of Ricardo's assumption include,

- 1) both the countries are almost of same size,
- 2) their patterns of consumption are also similar,
- 3) that there will be complete specialization's.

These assumptions are really very restrictive in nature. Perhaps his overriding concern with complete specialization must have been responsible for incorporation of the other two. But overall implications of these three will be that trade may not be possible if two trading partners were vastly different in geographical sizes and had different pattern of consumption.

Heckscher-Ohlin Approach : Heckscher and Ohlin tried to analyses the question of why do different nations trade in a different manner. They tried to bring in factors other than labour explicitly into the trade model. They further tried to relate specialization to the factor endowments of the countries explicitly. These models also admit possibility of less than complete specialization. Thus, several of the shortcomings of Ricardo's formulations can be addressed under Heckscher-Ohlin framework. Take, for example, considerations such as: (1) trade is not determined by labour cost differentials alone, (2) the endowments of different resources processed by the trading countries determine the direction of specialisation, (3) the countries need not be of the same size, (4) they need not have similar patterns consumption either and finally, (5) trade need not lead to full specialization.

The assumptions of their model is that different countries have different endowments. Each country, even when faced with same kind technology as opened to other, picks up those technique of production which uses the factors available to it in relative abundance more intensively. The factor abundance must be reflected in relative factor prices in the society. Thus, a labour abundant society uses relatively labour-intensive technology and a capital abundant economy uses capital intensive technology. Not only that, the ones with more labour will have a relative advantage in expansions of labour intensive industry. Similarly the capital rich country finds it easier to expand its capital intensive industry. This way, factor abundance as reflected in relative factor prices, determines the direction of specialisation.

These things, we must admit, were not considered by Ricardo. Does it mean that Ricardo's comparative cost theory is wrong? No. It only means that Ricardo's theory was not comprehensive and also sophisticated. But 'why trade takes place' can only be explained by relative abundance or scarcity, resulting in comparative costs differences. Ricardo's measuring unit of cost was not correct. In fact, at the time, when Ricardo propounded his theory, labour cost approach was generally rather universally accepted. In fact it was the only measuring unit. Ricardo was justified in using the existing tool. Tools of analysis have changed and therefore refined version or a super structure can be created on the foundations laid down by Ricardo using new tools of analysis.

Check Your Progress 1

- 1) Is internal trade basically different from international trade? (Explain in one sentence)

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2) What is absolute difference in cost ? (Give example and explain)

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3) Will there be trade with equal differences in cost ?

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4) Explain the advantages of comparative cost principle.

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5) Discuss one important shortcoming of comparative cost principle.

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6) Analyse the effects of differences in endowments and specialization.

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20.3 TERMS OF TRADE

We have so far answered only one question, why trade takes place. The other aspect of the problem of trade is, how trade takes place, which is unanswered. It will depend upon how much of one country's commodity the other participating country is willing to accept against a certain amount of his own commodity. The fact is that we must know the terms of both the participating countries at which they are willing to exchange their commodities.

The determination of terms of trade is also an important problem. The comparative cost differences provide the limits within which terms of trade can be determined. The actual point is the outcome of the effectiveness of the demand of both the countries. J.S. Mill's theory of reciprocal demand explains the determination of terms of trade between two countries.

20.3.1 Theory of Reciprocal Demand and Terms of Trade

J.S.Mill's theory of reciprocal demand explains how trade takes place. The problem is very simple. A comparative difference in cost-ratios sets the limits within which participating countries can import and export goods and commodities. How the terms of trade are determined between two countries? One may like to know how much, say, one country will export and how much it will import. The Ricardian theory does not answer this.

Determination of terms of trade was discussed by J.S. Mill. Because unless we determine terms we cannot explain how many units of goods and commodities will be imported/exported. This important aspect of trade was discussed by J.S. Mill on the foundations laid down by David Ricardo. Given the difference in cost, the demand in both the countries will determine terms of trade i.e., how much of a commodity one country is willing to purchase in exchange for a certain amount of other country's commodity. It is, therefore, the demand for each other's goods or the reciprocal demand, which will determine the terms of trade between the participating countries. J.S. Mill, on the basis of the cost ratios (that is, accepting

the differences in comparative cost as the cause for trade as suggested by Ricardo) explained the determination of terms of trade.

Let us again take two countries, A and B, producing two commodities X and Y.

Country	Commodity	
	X	Y
A	120	100
B	90	80

Again to repeat, with the given amount of factors, a country can produce, 120 units of X or 100 units of Y. Similarly country B can produce 90 units of X or 80 units of Y. It may be pointed out that although country B in isolation is better equipped in the production of X as compared to Y but as compared to country A, it is inferior in the production of both commodities. According to the comparative cost theory, country A will specialize in the production of X and country B in the production of Y commodity.

Let us consider the cost ratios of both the countries as given above. In country A the ratio of X and Y is 12/10. It means 12 units of X will exchange 10 units of Y, or vice versa. In country B it is 9:8, that is, 9 units of X can be exchanged for 8 units of Y, or vice-versa. As indicated above, country A will be happy to get 10 units of Y by exporting anything less than 12 units of X. Similarly country B will be happy to get more than 9 units of X by exporting 8 units of Y. In between these extremes the terms of trade will be determined as there is gain to both the countries.

A is willing to give 120 units of X for 100 units of Y. B is willing to accept 90 units of X for 80 units of Y or 112.5 units of X for 100 units of Y. Thus, if they agree to a rate between 112.5 to 120 units of X for 100 units of Y, both will be better off.

If the rate of exchange so determined is equal to A country's internal ratio, it will not be willing to trade. So there will be no trade. If the rate is closer to rate of transformation in country A, most of benefits from trade accrues to B.

The concept of reciprocal demand is also criticized by a number of economists. Reciprocal demand considers only the demand of both the countries. But demand alone cannot help us in determining the terms of trade. The supply side, that is, the cost aspect is also important. In fact, there are two sets of demand and two sets of supply. Marshall's analysis overcomes this limitation. Marshall uses the concept of offer curves for analyzing the reciprocal demand. The offer curves of a country tells us, how much of a commodity one country is willing to exchange for another commodity. The point at which offer curves of respective countries cut each other will be the equilibrium point and terms of trade will be determined at that point.

20.3.2 Types of Terms of Trade

Before we discuss gains from trade, it will be better to have some idea about different types of terms of trade. In general, the terms of trade refers to a rate at which goods or commodities are exchanged between two countries. If for example, 5 units of X of country A can be exchanged by 10 units of Y of country B then the terms of trade will be 5X: 10Y or X:2Y. It means that terms of trade can also determine gains from trade. For example, if the price of export commodities

increases and the price of import commodities decreases or even remains constant, then this country will relatively gain more from the other participating country. It can buy more goods by exporting less goods. The opposite will happen if import price rises and export price either remains constant or declines. In view of this, it is desirable to discuss types of terms of trade.

1) Commodity Terms of Trade

It is also called net barter terms of trade. As the term indicates, terms of trade are determined on the basis of exchange of commodities. When commodities exchange between two countries, it is actually barter. It is a ratio between the export and import prices of a country. In simple terms commodity of trade at a point of time is equal to

$$T_c = \frac{P_x}{P_m}$$

(where T_c is commodity terms of trade, P is price and X and M refer to exports and imports, respectively). When we consider a period of time, then the changes in commodity terms of trade can be explained. We can write O for the base year and I for next period. If we want to find out the change in period I as compared to the base year, then it can be put as follows:

$$TC_1 = (PX_1 - PX_0)/PM_0.$$

2) Gross Barter Terms of Trade

Gross barter terms of trade as the term indicates is a modified version of commodity terms of trade. It takes into account total exports and imports of a country instead of a particular commodity export and import. The gross barter terms of trade at a point of time will indicate the relation of ratio between total quantity of imports and total quantity of exports. In the form of a formula we can put it as follows :

$$T_g = Q_m/Q_x$$

Where, Q_m = total quantity of imports, Q_x = total quantity of exports.

If this ratio is higher then it is favorable to the country concerned and if the ratio is lower then it is unfavorable to the country. Like commodity terms of trade, we can consider gross barter terms of trade over a period of time. We can compare between two points of time. As above, the base period will be indicated by O and the next following period by 1 . The formula can be modified a little :

$$\text{Base Year : } TG_0 = Q_{M0}/Q_{X0}$$

$$\text{Current Year : } TG_1 = Q_{M1}/Q_{X1}$$

3) Income Terms of Trade

G.S. Dorrance has formulated the concept of income terms of trade. It is an improvement over commodity or gross barter terms of trade. In this concept of terms of trade, we take into account index of export prices along with export quantity and in case of import we consider only index of import prices. As the import and export prices are determined by total imports and exports, it can rightly be considered as a modified or improved version of gross barter terms of trade.

Income terms of trade establish a ratio between index of export prices and export quantity on the one hand and index of import prices on the other hand. To put it into a formula

$$T_y = \left(\frac{P_x}{P_m} \right) Q_m$$

Here T_y is the income terms of trade (it may be pointed out that in economic analysis normally Y and not I is written for income. Therefore Y has been written). T_y measures country's export based capacity to import.

A change in income terms of trade indicates the nature of changes in trade (import and export). If there is an increase in terms of trade, then it shows that a country can further increase its imports. If there is decrease then the reverse will be true, that is, the capacity to import will reduced. Incidentally, it can be added that if income terms of trade are favorable, it does not necessarily follow that barter terms of trade are also favorable. This is because of the concept of prices are more important and price-variation can make a change without causing a change in barter terms of trade.

4) **Single Factoral Terms of Trade**

Trade is a continuous process spreading over a period of time. It is possible that during the time period some changes can take place in the utilization of factors, which will result in an increase in productivity. Single factoral terms of trade takes into account of these changes in productivity in export sector. The index of the productivity in export industries has to be multiplied by the commodity term of trade giving,

$$T_y = \left(\frac{P_x}{P_m} \right) F_m,$$

Where T_s = Single Factoral Terms of Trade, P_x = Price index of exports, F_x = productivity.

Any improvement in productivity will be reflected in an improvement in terms of trade. At the same time there is disadvantages also. International trade implies open economy, that is, participating countries are maintaining economic relations with other trading countries. If we want to have the real and correct picture, then we must consider the changes in the productivity of the other country's export side also. When we consider changes in the productivity in both import and sectors and make necessary adjustment in the formula, then it is called **Double Factoral Terms of Trade**. In this we take account of changes in productivity of both importing and exporting countries. In view of this, we can modify the equation of single factoral terms of trade to take account of changes in the other country. It will be

$$T_d = \left(\frac{P_x}{P_m} \right) \left(\frac{F_x}{F_m} \right) = \frac{P_x F_x}{P_m F_m}, \text{ where}$$

$P_x F_x$ = price index of exports multiplied by productivity index of exports, $P_m F_m$ = price index of imports multiplied by the productivity index of imports.

In both cases it will indicate relative changes in productivity.

These are some of the main types of terms of trade. Besides Prof. Viner and Professor Kindleberger have also talked about 'Real Cost Terms of Trade' and 'Utility Terms of Trade.'

Terms of trade occupy an important place in international trade. It indicates the purchasing capacity of a country to purchase goods from other country. Every country wants to have favorable terms of trade because it shows its capacity to make purchases in the international market. On the other hand, unfavorable terms of trade indicates the limitations in making purchases in the international market. In fact, terms of trade can be considered as means of gain from trade.

Check Your Progress 2

- 1) What are terms of trade?
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- 2) What is the meaning of reciprocal demand?
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- 3) Will a country gain much if her cost ratios and terms of trade are identical?
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- 4) Discuss the main limitation of J.S. Mill's theory of reciprocal demand.
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- 5) Explain the concept of offer curves.
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- 6) Explain the meaning of commodity terms of trade.
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.....
- 7) Fill in the Blanks:
 - a) T_c = is terms of trade
 - b) T_y = is terms of trade
 - c) T_g = is terms of trade.

20.4 GAINS FROM TRADE

The discussion of why and how trade takes place clearly indicate the gains from trade. International trade is international division of labour. Just as individuals gain by division of labour, similarly countries also gain by international division of labour. Trade is an extension of division of labour between countries. Some of the important gains are as follows.

i) Optimum use of Resources

With division of labour there will be optimum allocation of resources and maximum production within a country and also between countries. Like individuals, when all the countries specialize in those lines of economic activities where they have comparative advantage, then naturally best use of economic resources will be made. And when best use of economic resources is there, production will be maximum.

Further, resources relatively speaking, are not abundant; continuous, prolonged and indiscriminate use will exhaust them soon. Besides, the maximum outcome will not be there. Therefore, a proper and careful use will be essential. International Trade makes it possible because of the comparative advantage in costs. A country which can produce a commodity at a lower cost than other countries will make a better use of existing resources. In an isolated country when resources are used to produce most of the required commodities, then naturally the optimum allocation of resources will not be feasible. Thus, we can say that if the countries trade then not only within a country but even at the international level, there will be desirable use of resources.

ii) Advantage of Large Scale Production

Division of labour is limited by the size of the market. If a country has limited demand then production will be less. International trade removes this limitation of the market. Now, a country will produce not only for his consumers but for the consumers of different countries. The size of the market has increased. As a result economies of large scale production will be operating. These economics can be listed below:

a) Economy in Large Scale Buying and Selling

A country now producing for a bigger market, will purchase inputs in large quantities. It is a common experience that when we make bulk purchases, there is economy in expenses. Similarly, the cost of selling per unit will decrease. Thus, there will be economy in large scale buying and selling.

b) Gains accruing due to Indivisibility of a Factor of Production

Every machine has an optimum capacity. If the market is limited then production from that machine will be less and the unit cost will be higher. The cost of commodity can be divided into fixed and variable cost. Total variable cost will increase with an increase in output. Fixed cost per unit will decline till the optimum point is reached. In view of this as the production will increase, the unit cost will decrease till the optimum point is reached. Thus, we can say that due to trade, production will increase and machines or productive units will be producing to the optimum level and as a result the cost will decrease.

c) Improvement in the Quality

Because of large scale production and competition in the market, the quality of commodities will increase. In fact, consumers will buy goods of better quality with a lower price. Therefore in order to secure the market, entrepreneurs (producers) will like to improve the quality of commodities. Continuous research and development will become a part of the business unit. The cold wind of competition in the international market will force producers to renovate or innovate. There may be limitation of the best technique available in the world. Besides, the competition will force producers not only to improve the quality but related development in the sources of raw material, banking facilities etc., Thus, there will be many gains from trade.

The gains from trade are not limited to optimum allocation of resources and advantages of large scale production only. Trade directly influences developmental effort of a country. It assumes the role of a leading sector in the process of economic development. It has also been called the engine of economic growth. The fact is that rapid development of an important sector can promote development of all other sectors in the economy.

20.4.1 Factors Determining Gains from Trade

The extent of gain from trade is determined by many factors. We can discuss them under the following heads:

Relative Differences in Cost Ratio

The extent of gain from trade is determined by the relative differences in cost ratios. If a country has greater differences in cost ratios it will gain more because if the differences are marginal then gains will also be marginal. Thus, gains are directly related to productivity and efficiency conditions prevailing in a country. Higher the productivity and efficiency greater will be the gains from trade.

Reciprocal Demand

Reciprocal demand also determines the extent of gain. If, for example, country A's demand is more and country B is not willing to supply at the existing rate, then rate will change in favour of B. Or, if country A's demand is less and country B is willing to supply more then the terms of trade will favour country A. The relative strength and elasticity of demand of both the countries will determine the gains from trade. In other words, the extent of gain from trade is determined by reciprocal demand.

Ultimately two factors figure out importantly in determining the gains from trade: Higher the efficiency in production, greater will be gains. Further, income and nature of the commodity, which will influence the demand, will influence the gain. As more than one country is involved in trade, we have to consider the relative capability and demand of both the countries.

Sometimes, size of a country also influences the gains. It can be said that the gains to a small country will be relatively larger, because, a small country faces many obstacles and limitations in large scale production. In this way size of a country also influences the gain. On the other hand, in a very small country, availability of domestic reasons will be limited in size and variety. This may have adverse effects on efficiency. Therefore, we cannot make any generalization and relate the gains to the size of an economy.

Check Your Progress 3

- 1) Will there be gain from International Trade if the cost ratios are the same in both the countries? (Answer in two sentences)

.....

- 2) Name two important gains from trade.

.....

- 3) How cost ratios affect gains from trade.

.....
.....
4) Is demand also important in determining gains from trade?
.....
.....

5) Will the size of the market influences the gains from trade?
.....
.....

20.5 BALANCE OF PAYMENTS

In this section, we will introduce you to the monetary aspect of international trade. When countries trade with each other, they pay in foreign exchange or foreign currencies. So, we will be talking here of trade among countries which is not barter (that is, not in terms of physical commodities). Each country has its own currency, its own monetary system. This complicates matters. We are paying attention to some of them here.

The fundamental tool for depicting international economic transaction is the balance of payments accounts. The balance of payments accounts are a summary accounting statement of the dealings of a country with the outside world. The balance of payments accounts constitute a record of the transactions between a country and the rest of the world in a specific time interval, usually a year. Hence the balance of payments are a flow, not a stock. This is important to remember. The balance sheet of a firm, or even the national balance sheet are stocks.

There are two fundamental things to keep in mind while talking of the balance of payments. The first is that a distinction be made between debits and credits. Secondly, debit and credit items are put in proper sub accounts.

Let us begin with the second point. The balance of payments account (presented as a table) is usually divided into two main parts and each part has several subdivisions. The two main parts are:

- 1) **The current account:** This account shows all flows that directly affect the national income accounts of the country. It includes:
 - i) exports and imports of merchandise
 - ii) exports and imports of services
 - iii) inflows and outflows of income
 - iv) income from investments
 - v) grants, remittances and other transfers.
- 2) **The capital Account:** This account shows all flows that directly affect the national balance sheet. It includes:
 - i) direct investment
 - ii) portfolio investment
 - iii) other private capital
 - iv) changes in cash balances, which include:

- a) changes in official reserves assets, that is, changes in the reserves held by official monetary authorities, resulting from intervention in foreign exchange markets.
- b) changes in cash balances held by banks and other foreign exchange dealers.

Item (a) above is actually a balancing item. Particularly it is treated separately from government capital. The main reason is that official reserve transactions are undertaken by the authorities in order to manage the country's balance of payments (BoP).

Let us now come to the other main point about the balance of payments. This principle is the distinction between debits and credits. Here, remember two things: First, since the balance of payments table is an accounting statement, the items balance in the aggregate. The total debits always equal total credits (any difference is shown as statistical discrepancy). Every individual transaction in the balance of payments table appears twice because the BoP accounts are built on the principles of double entry book-keeping. Each individual transaction appears for the first time in the current or capital account and then for the second time in the cash component of the capital account.

The second thing to remember is, that is, a general sense, any action that creates an obligation for a foreign economic agent to pay a domestic economic resident is a credit, whereas any action that creates an obligation for a domestic resident to pay a foreign agent is a debit.

Let us have a closer look into structures of balance of payments account of countries.

20.5.1 Structure of Balance of Payments

The terms balance of trade and balance of payments are often used in international trade. These two terms have different meanings. Balance of trade as compared to balance of payments has a limited and narrower meaning. Balance of trade refers only to goods, commodities and services' trade. It is also called visible and invisible import and exports. Goods and commodities can be seen and therefore they are called visible items. Services like shipping, freight and insurance are called invisible items. Balance of trade has, thus, restricted meaning. Balance of payments on the other hand is more comprehensive. It is an account of total transactions of a country with the outside world for the period of time under consideration. When we call it an account of total transactions it takes account of not only visible and invisible items of trade but other transactions as well like capital transactions.

The principle of double entry book-keeping is followed in making an account of balance of payments. But there is one difference. In business debits are shown on the left side and credit on the right side. In balance of payments, credit is shown on the left side and debit on the right side. But a question naturally arises. What do we mean by credit and debit in international trade? All transactions of a country involving receipts are credit. It includes exports of goods, commodities and services and also the capital and other things which a country is receiving. All these things are kept on the credit side as they are receipts. On the other hand, when we purchase some items, we have to make payments for them. It is the debit side. All imports of goods commodities and services require payments to the other country. These import items are kept on the debit side. Besides these, a country can give capital assistance to another country or payments of loans and interest to international institutions like World Bank and International Monetary Fund or from some other countries. They are all payments and therefore included on the debit side.

Thus, we can group all transactions of a country either as receipts or payments. Receipts are kept on the left side and payments on the right side.

Now the next question that follows is about the items of balance of payments and their classification. Important items of balance of payments are imports and exports of goods and commodities. Normally a country imports a number of commodities which cannot be produced cheaply or otherwise. Similarly, a country exports those goods and commodities which can easily be produced efficiently and economically. These commodities can be perishable goods, durable goods and also machines etc. A country will import goods only according to its requirements and needs. As suggested earlier all these items are included in visible items. These items can be either exports and imports.

The other items are services like shipping and insurance etc. These are different than visible items because services cannot be seen. For example when we export some goods through either air or water, services involved in such processes cannot be noticed. Therefore, invisible items include exports or imports of services. Normally a less developed country has to pay more for invisible items as services are not well developed in these countries.

These two items, visible and invisible, are included in **trade items**. Besides trade items, balance of payments also includes items which are called **transfer items**. These transfer items deal with financial transactions i.e., the transactions of money. The financial transactions can also be divided into two parts **unrequited transfers** and **capital transfers**. Unrequited transfers are basically different from capital transfers. The difference is of nature and type. To-day many people of different countries are working in other countries. Why they are working is not our concern in the context of balance of payments. These people remit a part of their earnings to their home country. Our concern is with their transaction. Sometimes people send gifts etc., to persons in other countries. It can be a gift check. Besides these, we have indemnities which countries may individually pay to other countries. For all these items in the case of which nothing is given in exchange, nor is there any commitment to return such items at a future date, are included in category of unrequited transactions. In fact these are the items where we do not bother about the cause but we consider only its effects. These transactions take place and are in the form of payments or receipts. Our only concern is to keep these under unrequited receipts or payments. It can be added here that generally a large number of people from less developed or developing countries go to other countries where they can earn more. Their remittances are normal as they send the money to their family members. We have to take account of these transactions also as they are included in balance of payments. Another important component of transfer item is capital transaction. These transactions include borrowings from foreign countries and international institutions, payments of loans and interest etc. In fact, international borrowing has come to stay. Countries take loans for development and other purchases. These can also be divided into receipts and payments. The amount which a country is receiving from other will be included in capital receipts and similarly capital payments will be those which a country is paying to other countries. These are the main items of balance of payments. We can make a hypothetical account of developing countries' balance of payments.

This balance of payments account has been divided into parts A and B for the sake of convenience. Part A included trade items only which has visible and invisible exports and imports of goods, commodities and services. Part B deals with transfer items. In transfer items money transactions take place between countries. These money transactions have also have been divided into sub-groups -unrequited

transactions and capital transfers. These are the four main groups under which we can include all transactions of country. This account is presented in Table 20.1.

If we carefully go throughout the table, we can make some important observations about the balance of payments.

Table 20.1 : Balance of Payments

(In. Rs. crore)

Credit Side		Debit Side		Balance Surplus or deficit
Part A				
TRADE TRANSACTIONS				
(i) Visible Exports	750	Visible Imports	950	-200
(ii) Invisible Exports	200	Invisible Imports	150	+50
Total of Trade items	950		1100	-150
Part B				
TRANSFER TRANSACTIONS				
(iii) Unrequited	150	Unrequited	100	+50
(iv) Capital Receipts	200	Capital Payment	100	+100
Total of Transfer Receipts	350		200	+150

First of all, it is important to note that the total receipts are equal to total payments. On the credit side we have Rs.1300 crore and on the debit side, we have Rs.1300 crore. There is balance between credit and debit sides. Total payments of this country are equal to total receipts. It means there is equilibrium in balance of payments. We can say that balance of payment always balances (in the account sense).

Secondly, if we consider different groups or heads, there is difference between receipts and payments. Let us first consider trade items. Under trade items, visible exports are of Rs.750. While imports are of Rs. 950 crore. The value of imports is Rs.200 crore more than the value of exports. In visible items, there is deficit as imports exceed exports by Rs.200 crore.

It means that the country under consideration is importing more than what it is exporting. This can also mean that the country is unable to meet its requirements or there are certain goods/commodities which cannot be produced are being imported. As exports are less than imports there is deficit. There can be many factors for lower level of exports. For example, the goods which are produced by this country are less in demand or its quality is inferior and price higher. We can say that it has limited export capacity and therefore, there is a deficit in visible items.

Invisible items give a different picture. Invisible exports are greater than invisible imports. The table shows that exports are of Rs.200 crore while imports are of Rs.150 crore under this heading. There is export surplus. Exports are greater by Rs. 50 crore as compared to imports.

We can say, now, that in trade items visible imports are higher by Rs. 200 crore and invisible exports are greater by Rs.50 crore only. If we consider the total receipts and payments under trade items only, we find that total receipts are equal to Rs.950 crore and total payments are equal to Rs. 1100 crore. The net gap between payments and receipts is of Rs.150 crores. Total payments are greater than total receipts. There is overall deficit in trade items. It can also be said that there is disequilibrium in balance of trade and the deficit is of Rs.150 crore.

Let us now consider transfer items. Transfer items are further sub-divided as unrequited items and capital items. We will consider receipts and payments under these two groups. It is clear from the balance of payments table that receipts under unrequited items are greater than payments. Receipts are of Rs. 150 crore and payments (debit side) are of Rs. 100 crore only. In this group receipts are greater than payments. We can say there is surplus in unrequited items. This surplus is of Rs.50 crore. The capital items also show that country is getting more than what it is giving. May be as a loan/grant from international institutions like IMF, World Bank or from some developed countries. This country is getting more assistance and its payments are limited to repayment of loans and interest thereon. Capital transactions like the unrequited transactions show greater receipts than payments. Under capital transactions, receipts amount to Rs.200 crore while payments are only of Rs. 100 crore. It means receipts are greater by Rs.100 crore than payments.

Let us now consider total surplus and total deficit in balance of payment. It will be easier to explain if we rearrange of balance of payment according to deficit/surplus.

It can be observed that in trade items, total receipts amount of Rs.950 crore while payments are of Rs.1100 crore, thus, leaving a gap of Rs.150 crore. We can say that there is deficit in balance of trade items, which is equal to Rs.150 crore. But this does not mean that there is deficit in balance of payments of this amount. We have to take account of transfer items also. Both the groups under transfer transaction, namely, unrequited transactions and capital transactions show greater receipts than payments. The table shows that unrequited receipts are greater than unrequited payments. There is surplus of Rs.50 crore. Similarly capital receipts are higher by Rs.100 crore than capital payments. Thus, total transfer items indicate a surplus of Rs.150 crore. Thus, we find that the deficit of trade items is wiped out by the surplus of the transfer items. The total receipts are equal to that payment. It is clear from the balance of payments schedule that the total receipts of this country are equal to Rs.1300 crore and total payments are also Rs.1300 crore. There is neither deficit nor surplus. We can say, therefore, in an accounting sense, balance of payments always balances.

Now, there is another important question. Very often we say that a country's (particularly less developed or developing country) balance of payment is unfavorable. It means there is deficit in total transactions. But in our example, we find that there is equilibrium in balance of payments i.e., there is neither surplus nor deficit. Apparently these are contradictory statements. At a time only one statement can be true. If there is deficit in balance of payments, it cannot be in equilibrium. And if it is in equilibrium there cannot be deficit (or even surplus) in a balance of payments.

We can easily resolve the contradiction. First of all, when we say that balance of payments is in equilibrium balance of payments always balances. It is in the accounting sense. Because, whenever our total payments are greater and total receipts are

lesser, we have to make payment somehow. We can borrow from other countries/ international institutions to make the payment. When we borrow, it is kept on the credit side because it shows receipts and therefore total receipts are equal to total payments. It is clear that with the classification and items of a balance of payments given above we cannot give a meaningful idea of surplus or deficit in a balance of payment. It will not indicate the pressure on balance of payment. It will not indicate the pressure on balance of a payment unless we specifically know the amount borrowed for making payment or a similar action adopted by this country.

Professor J.E Meade, in trying to explain this, has rearranged the balance of payments in terms of autonomous transactions and accommodating transactions. All the terms of a balance of payment may be autonomous or accommodating or partly autonomous and partly accommodating. And on this basis we can explain deficit or surplus on a country's balance of payments. What are autonomous and accommodating transactions? Autonomous transactions arise out of normal trade consideration i.e., a country is in a position to export in the international market. All these transactions are autonomous. Or for example, if we import some commodities from a country and that country is the cheapest and best source. It means we are purchasing purely on market/trade considerations. This is autonomous transaction. There can be some other consideration also. For example, suppose we want to help a friendly country. We can purchase some items from that country or give financial assistance. These transactions are different from autonomous transactions. They are called accommodating transactions. Here the main objective is to accommodate a country. Reasons may be political, economic, social or even religious. The demarcating line is that these transactions involve a deliberate intention to 'accommodate', 'assist', 'help' the other friendly country. Thus, all transactions can be either autonomous or accommodating. Accommodating transactions of a country will indicate the extent of imbalance in a country's balance of payments. So, Professor Mead has defined deficit in a country's balance of payments as follows: 'An actual balance of payments deficit as the actual amount of accommodating finance used in any period of time', and a potential balance of payments deficit as the amount of accommodating finance which it would have been necessary to provide in any period in order to avoid any depreciation in the exchange rate without the employment of exchange control, etc.

It is of course this potential deficit (or the corresponding potential surplus) that is the proper measurement of balance of payments disequilibrium.

Check Your Progress 4

1) What is balance of payments? (Write in one sentence)

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.....

2) What is the difference between balance of trade and balance of payments.

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.....

3) In which sense, if any, balance of payments always balances.

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4) What are invisible transactions?

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.....

5) Name any two important items of balance of payments.

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6) Explain the meaning of deficit in balance of payments.

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.....

7) Is the deficit in balance of trade the same as deficit in balance of payments.

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.....

20.6 LET US SUM UP

This unit dealt with various aspects of international economics. It started by discussing the reasons for countries to trade with each other. Among other theories, the unit discussed extensively the theory of absolute advantage propounded by Adam Smith, and the theory of comparative advantage most commonly associated with David Ricardo. It also discussed the modern variant of comparative advantage put forward by Heckscher and Ohlin. The unit then went on to discuss the potential gains from international trade. Some of these are: optimum use of resources and advantages of scale economies. Concepts pertaining to various types of terms of trade such as the commodity terms of trade, gross barter terms of trade, income terms of trade, single factoral terms of trade were then explained and discussed. This was also related to the theory of reciprocal demand. Finally the unit looked at monetary aspects of international trade and discussed the meaning of balance of trade and balance of payments. It also described the components of and the items that constitute a country's balance of trade and balance of payments

20.7 KEY WORDS

- Balance of Payments** : An account of total transactions of a country in a given period of time with the outside world.
- Balance of Trade** : An account of total merchandise trade including visible and invisible items of a country.
- Capital Transaction** : This is transfer of capital from one country to another. It may be from a country , international institutions like IMF or IBRD.
- Comparative Cost Advantage** : Difference in the cost ratio of different countries in different commodities gives comparative advantage in costs. One country may enjoys advantage in relative cost ratios. As a result one country can be more efficient in some commodities and another country can be less inefficient in some other commodities.

- Division of Labour** : One man cannot be equally competent in all the lines of economic activities. One person may be more efficient in some lines of economic activities, another person may be more efficient in other lines of activities. In view of this every person chooses that line of economic activity in which he is relatively more efficient.
- Equilibrium** : A point where two opposite forces meet. Where receipts are equal to payment.
- Invisible Items of Trade** : It means items of services etc., which are traded between countries and includes shipping, insurance etc.
- Leading Sector** : In the process of growth, during its third stage which Professor Rostow terms as ‘the take off stage’, one sector develops rapidly. It has linkage effect that favorably affects other activities also. It leads to the development of other sectors. Hence the name, ‘Leading Sector’.
- Offer Curve** : It means the amount of a country’s commodity which that country is willing to offer for a certain amount of other commodity of the other country.
- Reciprocal Demand** : The demand for each others’ goods in exchange for ones’ own output by two countries.
- Terms of Trade** : The terms (or the rate) at which two commodities are exchange between countries.
- Unrequited Transactions** : There is no quid pro quo, immediate or otherwise for these item.
- Visible Items of Trade** : It means goods and commodities which are traded between countries. As goods and commodities can be seen they are called visible items of trade.

20.8 SOME USEFUL BOOKS

Sodersten, B. (1980), *International Economics*, Mcmillan, London

Kenen, Peter (1994), *The International Economy*, Cambridge University Press, Cambridge, UK.

Krugman, Paul R. and Maurice Obstfeld (1997), *International Economics: Theory and Policy (Fourth Edition)*, Addison-Wesley, Massachusetts, USA

20.9 HINTS/ANSWERS FOR THE CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

For all, Read Section 20.2

Check Your Progress 2

- 1) Read Section 20.3 and answer.
- 2) Read Sub-section 20.3.1 and answer.
- 3) Read Sub-section 20.4.2 and answer.
- 4) Read Sub-section 20.3.2 and answer.
- 5) Read Sub-section 20.3.2 and answer.
- 6) Read Sub-section 20.3.3 and answer.
- 7) Read Sub-section 20.3.3 and answer.

Check Your Progress 3

- 1) Read Sub-section 20.4.2 and answer.
- 2) Read Sub-section 20.4.1 and answer.
- 3) Read Sub-section 20.4.2 and answer.
- 4) Read Sub-section 20.4.2 and answer.
- 5) Read Sub-section 20.4.1 and answer.

Check Your Progress 4

- 1) Read Section 20.5 and answer.
- 2) Read Section 20.5 & Sub-section 20.5.1 and answer.
- 3) Read Sub-section 20.5.1 and answer.
- 4) Read Sub-section 20.5.1 and answer.
- 5) Read Sub-section 20.5.1 and answer.
- 6) Read Sub-section 20.5.1 and answer.
- 7) Read Sub-section 20.5.1 and answer.

to inflationary pressures, specially if the deficit is small in relation to national income and is not persistent. Also, deficits can sometimes help the economy to recover from a recession.

21.8 MARKET BORROWING

In the previous section, you got some idea of the various measures of deficit. We saw that a deficit, howsoever defined, is an excess of spending over government revenue. In this section, we look at a related concept: market borrowing.

Public Debt

The overall debt and obligation of the government, measured at a point of time, is the public debt. The public debt has been defined in various ways depending on the items that are thought appropriate to be included in the definition. To get an idea of the public debt, let us look at the various obligations of the government. First, the government creates currency. Often, a part of the currency may be issued by the central bank, but usually the central bank in most countries is part of the government so that the total currency issued and obligation may be considered a government liability to the rest of the economy.

The second set of obligations is the short-term debt, normally with a maturity of less than a year at the time of issue and consists of items such as Treasury Bills and short-term loans from the central bank. There are some debts that do not have any specific date of maturity and are called floating, and part of these may be paid of at various times and are subject to various terms and conditions. These include provident funds, small savings, reserve funds etc. In India, the government has issued certain special securities to meet its obligations towards international institutions like the World Bank and the International Monetary Fund (IMF). These special securities are sometimes called special floating debt.

The importance of market borrowings lies in the fact that in some cases, such as Indian public finance, market borrowings are excluded in the estimation of budgetary deficits. Market borrowings are long term borrowings, where the maturity period is over a year. The reason given for excluding market borrowings from budgetary deficits is that it is felt that since these are long term obligations, they merely divert investible funds from the private sector to the government and hence do not raise the purchasing power and the quantum of currency. Consequently, inflationary pressures in the economy do not build up by the market borrowings. This view need not be correct, as the RBI itself takes up a large portion of market borrowings. The effect of both short term and long term loans taken up by the RBI is the same, in increasing the amount of currency.

Check Your Progress 4

- 1) Distinguish between public deficit and public debt.

.....

- 2) Explain the effect of deficit financing on the capital market

.....

21.9 LET US SUM UP

This unit has acquainted you with the basic elements of public economics including several basic concepts from traditional public finance. Our point of departure was a description of market failure. We discussed the various types of market failure. Next we explained the concept of Pareto improvement and Pareto optimality. In this connection we mentioned the link between perfect competition and Pareto optimality. Here we also talked about the two fundamental theorems of welfare economics.

We then took up the explanation of the concept of a public good. We saw that non-rivalry and exclusivity characterize a public good. A good like this is actually a pure public good. We took up a brief discussion of impure public goods, two types of which are club goods and goods in the presence of congestion. We also considered some issues in the provision of public goods and saw the central difference in obtaining a social benefit function from individual functions. It was pointed out that the individual curves are added vertically instead of horizontally, as happens in the case of a private good. We saw, too, what Lindahl equilibrium means.

We next went on to a discussion of externalities. We saw that an externality is an example of a market failure. After considering the four basic types of externalities, we discussed ways of coping with externalities. Here we discussed Pigou's suggestion of correction using suitable taxes and subsidies. The other way, as we saw, is granting property rights and letting private parties arrive at mutually beneficial deals. We explained very important Coase as well.

These broad topics of market failure, public goods and externalities constitute elements of what may be called an extension of some of the previous units that you studied in this course. The next three broad topics- public revenue, deficits and market borrowing are central themes in traditional public finance. We began our discussion of public revenue by pointing out a distinction that some have made, between revenue and receipts after broadly classifying revenue into tax and non-tax. We then turned to a discussion of the engaging an important topic of deficits and their financing, briefly touching upon the distinction between debt and deficit. We discussed and compared various measures of the government deficit.

21.10 KEY WORDS

- Balanced Budget** : A government budget in which the total revenues exactly match the total expenditure.
- Capital Expenditure** : Expenditure incurred on items that have a long term basis.
- Capital Receipts** : Receipts accruing from items of a long term character.
- GNP Elasticity of Public Expenditure** : The ratio of the percentage rise in government expenditure to a percentage change in GNP.
- Perfectly Competitive Market** : A Market situation where no buyer or seller is able to influence prices, where the goods sold by all sellers are homogeneous, and where there is full and perfect information and free entry and exit to and from the market.
- Pure Public Good** : A good characterised by both non-rivalry and non-exclusion in consumption.

Revenue Expenditure : Expenditure incurred on short-term activities

Revenue Receipts : Receipts incurred on activities, usually for a period more than a year.

Short-term Debt Instrument : Those instruments with maturity of less than one year.

21.11 SOME USEFUL BOOKS

Bhatia, H.L., *Public Finance* (Latest edition) Vikas: New Delhi

Browning, Edgar K. and Jacqueline Browning (1994), *Public Finance and the Price System* (Fourth Edition) Prentice Hall: Englewood Cliffs New Jersey

Musgrave, Richard A. and Peggy B. Musgrave (1989), *Public Finance in Theory And Practice* (Fifth Edition) McGraw-Hill International Edition: New York

Stiglitz, Joseph E. (1994), *Public Sector Economics*, Third Edition, W.W. Norton & Co.: New York

21.12 HINTS/ANSWERS TO CHECK YOUR PROGRESS EXCERSISES

Check Your Progress 1

- 1) Read Section 21.2 and answer.
- 2) Read Section 21.2 and answer.
- 3) Read Section 21.2 and answer.

Check Your Progress 2

- 1) Read Section 21.3 and answer.
- 2) Read Section 21.3 and answer.
- 3) Read Section 21.3and answer.
- 4) Read Section 21.4 and answer.

Check Your Progress 3

- 1) Read Section 21.5 and answer.
- 2) Read Section 21.5and answer.
- 3) Read Section 21.6 and answer.

Check Your Progress 4

- 1) Read Section 21.7 and answer.
- 2) Read Section 21.8 and answer.