Handbook For Economics Teachers

Coordinator

Jaya Singh, *Associate Professor*

DEPARTMENT OF EDUCATION IN SOCIAL SCIENCES
National Council of Educational Research and Training
Sri Aurobindo Marg, New Delhi-110016

Preface

The handbook has been developed for PGT economics in the higher secondary stage. The particular strength of the textbook is that it is based on the feedback and suggestions of the teachers and it includes pedagogies which can be practiced in the classroom. The book includes the best practices in teaching-learning of the subject and the existing modules have a wider applicability also.

The book has drawn its input from the knowledge and wisdom of the subject experts, teacher educators and in-service school teachers. The handbook will be useful for all those who are seeking to enhance their teaching-learning practices. Meeting the needs of the learners at the higher secondary stage, the use of this handbook will prevent the learners from rote-memorizing the information provided in the textbook. This book endeavors to offer new methods of teaching-learning, which provokes thinking and encourage reflective practices. It also adopts an action-oriented approach for teaching. Hence, its use will promote the skills among the learners, like - critical thinking and problem solving skills. This handbook is meticulously prepared to impart rational thinking and better learning. There is also precision maintained in the content of the book, and so there could be more learning in much lesser time.

The focus of the handbook is to emphasize upon the meaningful integration of content-cum-pedagogies which can be effective in making the subject interesting for the learners. The reference has been made to the pedagogical knowledge which is often used for explaining a particular topic. Content knowledge explains the subject in a particular domain. This handbook attempts to integrate the content knowledge with the pedagogies. The intention behind this approach is to promote a deeper understanding of the discipline.

Contributors

Unit	Chapter	Contributors
1	How the Economy Works	Jaya Singh, DESS, NCERT
2	Cost & Production	Jaya Singh, DESS, NCERT
3	Consumer Behaviour	Jaya Singh, DESS, NCERT
4	Markets under Perfect Competition	Jaya Singh, DESS, NCERT
5	Markets under Imperfect Competition (Monopoly)	Jaya Singh, DESS, NCERT
6	Markets under Imperfect Competition (Oligopoly)	Jaya Singh, DESS, NCERT
7	Supply	Ashita Raveendran, Jaya Singh
8	Money & Banking	Ashita Raveendran, Jaya Singh
9	Role and Function of the Government	Ashita Raveendran, Jaya Singh
10	Macroeconomic Equilibrium	T.M. Thomas, Associate Prof., Deshhandhu College Jaya Singh, Ashita Raveendran
11	Foreign Exchange Markets and Balance of Payments	M.V. Srinivasan

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1. Dr. Hrushikesh Senapaty, *Director*, NCERT
2. Prof. Sarita Sinha, *Ex H.O.D*, DESS, NCERT
3. Prof. Saroj Yadav, *Ex H.O.D*, DESS, NCERT
4. Prof. Neeraja Rashmi, *Ex H.O.D*, DESS, NCERT
5. Prof. Manju Bhatt, *H.O.D*, DESS, NCERT
6. T.M. Thomas (Retd) *Associate Professor*, Deshhandhu College
7. Prof. N.K. Das, IGNOU, New Delhi
8. Dr. Leena Singh, IGNOU, New Delhi
9. Dr. Kartar Singh, *Associate Professor*, Jamia Milia Islamia, New Delhi
10. Dr. Manju Aggarwal, *Associate Professor*, Delhi University, Delhi
11. Mr. B.C. Thakur, PGT, RPVV, Surajmal Vihar
12. Premananda Sethy, *Associate Professor.*, RIE. Bhopal
13. Rashmi Sharma, *PGT Economics*, K.V., JNU
14. Prof. Meenu Nandrajog (Late), *Professor,* DESS, NCERT
15. Meeta Kumar, *Associate Professor*, Miranda House
16. Prof. Qamar Ahsan, V.C, Magadh University, Bodhgaya

We also express gratitude to other PGT's in economics for their feedbacks & suggestions

Overall Editing

Nandini Sharma, *Junior Project Fellow,* DESS, NCERT
Ashish Maurya, *Junior Project Fellow*, DESS, NCERT

Technical Staff

Farheen Fatima, *DTP Operator,* DESS, NCERT

Table of Content

Handbook in Economics

Economics is one of the social sciences which can be opted by the learners from commerce, humanities as well as science stream. Over the years the subject has acquired many changes and they need to be imparted through child's own experiences. The ultimate objective of teaching learning of the subject is to prompt learners towards good citizenship. The lessons, topics, concepts therefore focus on the building of reasons to solve economic problems There is also use of data within the chapters which help the learners to see the trend towards approving or disapproving the theories or statements. When presenting the topic we should see that it connects with the existing understanding of the learners.

At the secondary stage, economics is introduced as a component of social sciences. Here learners are introduced to the theme/issues/topics identified from the Indian economy. One notices a jump in the treatment of the topic when we move from the secondary stage to the higher secondary stage. There is also need to make effort to match the content with the disciplinary standard set for higher secondary stage. At the higher secondary stage it is presumed that learners can understand abstract ideas. All together four courses are introduced for the learners at this stage. These courses are

(i) Statistics for Economics (ii) Indian Economy (iii) Microeconomics and (iv) Macroeconomics

Thus, one notices that learners are initially familiarized with the economic realities and later are introduced to the economic theories which are abstract in nature.

The objectives of teaching-learning of economics at the higher secondary stage relates to;

Understanding of basic concepts in economics which can be applied by the learners in their day to day life as citizens, consumers and workers

Realisation of learner's role in the nation building and sensitivity to the issues faced by the economy

Equip the learners with basic tools of economics and statistics to be able to understand economic issues.

Development of understanding that there can be multiple perspectives on economic issues and acquire necessary skills to argue logically.

Need for the Handbook

The classroom observation in various schools revealed that classroom has a heterogeneous group of learners who are taught using one single method i.e (lecture by the instructor) for teaching learning of the subject. Learners rely on the textbooks or on the notes provided by the teachers for passing the examinations. These notes are dictated in the classroom or photocopied for circulation among the students. It has been found that some learners are unable to make inference from the available material for the content has been presented in a terse manner, copious with analytical rigors and basic concepts have been explained with less description.

Why Teachers Matter?

The teacher has a very important role in the classroom. She has to process the information in a way that it can be applied in day to day lives. Secondly, it has bees noted limited resources are available as teaching-learning material in economics. Next, The field study tool has revealed that they are often engaged in an administrative work. The classroom in general has large number of students and teachers find it difficult to give personal time to each learner. The teachers find classroom occupied by learners with different capacities and abilities. They, therefore, find problems in handling learners with different abilities. In class XII the concerned teachers complete the syllabus early to give ample time for revision. Some of the students are unable to cope with the speed and huge syllabus to be covered within the time frame of six to eight months. There is less of teacher student's interaction in the classroom. Lack of the teacher student interaction builds a gap in terms of understanding the need of the learners. The teachers, therefore, enter the classroom with the general observation about the students. The teachers are held responsible for securing good grades for the learners at the higher secondary stage. The achievement in terms of grade is one such parameter for judging the standard of the school. The teachers therefore had to work day in and out to secure better grades for the learners.

Advantages of the handbook for teachers

Learners are different in terms of talents, motives and learning styles. The teachers therefore, can adapt their material to suit learners' interest and experiences more effectively. This strategy can help the teachers to establish strong relationship with the learners, being accessible to their needs, and provide them with feedback for effective understanding of the content.

A healthy interaction between the teacher and student helps to promote student's engagement in an effective way, thereby, establish a strong relationship between the teacher and student. On understanding the need of the learners the teachers can then orient teaching learning material to suit the students interest and experiences.

Teachers, who can engage the class using pedagogies, have better control over the class, resulting into fewer problems in terms of indiscipline in the classroom, thereby, impacting students learning in an effective manner.

The handbook can be effective in providing teachers with the diverse learning material, different pedagogies for transacting the curriculum and also familiarizing them with different teaching resources. There has been alignment of the concept with different pedagogies to provide a more lucid and integrated approach in the textbook.

To add to the quality of teaching the teachers need to be updated and focus on innovation in the subject. The handbook to an extent can be helpful in familiarizing the teachers with the economic trends.

Thus the quality of education depends upon the teaching learning of the subjects. There has been rapid and dynamic changes witnessed across the world. The teachers therefore need to adapt themselves to the continuous changes particularly witnessed in terms of teaching learning of economics.

Advantages for the learners

At the higher secondary stage, the learners have to study atleast five subjects. Most of the subjects have practical work which needs to be submitted within the stipulated time. The school follows rigorous teaching for six to eight months to complete the syllabus in all the five subjects.

Learners rely on the textbooks to understand the subject. At times, they also mug up the notes provided by the teachers.

In case of economics, there is use of graph as well as mathematics for understanding the concepts. Some of the learners face difficulties while understanding abstract concepts. The use of mathematics, too, appears difficult for some learners.

The schools conduct frequent unit tests. Some of the learners are not able to demonstrate their learning in a positive manner. On analyzing the questions it has been found that they mostly seek answers through rote memorization. The change in the pattern of questions frightens the learners. The change in the question is noticed when it has functional value or can be applied in day to day lives.

The use of pedagogies have been recommended for the learners, for it makes the lesson interesting. It deviates from the conventional instructional style of lecture method. There is an increase in the likelihood of students' understanding and remembering new ideas and concepts when explained through the pedagogies like storytelling, case study, problem solving and so on.

The use of pedagogies promotes learners' participation which later ensures the growth of the democratic society. The learners can relate the economic concepts with the real life situation. It also helps them to analyse economic events undertaken within and outside the country.

There is an increase in student teacher interaction which paves way for the self directed learning by the students.

Development of the Handbook

This handbook has been developed by the subject experts and practicing school teachers. It has been categorized into modules on selected themes or topics. These themes and topics have been identified by the teachers in the workshop mode. The draft module of the handbook has been reviewed in the workshop by subject experts, practicing school teachers and teacher educators. The modules have been tried out in schools and suggestions / corrections have been incorporated. Each module is well structured and would help both the teachers and learners. The teachers would be helped with content cum pedagogies which would facilitate in transaction of the curriculum. The learners will be facilitated with personal mode of understanding the topics. Its reference by the teachers can pave the way towards making the classroom interesting for the learners. It has been developed in a simple language and includes description of content, tables and diagrams.

Outline of the Modules

The basic objective of the modules is to motivate learners towards self directed learning as they are often challenged to apply their understanding in new ways in different situations.

There has been rapid and dynamic change adapted in the field of economic education. It has been found that countries which adapt to such changes, grow continuously. To understand the transaction of goods and services between different sectors of the economy, there is a need to reflect upon national income accounting. Unit 1 analyses national income through the concept of circular flow.

Unit II explains the cost with the help of storytelling and tables. The producer inorder to maximize his or her profit from the sale of commodity makes effort to reduce the cost

Unit III provides insight into the behavior of the consumer through the use of story telling, diagrams and mathematics. The gist of the module is to convey consumer's satisfaction through his or her limited budget

Unit IV looks at the market under perfect competition through the use of problem solving exercises, diagrams, mathematics and storytelling methods. The market categorized under perfect competition is hard to exist in today's world but provides best returns to both the consumers as well as producers.

Unit V and VI reviews market under imperfect competition through the use of problem solving, story telling, mathematical approach and diagrams. The comparison between monopoly and perfect competition highlights upon the welfare consequences of a firm choice of output and price.

Unit VII focus on very important concepts of supply through the use of mathematics, diagrams and tables.

Unit VIII explains the function of credit creation through the use of storytelling methods. For it helps in understanding the functions of financial institutions.

Unit IX includes games to provide students with a basic understanding of the terminology and history of the foreign exchange environment.

Why Pedagogies?

Teachers play a very important role to strengthen student understanding of the topic/ concepts. As a facilitator they can allow the students to work on activities so as to help them in the construction of knowledge. In the absence of the use of such pedagogies in the classroom let the students reproduce the information without processing it. There is thus memorization of facts with the intention of doing well in the examination.

The use of content cum pedagogies in the handbook promotes student centered curriculum. Here student play a dominant role in the creation, planning, and structuring of learning process so that they can relate their learning with the real life situations. Teacher, thus, becomes the facilitator who supports, supervises and provides feedback to the learners. There is also peer learning where learners learn from each others' experiences. The advantage can be seen in terms of understanding of the concepts and enhancing students competencies like critical thinking, problem solving, ability to work in a team, add to the capabilities to

master new knowledge and adapt to the change.

The use of pedagogies enable the learners to do economics like their friends opting for science stream. While engaging in activities there is sharing of responsibilities and goals. These strategies thus discourage the method of rote memorization for the learners particularly at the higher secondary stage.

Linking of Content with Pedagogies

Here learning is promoted by set of pedagogical approaches which challenges the learners towards critical thinking. Its use in the classroom is stimulating for the learners for they explore the answers on their own. The linking of content with pedagogies illustrate economic concepts in a real life situation. Its use in the classroom addresses the heterogeneity among the learners and helps in meeting the need for individualized learning. There are different ways of understanding the subjects like there can be use of cooperative learning, Cases, in-class discussion, role playing, games, storytelling, worksheets, problem solving, newspaper, field visits, concept maps are some of the pedagogies discussed.

Case Study

Cases are pedagogical tools where a set of situations are described either in historical background or in the contemporary sense. Its narration also has the impact of bringing real world in the classroom. The situation described for the learners can be imaginary or actually drawn from the real life situations or mixture of both. These can be given to the participants in written forms or orally spoken which can also be beneficial for the learners with visual impairment. Based on the case questions can be raised and learners can be asked to answer them.

The use of cases in the classroom simplifies the explanation for the theories are contextualized. They stimulate thinking among learners with different abilities, thereby, making the classroom interesting. The question framed on the cases can persuade learners towards high order thinking. The learners when solving the questions based on case studies are 'learning by doing'. They undertake decisions like an economist to come to the solution. Thus its use in the classrooms transfers the learning from its passive listening to the kind of lively exchange of ideas in the classrooms.

Role Play

It is a pedagogical technique where the situation or the story is enacted. There can be selection of the topic or the theme from the textbooks. The learners enact the role of the characters or the situations in a classroom mode. The learners then develop the script with the help of the teacher for the enactment of role plays. The dramatization of the scenes or stories, thus, generates visual as well as audio impact where the learners see or listen to the stories or the situations before themselves. The learners are then able to construct the meaning, for emphasis is laid upon understanding over meaning, quality over quantity. At the end, question and answer session can be organised.

Story Telling

In economics, some of the theories are taught mathematically which are resented by few students. They have mathematics phobia and they get fearful on finding the use of equations or symbols in the textbooks. Mathematics, on the other hand, helps in understanding the complex theories of economics. The narration of stories simplifies the content and makes it easy for the learners to understand. It explains the context in which the theory has been developed and can be applied. There is description of the situations or stories which make learners active, task-oriented and gives them self directed approach to learning.

Problem solving

It is a pedagogical device where the learners understand the content while searching for the solution or working on the problems. It is a powerful learning strategy as it engages the learners in a problem where there is focus upon the concept. It requires learners to solve the problems, thereby, helping them to acquire the understanding of new concepts. Its use in the classroom promotes learning economics and at the same time, applying it in the real life situations.

Debates

The class can be divided into few groups where some can speak in favour of the motion and others can speak against the motion. Here a topic is identified and the activity begins by presentation of two opposite view points on a particular topic or issue. The discussion promotes teamwork for there is sharing of points within the groups. The learners reach an agreement through exchange of ideas among the peer groups.

Discussion

Each learner finds an opportunity to voice their opinion among the peer group. Here the topic is identified for generating discussion in the classroom. The learners share responsibilities and endeavours to achieve goals in cooperation with each other. This activity promotes expression of various view points and motivates learners towards logical thinking. Brainstorming session can also be organized which can help the learners to understand the topic from multiple perspectives.

Concept Maps

Different parts of the chapter can be related to each other through the use of diagrams which helps the learners to establish the connection between them. The use of this pedagogy in the classroom promotes analytical thinking and critical learning. For example the concept of national income can be explained through the use of circular flow. Here relationship between the four sectors of the economy has been expressed through the use of arrow rather than providing a detailed narration of exchanges taking place between the four sectors of the economy. The detail description of the exchange taking place between the sectors at times proves confusing for the learners.

Newspaper Clippings or Collages

Newspaper in general is replete with articles focusing upon economic situations. Learners can be asked to collect the article on relevant content and discuss them in the classroom. Here variety of activities can be raised in the class. One set of learners can be asked to summaries the news items. Second set of learners can raise questions and the third set of learners attempts to provide the answer. The use of newspaper in the classroom, thus, reinforces the course content and also makes them abreast of the current topics.

Field visits

Field visit is an important pedagogy for it helps in observing the institutions like banks and let the student see the things for themselves. The visit to the banks will help them in understanding the functions of the bank. The field visit also promotes application of the theories learnt in the class. Learners can be taken out into the field to understand how crop is grown in the field. For example observation of the cultivation in the field helps them to understand the process of cultivation and the problems faced by the farmers.

Collaborative Learning

Here learners understand the subject in a group. The formation of groups helps to achieve social skills and make interdependent upon each others for sharing the information. The student's motivation is enhanced as there is sharing of information and learners become participative in their own learning. There is self understanding of the concept under the guidance of the teachers. Learners can be asked to prepare a project as a part of collaborative learning. The class can be divided into groups and asked to prepare a project on any identified topic. One set of learners can collect images, another can collect material, painting, and drawing can be done by another set of students. In the process learners acquire various skills like team work, critical thinking , presentation skill and so

Conclusion

The teaching learning of the subject cannot be sufficient with the lecture methods where teacher speaks and students listen as passive learners. The teacher needs to be familiar with different pedagogies for the classroom in general is occupied with heterogeneous groups of learners. Infact the teachers need to address this diversity in the way they address their class, nature of subject taught, and content being meaningful for the learners. The students therefore need to be engaged through the use of different pedagogies while transacting the curriculum. The handbook for the teachers in economics can be helpful in orienting the teachers towards different pedagogies for transacting the curriculum.

Unit

I

How the economy works

Topic : How the Economy works
Rational : It measures the economic activity undertaken within the country
Pedagogy : Circular Flow, Extract from Economic Survey
Key Concepts : Circular flow of Income and measurement of National Income

The Circular flow model discusses a key concept in economics that every payment by a buyer is at the same time an income receipt for the seller (some payments may be transfers- like taxes and subsidies, and not income).

In order to understand the functioning of the nation is economy, the first task is to understand how the overall level of economic activity can be measured. The most commonly used measures are:

1. Gross Domestic Product
2. Gross Value Added

The **Gross Value Added** (GVA) of any form is the difference between the money value of the output of the firm over one year and the money value of the raw materials and components used by the firm during that year. The sum of the Gross Value Added of all the productive enterprises in the geographical territory of a country is called the GVA of the country.

As per the first Advance Estimates (AE) released by the CSO, the Indian economy is estimated to register a growth rate of GVA at constant basic prices to be 6.1 per cent in 2017-18. (There is a likelihood of this growth being revised downwards in the subsequent revisions carried out by the CSO). The growth in the second half of 2016-17 works out to 7.0 per cent as against 7.2 per cent in the first half. The first AE released by CSO in early January 2017 were based on data mainly up to October and in some cases up to November 2016 and hence, they largely mirror the economic situation during the first seven to eight months of the financial year. 2016-17 As per the first AE, the growth rate of Gross Value Added (GVA) at constant basic prices for 2016-17 is placed at 7.0 per cent, as against 7.2 per cent in 2015-16. The growth in the second half of 2016-17 is estimated at 6.7 per cent as against 7.2 per cent in the first half (Figure 1). The sector-wise details are presented in the Table 1.

Table 1. Growth Rate of GVA at Basic Prices for Different Sectors (per cent)

Sector	2012-13[a]	2013-14[a]	2014-15[b]	2015-16[c]	2016-17[d]	2016-17	
						H1	H2
Agriculture, forestry & fishing	1.5	4.2	-0.2	1.2	4.1	2.5	5.2
Industry	3.6	5.0	5.9	7.4	5.2	5.6	4.9
Mining & quarrying	-0.5	3.0	10.8	7.4	-1.8	-0.9	-2.6
Manufacturing	6.0	5.6	5.5	9.3	7.4	8.1	6.7
Electricity, gas, water supply, etc.	2.8	4.7	8.0	6.6	6.5	6.4	6.6
Construction	0.6	4.6	4.4	3.9	2.9	2.5	3.4
Services	8.1	7.8	10.3	8.9	8.8	9.2	8.4
Trade, hotel, transport, storage	9.7	7.8	9.8	9.0	6.0	7.6	4.5
Financial, real estate & professional services	9.5	10.1	10.6	10.3	9.0	8.8	9.2
Public administration, defence, etc.	4.1	4.5	10.7	6.6	12.8	12.4	13.2
GVA at basic prices	5.4	6.3	7.1	7.2	7.0	7.2	6.7

Source: *CSO, (pp.-140, Extract from 2016-17 Economic survey)*

Note: a=second revised estimate; b=first revised estimate; c=provisional estimate; d=first advance estimate

At the sectoral level, growth of agriculture & allied sectors improved significantly in 2016-17, following the normal monsoon in the current year which was preceded by sub-per monsoon rainfall in 2014-15 and 2015-16. Higher growth in agriculture sector in 2016-17 is not surprising; rabi sowing so far and the first advance estimates of the kharif crop production for the year attest to this. After achieving a real growth of 7.4 per cent in terms of value added in 2015-16, the growth in industrial sector, comprising mining & quarrying, manufacturing, electricity, gas & water supply, and construction sectors moderated in 2016-17. This is in tandem with the moderation in manufacturing, mostly on account of a steep contraction in capital goods, and consumer non-durable segments of Index of Industrial Production (IIP). The contraction in mining and quarrying largely reflects slowdown in the production of crude oil and natural gas. However, the performance of industrial sector in terms of value added continued to be at variance with its achievements based on IIP. As in the previous years, the service sector continued to be the dominant contributor to the overall growth of the economy, led by a significant pick-up in public administration, defence & other services,

that were boosted by the payouts of the Seventh Pay Commission. Consequently, the growth in services in 2016-17 is estimated to be close to what it was in 2015-16 (Table 1).

Based on the newspaper clipping given above, answer the following.

a. Name the organization which release data on GVA?

.....

b. Between 2012-13 and 2013-14 which sectors experienced (a) faster growth, (b) slower growth?

The Circular Flow

The overall economic activity can be discussed through the circular flow diagram:

The circular flow diagram shows relationship between the two economic decision-making units: the household and the firm. These two entities capture the ideas of consumption (household) and production (firm) respectively. The diagram shows the exchange of money between the two different kinds of market: the resource market and the goods & services market. Firms buy labour and material from the resource market. The firm then converts into items that sell in goods & service market. Actually, households are owners of all factors of production, which the firms purchase from them. Firms buy 'materials' from other firms also.

From the producers perspectivein diagram 1, the firm uses money to purchase the factors of production (labour, land and capital) from the resource market (top arrow). The firm then uses these factors of production to produce the goods and services, which are further sold in the market. Firms pay factor payment (wage, interest, rent) to the households for their supply of the factors of production in the market (bottom line). The firm then sells its items bottom line for earning more revenue which can be reinvested to obtain more factors of production.

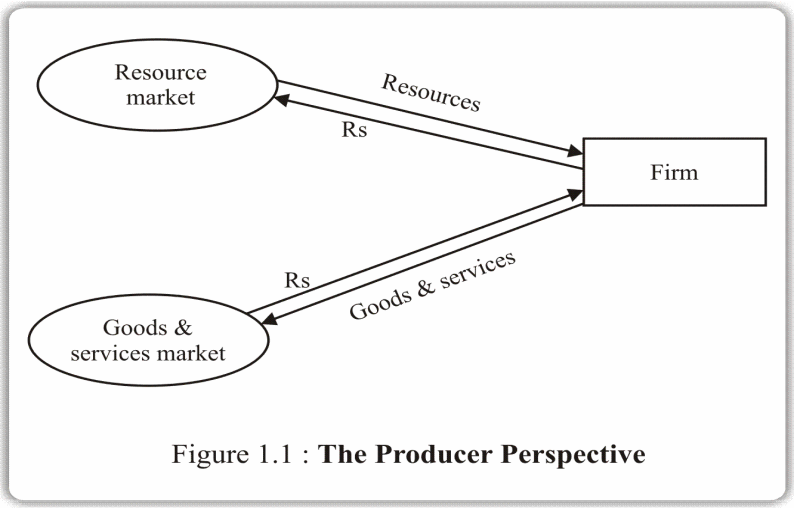

Figure 1.1 : **The Producer Perspective**

In Fig. 2, workers provide the factor of production (land, labour and capital) to the firm through the resource market (top solid line) in exchange for money (top line). Then they will use these income to spend on goods and services supplied by the market/store (bottom line) and purchase goods and services (bottom solid line).

Both figures 1&2 illustrate the dual role that economic agents play as consumers and producers.

Firms provide households with income through the resource market

Figure placed below indicate at the interdependence of firm and households.

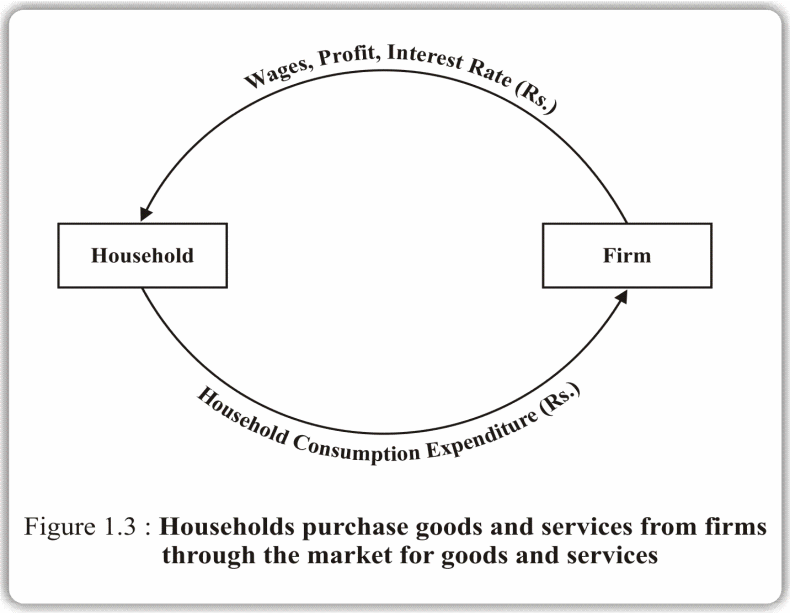

Figure 1.3 : **Households purchase goods and services from firms through the market for goods and services**

A firm is a producer, but also act as a consumer when it purchases raw material and hires labour. A household, too, is a consumer as well as a producer of good and services, and it supplies labour needed by firms

When we combine the flow of money in figures 1, 2 & 3 the diagram shows that the money is moving in a circle.

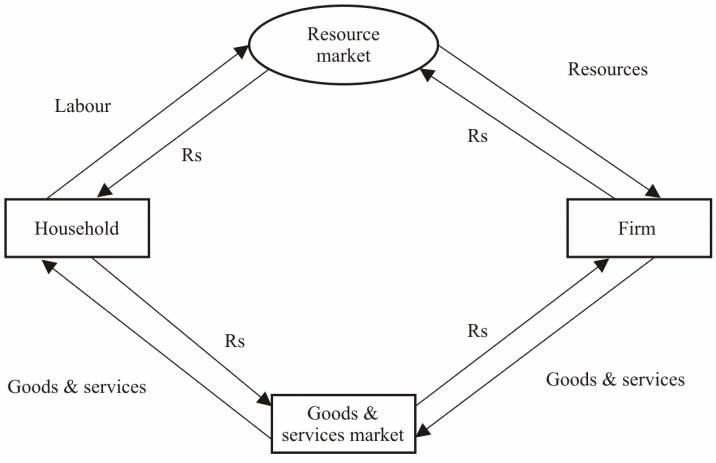

Figure 1.4 : **Interaction between income and expenditure**

In the top half, we see the household provides resources to the firms in the form of labour and purchase goods and services produced by the firms. In this figure, household exchange their labour in the resource market for income. Households purchase the things they desire in the market for goods & servicesin return for payment. In the upper-right quadrant, firms purchase resources such as labour and other factors of production in the resource market. They use these resources to produce goods and services. The lower right quadrant shows firms selling these products in the market for goods and services.

Measurement of total output of an Economy

Total output of goods and service would exclude all **intermediate goods and services.** For e.g., when a textile manufacturer sells a piece of cloth, he does not know its use either in the form of a sofa cover, fashion show, simple dress or any other. At this point of sale he is not aware whether this is a final or intermediate sale. Economists use the concept 'value added'that is the difference between value of output of a firm and the value of its intermediate consumption. The firm pays for the factors of production it purchases from this 'value added'. Value of output is the output which is produced by a firm during an accounting year. If the entire output is sold during the year, value of output becomes sales. Intermediate goods is the product used to produce a final goods that a firm purchases from other firms. If we subtract the value of intermediate goods used in production from value of output we get the value added.

The sum of all values added in an economy is a measure of the economy's total final output. This measure of total output is called **gross value added.** It is a measure of all final output that is produced by all productive activity in the economy.

Apart from value added method (Production method) there are two more methods of measuring the total output of an economy. They are known as Expenditure Method & Income Method.

Value Added Method = Income Method = Expenditure Method

MEASUREMENT OF INCOME

RECONCILING THE THREE METHODS OF MEASURING G.D.P.

PRODUCTION METHOD		INCOME METHOD		EXPENDITURE METHOD
NET INDIRECT TAXES		NET INDIRECT TAXES		PRIVATE FINAL CONSUMPTION EXPENDITURE
CONSUMPTION OF FIXED CAPITAL		CONSUMPTION OF FIXED CAPITAL		GOVT. FINAL CONSUMPTION EXPENDITURE
NET VALUE ADDED IN THE PRIMARY SECTOR AT FACTOR COST	=	COMPENSATION OF THE EMPLOYEES	=	GROSS CAPITAL FORMATION
NET VALUE ADDED IN THE SECONDARY SECTOR AT FACTOR COST		OPERATING SURPLUS		NET EXPORT OF GOODS AND SERVICES
NET VALUE ADDED IN THE SERVICE SECTOR AT FACTOR COST		MIXED INCOME OF THE SELF EMPLOYED		
G.D.P. AT MARKET PRICES		G.D.P. AT MARKET PRICES		G.D.P. AT MARKET PRICES

Note: Expenditure approach – Here the calculation of GDP is done on the basis of the total amount spent on final goods and services in the economy.

Three-Sector Model

In the circular flow model, there are three sectors:- households, firms and government. It is assumed to be closed economy where income flow is not influenced by the foreign sector. In the three sector economy, the government affect the economy in a number of ways. Government purchases goods and services in the same way that households and firm do. Firstly, considering the flow of income and expenditure between government and households. Government expenditure takes many forms such as factor payment (as wages are being paid for service of labour), expenditure on infrastructure, education and so on. Households pay part of their income to the government in the form of taxes such as income taxes and property tax. On the other hand, the government also make transfer payments to the households in various form such as pension, scholarship, medical aid, unemployment allowances etc. Another method of financing government expenditure is borrowing from the financial market (it is a marketplace where traders buys and sells assets such as equities, bond, derivatives etc) either to meet the current expenditure or to invest in different project. Government uses financial market in order to deposit and save its income. The flow of income and expenditure between government and firm is similar to households; firm pays taxes to the government in the form of corporation tax, sales tax. On the other hand government provides subsidies (it is kind of money that is paid by government and other public body to help an industry or business keep the price of commodity low) and pays for the goods & services it buys from the firms. The relationship between the financial market and firm is similar like the relationship between government and financial market.

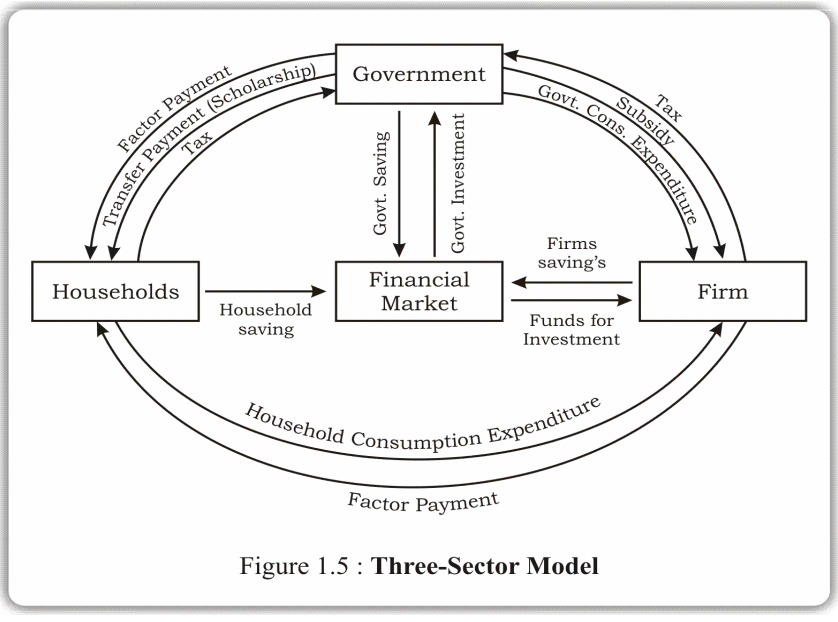

Figure 1.5 : **Three-Sector Model**

Modern Economy

In this economy there is government, foreign trade & firms to produce goods & service for consumers. In practice final spending includes private consumption, investment, Government consumption and export.

Four Sector Model

In the diagram mentioned below, there are four sectors of the economy – households, firms, government and other countries- via three types of market: the factor market, the market for goods and services, the financial market and the 'foreign' market. (Financial markets arise out of financial intermediation. Funds flow from firms to households in the form of wages, profit, interest and rent through the factor markets. Households pay part of their income to the government in the form of taxes such as income taxes and sales taxes(firms pay sales taxes... households only bear part of the burden of the tax). In addition, part of the household income which is saved enters the financial markets through banks, institutions, sale and purchase of stocks and bonds as well as loans. There are other funds channelled into financial market by firms, government borrowing, foreign borrowing and lending, and in the transactions of the shares. Other countries also participate in this economy as exports to the rest of the world generate a flow of funds into the economy while imports lead to the flow of funds out of the economy. If we add up consumer spending, Government purchase on goods and services, investment spending by firms, flow of funds through export and subtract the value of import, we get the value of goods and services produced in the economy- that is, the gross domestic product of the economy.

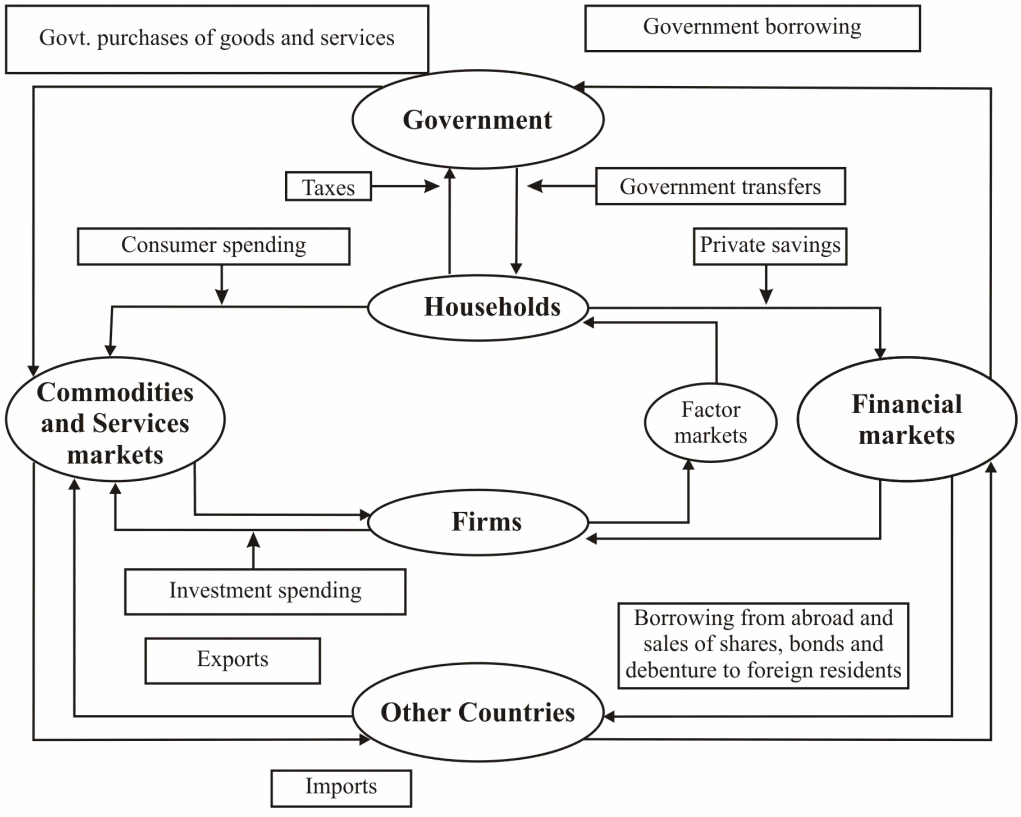

Figure 1.6 : **Four Sector Model**

Equilibrium in the Economy

When the economy is in equilibrium, prices and employment will be stable. This situation will exist when aggregate demand is equal to total output i.e. goods produced in the economy has been consumed by the people.

In case firms produce more output than the demand some items will not be sold. Next time the firm will produce less to match with the demand in the economy. This means land, labour and capital will not be employed to the extent as resources become unemployed and there is decline in the income. The economy is said to be in disequilibrium as the level of output, employment and income starts changing.

On the other hand, reverse may also happen i.e., aggregate demand may be greater than the value of national output. In that case firm will want to increase the production of goods, services output, employment and income will also increase.

Leakages and Injections

(There is a problem with confusing 'money' with 'income'. 'Leakages' and 'injections' are concepts better introduced once the concept of 'equilibrium' is adequately discussed) Leakages are those use of incomes which causes a reduction in circular flow. Taxes, savings and imports are known as leakages or withdrawals because they are not considered as payment for goods and services produced in the economy. At times saving of the households is also termed as leakages for it withdraws their income (as it is saved). It also reduces their capacity to purchase goods and services. Money can also be added to the circular flow of income. Investment, Government expenditure on education and health and payment on exports are known as injections into the circular flow of income in an economy.

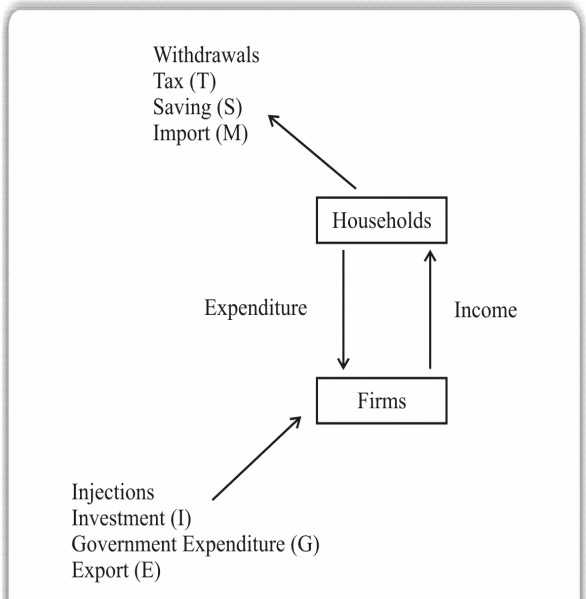

Figure 1.7 : **Leakages and Injections**

Changes in the value of withdrawal and injections cause changes in aggregate demand or expenditure in an economy. When withdrawal exceed injections in any economy output, employment and national income fall. If injections exceed withdrawals output, employment and National income increases

An equilibrium means state of balance or rest. This situation will exist only if the total amount of goods & services firms produce is brought by all the people, etc., who spend. That is, if aggregate demand equals total output.

There are three different methods of estimating National Income: Production Method, Expenditure Method and Income Method.

Unit

II

Cost and Production

Topic : Cost and Production
Rationale : Given that the aim of production is to satisfy the wants of people as efficiently as possible, this necessitates the production of goods at the minimum possible cost
Pedagogy : Short Stories and Tables
Key Concepts: Total, Average and Marginal Cost

Litchi Orchard

A farmer named Anil has a large litchi orchard. At the end of June, the trees of his orchards were laden with ripe litchis that were just ready to eat. He decided to sell them in a nearby market and earn profit.

Anil employed a young litchi picker named Mahavir who could pick up 25kg of litchis each day in his basket. Mahavir used to shake the trees and pick up litchis dropped on the ground. But some of the litchis remained on the trees even after being shaken vigorously. Anil along with Mahavir devised a simple technology i.e. tied a sickle at the end of a long bamboo stick. This stick would help him in plucking the litchis clinging to the tree.

Anil was worried that all the litchis from his orchard would not reach the market on time. The litchis would rot if they were not picked at an appropriate time. After one week, he decided to hire a labourer. Sunil was the new labourer hired. He was good at climbing and plucking fruits from toll trees. So, there was a division of labour between Maharvir and Sunil. Sunil plucked the fruit from the higher branches while Mahavir plucked from the lower branches of the trees. Together, they would collect the fruit lying on the ground also. They collected 50 kg of litchis every day.

We found that the hiring of Sunil raised the total amount of litchis collected each day. One week later, Anil hired another labourer named Suraj. All three together collected 60 kgs of litchis every day. Thus, hiring of Suraj increased the collection of litchis by 10 kgs each day. After one week with the common effort of Mahavir, Sunil and Suraj, the litchi orchard was harvested.

Answer the following:

1. What is the total amount (in kgs) of litchi collected by Mahavir and Sunil during the season?

2. What was the marginal contribution per day of an extra labourer when the number of labourer increased from -

   i. 0 to 1
   ii. 1 to 2
   iii. 2 to 3

Fruit Juice Seller

Imagine a small fruit juice shop named "Instant Juice" run by a shopkeeper 'Krishna'. In this shop, all the fruits are churned in a mixer to prepare juice for the customer. The shop has only one mixer, which can be used by only two workers comfortably. One worker alone can produce only 10 glasses of juice per hour, in addition to handling other work like answering the phone calls, attending the customers, keeping the table clean and so on. Adding the second worker increases the production to 25 glasses of juice per hour. Looking at the increasing demand, the shopkeepers decided to hire the third worker.

Inclusion of third worker in a shop adds to crowding, but on carefully managing the three workers, more glasses of juice can be produced. The three workers can together serve 35 glasses of juices per hour to the customers.

Answer the following:

1. What was the total number of glasses of juice made per day when the number of worker was:

   i. One
   ii. Two
   iii. Three

2. What was the marginal contribution to production of the juice, by the additional laborer when:

   i. Number of worker increased from 0 to 1
   ii. Number of worker increased from 1 to 2
   iii. Number of worker increased from 2 to 3

3. What was the average output when the number of worker was:

   i. One
   ii. Two
   iii. Three

Note: The added output from hiring a third worker is due to constraint of space and machine, and not because the third worker is less efficient or hardworking. Here, we assume that all the workers are equally efficient.

Marginal product is the additional output that can be produced by hiring one more unit of a specific input, holding all other inputs constant.

Tutor and his Tuition: It is usual to measure labour in terms of hours worked, but not in terms of effort put in each hour. That effort is unobservable in this case.

Consider, for example an independent tutor who gives tuition primarily to students from a private school. Let's say the teacher begins his tuition from 8 a.m. in the morning and continues till 8 p.m in the night (with some break in between) As more and more students join, the tutor decides to put in extra hours in the evening. An hour spent working later than 8 p.m. in the night after a long day of rigorous work is likely to be less productive than an hour spent working at 9 a.m. Here the fixed factor of production is the teacher, whose mind and body capacity ultimately limits efficiency in terms of working hours. This is as much similar as the four walls of a firm which limits production or a piece of land in case of agriculture.

Based on the above mentioned situation, build a story of 'tutor and his tuition' in terms of number of hours of tuition put in by a particular teacher in one day and accordingly increasing the number as the number of students seeking tuition increases. Accordingly determine total, average and marginal output of the tutor.

Story of Arif

There is a small village in Andhra Pradesh. This village does not have a regular supply of electricity and natives of the village face frequent power cuts. This village has many small firms. One such firm is owned by Arif. This firm produces torches used by the natives at night. Let us suppose Arif has to pay Rs. 1,400 every month as fixed cost of this firm. In addition, Arif also spends Rs. 60 for manufacturing each unit of torch produced. (There are other costs borne by the firm but we have not included them for simplification). How many torches can it produce within a budget of Rs 5,000?

Solution

Rs. 5000 = Budget = Total expenditure on production
Rs.1400 = Fixed cost of firm
Rs.60 = cost of producing a torch
Let us assume, x as the output level
Thus,
5,000 =1,400 + 60x
Subtracting 1,400 from both the sides
3,600 = 60x
Dividing by 60 gives the solution
60 = x

Thus, the firm can produce 60 pieces of torch within a budget of Rs 5,000.

Diagram

To understand a budget line, we can assume Hari has Rs. 100 to spend on chocolate bar and biscuits. Let the price of chocolate be Rs. 10 per bar and the price of biscuits be Rs. 5 per packet. If Hari spends his whole pocket money on chocolates, he can purchase 10 bar of chocolates. On the other hand, Hari can purchase 20 packets of biscuits out of his pocket money. If we draw a straight line (as in the diagram) joining 10 chocolate bars and 20 packets of biscuits we get a budget line or price line. This line shows different combinations of two goods which can be purchased from his pocket money. For example, he can purchase 5 chocolate bars and 10 packets of biscuits or 1 chocolate bar and 18 pieces of biscuits or any other combination of his choice.

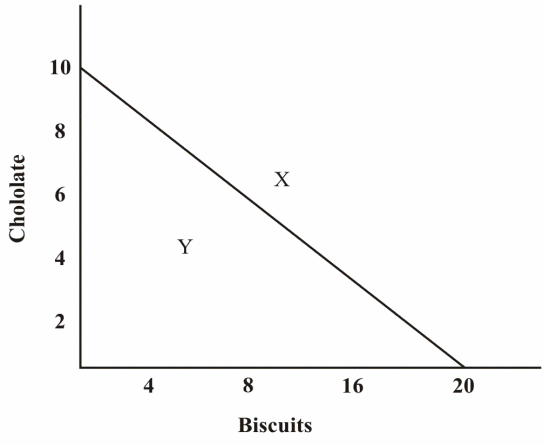

Figure 2.1 : **Budget Line**

As evident from the diagram, any combination lying outside the budget line (like point X) cannot be afforded by Hari and any combination lying inside the budget line (like point Y) can be afforded by Hari. In case, Hari desires to spend all his pocket money on the given goods, he will have to choose the combinations which lie on the budget line.

Relationship between Average and Marginal Product

Average product 'follows' marginal product, but it does not change as quickly. If marginal product is above average product, the average rises, if the marginal product is below average product, the average falls.

A boy named Abhiroop is a 9 year old student of class IV in a reputed school of a metropolis. He has to appear in four term exams and the average marks scored by him in three term exam are 85%. If in the final term he scores 75%, his average marks drops but not to the extent of 75%, infact, it will fall only to 82.5%. If he scores 95% marks instead, the average will rise to 87.5%. In the second situation you noticed that marginal marks scored increases when he scores higher percentage in the fourth term and vice-versa. Also note, the rise in average marks is not as steep as rise in marginal marks.

Similarly, a cricketer can raise his batting average provided his marginal score is above the current average. He can also lower his average if his marginal score is lower than the current average.

Table

The above cases can be lucidly represented with the help of tables. The top row in the table can indicate the various variables, for example, units of output could be represented in terms of number of workers, tutors and accordingly total, average and marginal can be calculated. The second row can depict the equation for arriving at total, average and marginal cost, product, revenue or profit. The remaining rows can be used for allotting different numbers to each variable representing the concept. Accordingly, one can compare the changes in average, marginal and total revenue.

Table 2.1: Based on the data given in the table, fill in the blanks:

Units of output (Q)	Total Cost (TC)	Total Revenue (TR)	Marginal Cost (MC)	Marginal Revenue (MR)	Average Cost (AC)	Average Revenue (AR)	Total Profit (TP)
(1)	(2)	(3)	(4)	(5)	(6) = (2)/(1)	(7) = (3)/(1)	(8) = (3) - (2)
1	25	30	25	30	25	?	5
2	39	50	14	20	19.5	25	11
3	52	?	13	20	17.3	23.3	?
4	62	90	10	20	?	22.5	28
5	75	110	?	20	15	22	35
6	91	130	16	?	15.1	21.4	39
7	?	?	20	20	15.8	?	?
8	135	170	24	20	16.9	21.2	35

Table 2.2

Units of output (Q)	Total Cost (TC)	Total Revenue (TR)	Marginal Cost (MC)	Marginal Revenue (MR)	Average Cost (AC)	Average Revenue (AR)	Total Profit (TP)
(1)	(2)	(3)	(4)	(5)	(6) = (2)/(1)	(7) = (3)/(1)	(8) = (3) - (2)
1	25	30	25	30	25		5
2	39	50	14	20	19.5	25	11
3	52	**70**	13	20	17.3	23.3	?
4	62	90	10	20	?	22.5	28
5	75	110	?	20	15	22	35
6	91	130	16	?	15.1	21.4	39
7	**111**	**150**	20	20	15.8	?	?
8	135	170	24	20	16.9	21.2	35

Unit

III

Consumer Behaviour

Title	:	Consumer Behaviour
Rationale	:	Income and prices set the limits, or constraints, within which households make their choices while buying things in the markets
Pedagogy	:	Storytelling, Table, Diagram and Mathematics
Key Concepts	:	Budget Constraints, Income Effect and Substitution Effect

Budget constraint faced by any individual or household, primarily, results from the price of the product and the income he/she possesses. They can allocate their income as per their choice and need of the family. Information on income of the buyer and price of the product makes it possible to determine those combination of goods and services that can be afforded by the buyer. Income and price thus define the budget constraint.

Story of Mona

Consider Mona, a recent graduate from the reputed college of Delhi. She opted for a part time job of an accountant advisor in a nearby firm in North Delhi. Let us assume that she receives a salary of Rs. 8000 per month. She possesses no credit or debit card. She has no other source of income. Her monthly expenditure is well adjusted within her income.

She wants to rent a house close to her office. A careful survey around the adjacent colony reveals that there are three flats to be rented. The least expensive is one- room apartment with a small kitchen and a balcony that rents for Rs. 2000. If Mona hires that house then she is left with Rs. 6000 to spend on food and other expenses. Another flat, half kilometre away from the first flat, has one room, with balcony and a larger kitchen. It has much more space than the first house and the rent is also high and it is Rs. 3000. If Mona hires that house she might have to cut her expenses on food and other expenses by Rs. 1000 as she would be left with only Rs. 5000. In the same block, close to the second flat is one bed room apartment located on the top floor of the building with a balcony facing Sun. The balcony and the view add Rs. 500 to the monthly rent making it Rs. 3500. To live there would mean that Mona will be then left with only Rs. 4,500 to spend between food and other expenses.

Table 3.1: Expenses of Mona earning Rs. 8000

Option	Monthly Rent	Food	Other Expenses	Total	Affordability
A	2000	5000	1000	8000	Yes
B	3000	4500	500	8000	Yes
C	3500	4000	500	8000	Yes
D	4000	4000	500	8500	No
E					
F					

This table has been drawn for Mona based on her income and prices of commodity available in the market. Option A, B, C, D shows the various combinations of rent, food, and other expenses that may be borne by her. On analyzing the table, we find option A, B, C can be afforded by Mona. In case of option D the combination of monthly rent, food and other expenses are outside the ambit of Mona's budget.

Assess yourself: Taking in account the monthly rent, food and other expenses what other affordable options would you suggest for option E and F. Elucidate.

Story of Rekha

Rekha has a monthly income of Rs. 500. She uses this income to buy just two commodities i.e, Rice and Dal. The price of Dal is Rs. 50 per kg and the price of Rice is Rs. 10 per kg.

Rekha's income limits her consumption possibilities. If she spends all the income on Dal she could buy 10 kg per month. This is shown as point A on the diagram. On the other hand, if she spends all her income on rice, she could buy 50 kg per month. This is shown as point B in the diagram. Suppose, we draw a straight line joining points A and B. Then all the points between A and B can also be purchased. Hence, the line AB is called the budget line or the Consumption Possibility Line.

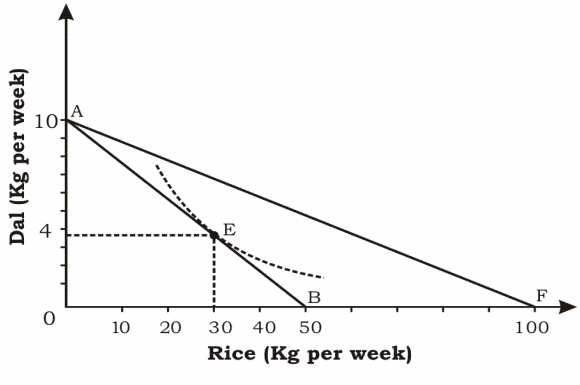

Figure 3.1 : **Consumer's Optimum Point**

Rekha is assumed to spend all her income on Rice and Dal and she does not save any of her income at all.

Which bundle of Rice and Dal will Rekha choose? This depends on her individual preference. Now the technique used here to show her preference is the technique of indifference curves. Every point in the space is supposed to have an indifference curve passing through it. Each indifference curve is assumed to show a particular level of satisfaction.

What will be shape of an indifference curve? Each indifference curve is assumed to be (a) downward sloping and, (b) convex to the origin 'O' in shape.

With the help of an indifference curve, we will discuss the consumption pattern of Rekha. In first case, she can consume more of both the goods or consumption of one good alone is possible. (b) As Rekha consumes more of any one of the two goods, it is assumed that with every additional consumption, her total satisfaction will fall.

Rekha will choose that combination of Rice and Dal which gives her maximum satisfaction. This is shown in figure 1, as the point of tangency between the budget line and an indifference curve at point E.

Suppose, the price of Rice falls to Rs. 5 per kg, now on spending her entire income on purchasing Rice only, she could buy 100 kg of Rice. The new budget line is AF. The effect of this change on the monthly consumption of Rice is called the Price Effect.

What will be direction of the price effect? Will the consumption of Rice increase or decrease as a result of the fall in the price of Rice? To answer this question, we divide the price effect into two parts: the Income Effect and Substitution Effect.

What is Income Effect? In the above example, Rekha, as a result of the fall in price of Rice, feels she has more purchasing power now. Earlier, she was spending 60% of her monthly income on Rice and now its price has fallen from Rs. 10/kg to Rs. 5/kg. As a result of price fall, the purchasing power has now risen relatively and so, she will change her consumption of rice. This change is called the Income Effect.

There are two possibilities:

1. If Rekha considers Rice as an inferior good, she will tend to reduce her consumption of rice with the price fall.

2. If Rekha considers Rice as normal good, she will tend to increase her consumption of Rice with the price fall.

Thus, the direction of the income effect depends on whether Rice is an inferior good or a normal good according to Rekha. Thus, the direction of the income effect cannot be predicted.

In the second case there is an increase in the price of goods needed by Rekha. The increase in the price of the commodity reduces the real income of Rekha. As discussed earlier, increases in the price of commodity worsen may the position of buyer like Rekha as she is not able to purchase the same amount of goods and services needed by her. This indirect effect of a price change on demand, both in

terms of increase or decrease in the price of the commodity is called Income Effect of the price change.

In the second case, there is an increase in the price of goods needed by Mona. The increase in the price of the commodity reduces the real income of Mona. (That will depend on the price elasticity of demand) As discussed earlier, increases in the price of commodity worsen may the position of buyer like Mona as she is not able to purchase the same amount of goods and services needed by her. This indirect effect of a price change on demand, both in terms of increase or decrease in the price of the commodity is called income effect of the price change.

Substitution Effect

The substitution effect of an increase in the price of any good is the switch of customer to a product which is relatively cheaper. An increase in the price of one brand A biscuit may persuade Rekha to opt for another brand B biscuit whose price has not increased. The price of the brand A biscuit was hiked by 20 percent. Rekha was not willing to consume an expensive biscuit. Higher price also means 'more expensive relative to substitutes' and it was likely that Rekha would buy less of that biscuit. She shifted to brand B biscuit which could be afforded within her limited budget. This effect is known as *Substitution Effect*. When the price of the product falls, the product becomes relatively cheaper. That is, it becomes more attractive relative to potential substitutes. A rise in the price of brand A biscuits caused Rekha to shift its purchasing pattern and substitutes for brand B biscuits and vice-versa.

Price Effect

If rice is a Normal Good, then the direction of the price effect is clear: There will be an increase in the consumption of Rice per month. But if Rice is an Inferior Good, then the substitution effect and the income effect will move in the opposite direction and the overall price effect will be unpredictable.

A good which is highly of the inferior type is very large. Such goods are called **Giffen Goods**. In the case of Giffen goods the usual negative relation between price and Quantity demanded is not observed. Instead, in the case of Giffen goods a positive relation between price and quantity demand is observed.

Unit

IV

Markets Under Perfect Competition

Topic	:	Markets under Perfect Competition
Rationale	:	Competition between firms encourage them to make a good use of scarce resources and money in order to make profits. These firms produce products that could be sold at a best value to the consumers.
Pedagogy	:	Problem solving, Diagram, Mathematics, Story telling
Key concept	:	Perfect competition

Features of Perfect Competition

1. A competitive industry is composed of many firms, and each firm is very small with respect to the size of industry.
2. The output of one firm cannot be distinguished from the output of others.
3. New firms are free to enter the industry and the old firms are free to exit.
4. Each firm and consumer is fully aware of available products and prices.

Based on the Features of Perfect competition given above, answer the following questions:

a. Under what conditions will the demand curve for the output of a firm be a horizontal straight line?

.....

.....

b. Can the firm double or triple its sales without reducing or increasing the price of its product?

.....

.....

c. Why are the firms that work under perfect competition considered to be as price takers and not price setters?

.....

.....

d. In a perfectly competitive market explain why it makes no difference to one supplier if another supplier is selling at a lower price?

.....

.....

e. In perfect competition, why do individual decisions have no effect on the price of the product?

.....

.....

Story of Sale of Wheat

Consider the following example of a remote village named Sugauli in India. The staple diet of natives of the village is wheat which is grown abundantly in the local fields of the farmers. The farmers sell the wheat that they produce to the local consumers. The price is determined by the market forces on the basis of market demand and supply. No individual farmer or consumer can influence price. There are a large numbers of farmers, and each of them sell their produce on the same price. One of the farmers,Sohan from the same village does not approve of the prevailing price of his produce i.e. wheat. He decides not to sell his produce at the prevailing price and rather stores his produce to be sold later.

Based on the story given above, answer the following questions:

How many competitors are there?

.....

How do they compete in the market?

.....

Imagine there is a rise in consumers demand for wheat. What will happen to the price of the wheat?

.....

Is it possible that the individual demand for wheat increases but the price does not increase subsequently?

.....

Hint: In perfect competition, an individual farmer has no influence over the market price. In case, one farmer asks for higher price the consumer would purchase wheat from other sellers who have not yet increased the price of wheat.

The Market for Computer

Consider a market for computer, where there is perfect competition among firms producing computers. The computers are similar in shape, size and colour. There are no other substitutes to computer available in the market. Imagine there is a rise in consumers' demand for computers.

1. What will happen to the market price of computers?

   .....

2. What will happen to the profits of computer producing firms?

   .....

3. What will happen to the number of firms in the computer industry?

   .....

4. What will happen to the output of computers and what will be the effect on their market price?

   .....

5. How can the sellers maximize their profit from the sale of computer?

   .....

6. Do you think the market for computers is a good example of a perfectly competitive industry?

   .....

Hint: No individual consumer can influence the market price of the consumer. There are large numbers of sellers of computer in the market. Profits will be earned by selling large number of computers rather than by raising the price of the computers. There is freedom of entry and exit into the markets. It may happen that some new firms outside the industry will observe that profits are rising for firms in the computer making industry. They will try to enter the market and produce computers to sell and make profits. As the supply of computer increases, their price will start to fall again, and so the profits of firms will also fall. Eventually, profits will fall to a level just high enough to keep existing firms

in the industry, but not high enough to attract any firms in search of high profits. In this situation, firms in the industry are said to be earning a normal profit.

Question based on the Diagram

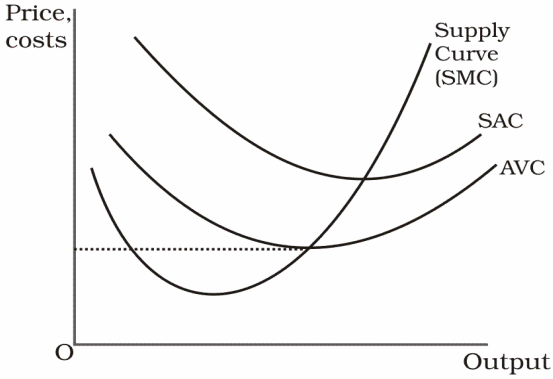

Figure 4.1 : **Short Run Cost**

As you can see in the diagram, that the SMC curve cuts the AVC (Average Variable Cost) curve at its minimum point. Explain why this must be so?

Hint: Marginal costs are derived from variable costs. Apply the marginal and average concepts.

Assess yourself: Discuss why an average revenue curve of a firm in perfect competition is also called as the Demand curve of the individual firm?

Hint: The firm's Demand curve is also its Average Revenue curve because the average revenue a firm gets from selling a commodity is equal to the price of the commodity.The demand curve tells us the price, at which the supplier can sell a given quantity. This means that it also tells us the average revenue it gets per unit sold when it sells that given quantity. So the firm's demand curve and the average revenue curve are identical.

Assess yourself: Explain, why P = MR = AR for the perfectly competitive firm?

Hint: Under perfect competition, the Demand curve of an individual firm is the Average Revenue curve, which is also the Marginal Revenue curvep. The demand curve, D=MR=AR, is horizontal because the firm's output is too small to affect market price. This is because a horizontal demand curve makes price and MR equal and, therefore, both must equal marginal cost according to the profit maximizing principle.

Questions based on Mathematics

In a competitive market where the supply price is 2 + 0.25q and demand price is Rs. 10 − 0.8q. The government imposes a per unit tax of Rs. 4. How much of this

tax will mean as a price rise to the consumers? What will be the amount of tax revenue raised?

Solution

Supply price in (Rs.) $2 + 0.25q$
Demand price in (Rs.) $10 - 0.80q$

The original equilibrium price and quantity can be found by equating demand and supply price. Hence,

$$2 + 0.2.q = 10 - 0.8q$$
$$0.20q + 0.80q = 10 - 2$$
$$1q = 8$$

Substituting this value of q into the supply schedule gives,

$$P = 2 + 0.20(8)$$
$$= 2 + 1.60$$
$$= 3.6$$

If a per-unit tax is imposed, then each quantity would be offered for sale by supplier at the previous price (i.e., price that was not taxed) plus the amount of the tax. In this case, the tax is Rs. 4 and so, the supply schedule shifts upward by Rs. 4. Thus, the new supply schedule becomes,

$$P = 2 + 0.20q + 4$$
$$= 6 + 0.20q$$

Again, equating the demand and supply price,

$$6 + 0.20q = 10 - 0.80q$$
$$0.20q + 0.80q = 10 - 6$$
$$1.0q = 4$$

Substituting this value of q into the demand schedule,

$$P = 10 - 0.80(4)$$
$$= 10 - 3.2$$
$$= 6.8$$

Therefore, the consumer will see a price rise of,

$$6.8 - 3.6 = 3.2$$

Total tax revenue = quantity sold x tax per unit

$$4 \times 4 = 16$$

Assess yourself: Do you agree that there are no perfectly competitive industries in the world? Why then we spend time studying perfect competition?

1. Perfectly competitive firm uses society's scarce resources with optimum efficiency and it is a benchmark to compare the performance of other types of firms
2. It is easy to analyze.

Unit

V

Markets Under Imperfect Competition

Topic	:	Markets Under Imperfect Competition
Rationale	:	Imperfect competition leads to an inefficient allocation of resources.
Pedagogy	:	Problem Solving, Story Telling, Diagram
Key concept	:	Monopoly

Features of Monopoly are listed below

Number of sellers	: Single seller
Number and size of distribution of buyers	: Unspecified
Product differentiation	: No. Only close substitutes
Conditions of entry and exit	: Prohibited or difficult entry

Based on the features mentioned above, give some examples of monopoly.

Hint: A monopoly is an industry with a single firm, in which the entry of new firms is blocked. It need not be a large firm especially when the market is small. What matters is the size of a single firm relative to the total market demand for the product. For e.g., A small medical shop located in a remote area.

Assess yourself: Do you agree that monopoly can exist in the real life world? How?

Hint: Monopoly can exist. If there are barriers to entry such as transport bottlenecks, legal restrictions, patent and cost advantage of superior technology.

Story of a Brick Seller

Consider a small, isolated village that has only one supplier of brick. When residents want to build a house, they will have to buy from the sole brick seller available in the village. The high cost of the transportation makes it unlikely that brick producers in other cities will be viable competitors. At the same time, there are few good substitutes for bricks like wood and husk. However, these are not as strong and comfortable as bricks.

Assess yourself: Why a monopoly firm does not have a 'supply curve' like perfect competition?

Hint: In microeconomics theory, the demand curve and the supply curve are supposed to be independent of each other. In a competitive market, the supply curve depends on the cost condition and does not depend upon the demand curve but under monopoly, the suppliers decides on their supply by taking the demand conditions into account.

Assess yourself: Why is the demand curve for the output of a monopoly downward sloping and not horizontal?

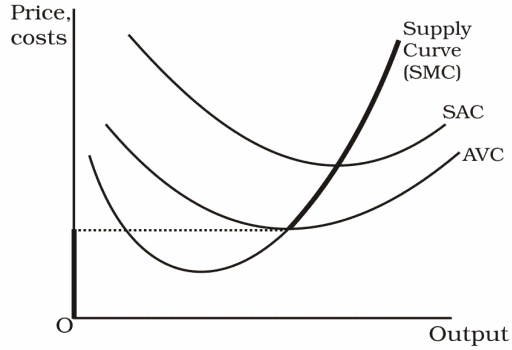

Figure 5.1 : **Supply Curve of Perfect Competition**

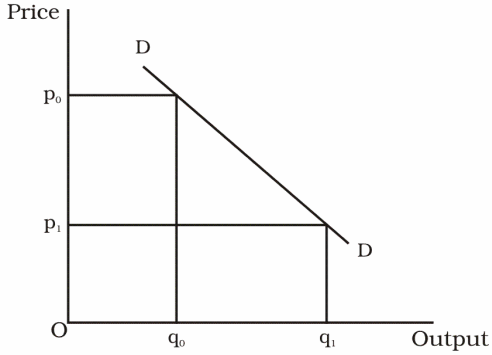

Figure 5.2 : **Demand Curve of Monopoly**

Hint: A price rise will cause the monopoly to loose some of its customers. Thus, at higher price, the monopolist will have to sell less.

Assess yourself: Can a monopoly firm always earn a profit?

Hint: No, if the demand for its product is low, or if the firm is inefficient, even a monopoly firm may loose money and eventually be forced out of business.

Assess yourself: How do you find a profit maximizing output level in case of a monopoly?

Hint: Monopoly firm produces the output that maximizes its profits but it does not say how large will be its profit. The monopoly firm produces output where marginal cost equals marginal revenue and where marginal cost curve cuts the marginal revenue curve from below.

Assess yourself: Why does and economist find the situation of a monopoly objectionable?

Hint: A monopolist will charge a higher price and produce a smaller output than an another kind of competitive industry with the same demand and cost conditions.

Assess yourself: How does monopoly breeds inefficiency in resource allocation? How do you come to know that resources are not allocated efficiently in a monopoly market?

Hint: A monopolist charges a higher price and produces a smaller output than what another competitive industry would do in the similar demand and cost

conditions. In case of monopoly, resources are not allocated efficiently because the sum of consumers' surplus and producers' surplus is not maximised.

Assess yourself: Suppose a small locality has a single grocery store selling multiple products.

a. Is it a monopoly?
b. If yes, then give arguments in support of your answer.

Assess yourself: Which of the following industries is a pure monopoly? State reasons to support your answer.

a. The only supplier of heating fuel in an isolated town
b. The only supplier of brand X computers in the town
c. The only supplier of brand Z digital cameras in a country

Hint: (a)

Assess yourself: Suppose that a monopoly industry produces less output than a similar other competitive industry. Would this be considered socially undesirable?

Price Discrimination

A firm cannot break even by charging uniform (non-discriminatory) prices, but with price discrimination it can earn a small profit. Also, sometimes, a firm which is already making profit can increase the profit by charging discriminatory prices.

Assess yourself: Explain, why in the case of price discrimination, some consumers must be worse off, if the firm is permitted to charge discriminatory prices?

Hint: The practice often allows low income person to buy a product which otherwise would have not been affordable, if a single price was charged.

a. Perfect competition
b. Monopoly

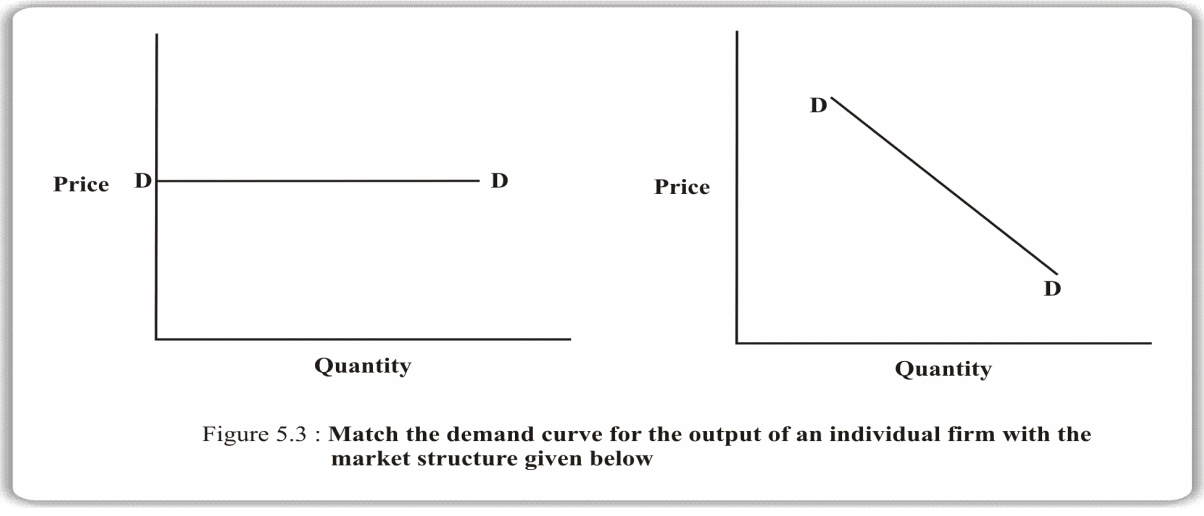

Figure 5.3 : **Match the demand curve for the output of an individual firm with the market structure given below**

Hint: The demand curve for the output of monopolist is downward sloping
The demand curve for the output of perfectly competitive is a horizontal line

Relevance of Perfect Competition and Monopoly

Perfect competition and monopoly are the two extreme market conditions which we rarely come across in the real world of business. Then the question arises as to why study them? It is useful to think of perfect competition and pure monopoly as extremes with other market structures placed in between them. The two extreme models, therefore, serve as benchmarks and provide guidance in analyzing situations.

Unit

VI

Markets Under Imperfect Competition

Topic : Markets Under Imperfect Competition
Rationale : Firms manipulate both price and quantity of goods in an attempt to outsmart their rivals
Pedagogy : Problem Solving, Mathematical Approach, Story Telling
Key Concept : Oligopoly

Features of Oligopoly are listed below:

Number of independent sellers	:	Few
Seller concentration	:	Medium or high
Product differentiation	:	Products may be homogeneous or close substitutes
Condition of entry	:	Difficult

Based on the features of oligopoly, answer the following questions.

a. Why a firm in oligopoly sticks to its price?

.....

.....

b. Can an oligopolistic firm have a differentiated product? Explain with the help of an example from real world.

.....

.....

Assess yourself: Where do we set the boundary of an industry?

Hint: Consider the production of different brands of bread. A firm which produces brand x bread faces stiff competition from other bread sellers, however, it is the only producer of brand x bread. The brand x bread has little market power because near substitutes for it are also available. If the firm were the only producer of the bread, it would have had more market power when fewer (or no) alternative would have been available. When fewer substitutes exist, a

monopolist has more power to raise price because demand for its product is less elastic. A monopolist that produces all the food in the economy would exercise enormous market power because there are no substitutes at all for food as a category.

Story of a Biscuit Market

Oligopolistic market structure dominates because of well established firms which impose barriers to entry. The biscuit industry in India is dominated by big names like brand X. Brand X biscuit was a household choice among kids. The role of neighboring bakery cannot be overlooked as it poses a challenge to this sector. Thus, we can conclude that mass production and consumption of standard biscuits like brand A and brand B dominates the market and industry. The local bakers are not geared for mass production. As a result we find co-existence of both kinds of market structure in biscuit industry. At all India level, the biscuit industry is oligopolistic industry, whereas at the local level, there are many small producers.

Classify the Fast Moving Consumer Goods (FMCG) products of a particular company and its competitions on the basis of oligopolistic competitive market that it operates in and why?

.....

.....

How small local biscuit manufacturers are able to survive in the market?

Assess yourself: How well do oligopolies perform?

Hint: An oligopoly is an industry comprising a small number of competitors. Each firm in an oligopoly is large enough to have some control over market price. An oligopoly market may have two firms or twenty, and those firms may produce differentiated or undifferentiated products.

1. Oligopolistic firm can make a profit as a group if they cooperate. If oligopolistic firms begin to compete aggressively with each other, they can all make losses. Give example.
2. Are oligopolistic firms efficient, or do they lead to an inefficient use of resources?
3. A few large oligopolistic firms carry out bulk of industry's business, and other smaller participants follow their larger rivals, thereby leading them to survive at the margin of the industry. Eg., Soft drink manufacturers

Mathematical Approach

A firm Sigma is operating in a non cooperative (non cooperation from each other) oligopolistic market structure. Its production figure is 500 units of output per period which is sold at Rs.10 each. In the present situation, its total revenue is

Rs. 5000. The firm now decides to change its price and increases it from Rs. 10 to Rs. 15. The rivals do not reciprocate by changing the price and the sales fall from 500 units to 250 units. On the other hand, if the firm had decreased the price of the product from Rs. 10 to Rs. 8 and if the rival firms had not matched the decrease in price, then sales would have increased to 900 units.

Calculate change in the total revenue of Sigma when its price increased from Rs. 10 to Rs. 15.

.....

Calculate change in the total revenue of Sigma when the price decreased from Rs. 10 to Rs. 8, assuming other firms do not also reduce price.

.....

Hint: TR = p × q

Assess yourself: Do you agree that oligopolistic firms create unique products in terms of consumer perception?

Hint: To the extent that an oligopolistic firm can create a unique product in terms of features, location, or appeal; it protects itself from the pressures of competition that will force down its price and eat into sales. Such Oligopolists have some degree of influence on market forces.

Assess yourself: Oligopolistic firm advertise to influence the consumer.
Assess yourself: Why do oligopolies advertise but perfectly competitive firm generally do not?

Hint: Under oligopolies, product may not be identical and they can compete via advertisement. Firms in a competitive market have homogeneous products that cannot influence the market.

Assess yourself: Oligopolistic decisions are difficult to analyse than other form of economic organization? Why?

Hint: Oligopolistic decisions are, by their very nature, interdependent. Oligopolist recognize that the outcome of their decisions depend on their rival responses. For e.g., A manager of a X brand soap knows that their actions will probably lead to reactions by Y brand soap, which in turn require readjustment by X brand soap, thereby modifying Y brand soap's response and so on.

Assess yourself: Why do some economists consider cartels to be the worst form of market organization in terms of efficiency and consumer welfare?

Hint: Cartel is a group of producers which collaborate to allocate production among the members. Cartels may also fix the prices charged by the members. Cartels allow smaller and less efficient producer to survive and consumers have to pay higher price.

Unit

VII

SUPPLY

Topic : Supply
Rationale : Supply decision depends upon the profit potential
Pedagogy : Mathematics, Diagram and Tables
Key Concept : Market supply

TABLE

The market supply curves are the summation of the individual supply curves. It shows how much of a good all producers are willing to supply as its price changes.

The table and the diagram illustrate that market supply is the sum of the individual supply curves of all the firms in a particular market – that is, the sum of all the individual quantities supplied at each price. An increase in the market price will lead to an increase in quantity supplied, and a decrease in the market price will lead to decrease in quantity supplied.

Total Quantity supplied in the Market = Sum of quantity supplied by firm A + Firm B + Firm C and so on.....

Table 7.1: Total Quantity Supplied in the market

Price	Quantity supplied by –			Total quantity supplied in the market
(Rs)	*Firm A*	*Firm B*	*Firm C*	
1.5	5,000	10,000	20,000	35,000
3	10,000	20,000	30,000	60,000

In this example, there are three producers: Firm A, Firm B and Firm C. The supply schedule of each are listed in a table and plotted in the diagram as the individual firm's supply curves and for market supply curve as well. By adding the quantities supplied at each price of firm A, firm B and firm C, we obtain the market supply curve. For instance, at a price of Rs 3, Firm A offers 10,000 units, firm B provides 20,000 units and Firm C supplies 30,000 units for a market supply quantity of 60,000 units. The market supply curve reflects the quantities that all producers are able and willing to supply at each price.

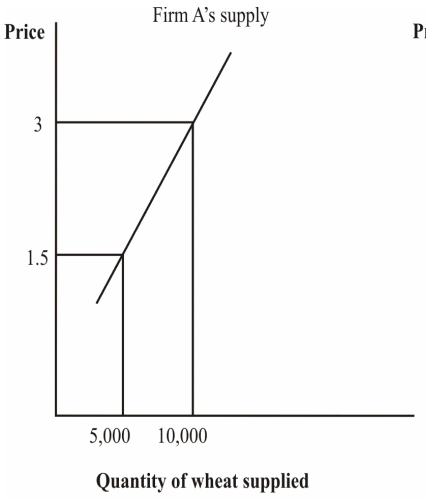

Figure 7.1 : **Firm A's Supply**

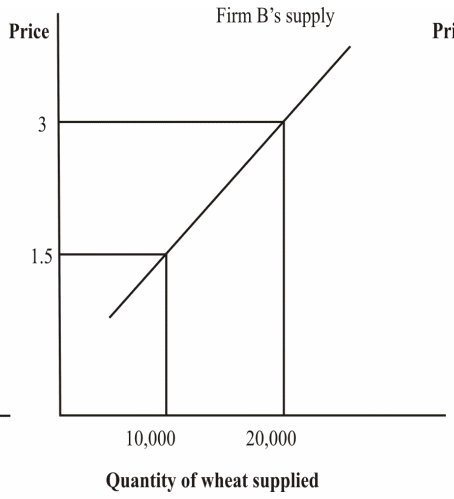

Figure 7.2 : **Firm B's Supply**

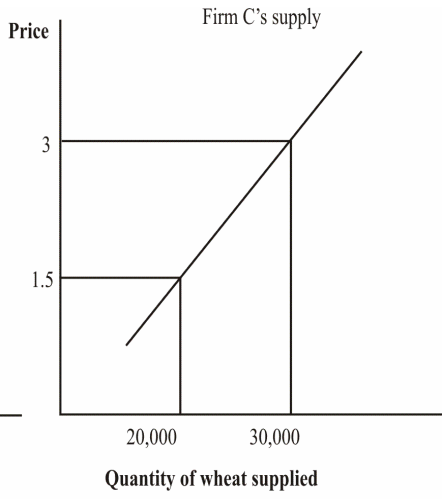

Figure 7.3 : **Firm C's Supply**

Market supply curve can be derived from Quantity supplied by Firm A, Firm B and firm C. It has been derived by the horizontal summation of all the individual quantities supplied at each price.

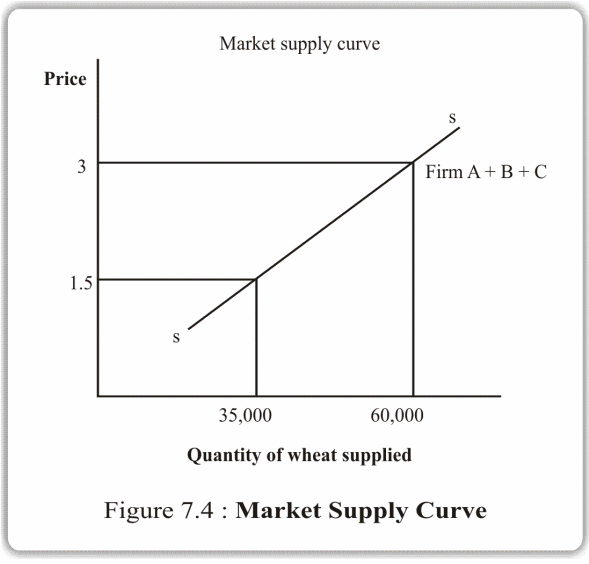

Figure 7.4 : **Market Supply Curve**

Mathematical Approach

The supply curve shows a relationship between the quantity supplied and the price. This relationship can be expressed in the form of equation: Qs = f(P) where Qs is the quantity supplied and P is the price. It is read as 'Quantity supplied is a function of price'. When we state the supply function of the firm to be Si = P −10, it means that the firm will not supply when the price falls to Rs.10 and below it.

The individual supply curve of different firms at a particular price level shows the amount of goods that the producers are willing to supply. With every increase in price, the firms supply more amount of the commodity. The short run market supply curve shows the amount of output that the industry will produce in the short run for every possible price.

Let there be three firms which supply the commodities.

Firm 1, which has a supply equation, $S_1(P) = P - 5$ indicates that the firm will not supply anything when the price is less than or equal to Rs.5.

Firm 2, supply equation, $S_2(P) = P - 10$ means firm will supply commodities only when the price is more than Rs.10.

Firm 3, supply equation, $S_3(P) = P - 15$, means firm will supply commodities when it is priced above Rs.15.

As mentioned above, the firms are not willing to supply below a particular level of prices. In case any of the firm will not be able to meet their average cost of production.

$S_1(P) = 0$ when $P < 5$
$S_1(P) = P - 5$ when $P > 5$
$S_2(P) = 0$ when $P < 10$
$S_2(P) = P - 10$ when $P > 10$
$S_3P) = 0$ when $P < 15$
$S_3(P) = P - 15$ when $P > 15$

Now, let us see what happens to the market supply. For any price situation below Rs.5, the market supply will be zero as none of the firms are ready to supply at that level of prices.

In case, when the price is greater than Rs.15, all three firms will supply in accordance with their respective supply equations. Then the market supply will be as,

$$S_m(P) = S_1(P) + S_2(P) + S_3(P) = 3P - 30$$

In another case, where the price level is above 10 but less than 15, the market supply will be the summation of only firm 1 and firm 2, as firm 3 will not supply below the price level 15. The market supply equation will turn out to be,

$$\begin{aligned} S_m(P) &= S_1(P) + S_2(P) \\ &= P - 5 + P - 10 \\ &= 2p - 15 \end{aligned}$$

For P_2 and prices below P_3, the market supply is the sum total of the two firms, that are, firm 1 and firm 2. After P_3, the market supply is the sum of the quantities supplied by each of the three firms.

Let's take an another example. Given are the Supply finctions for,

First firm $P = 5 + 0.2Q^1s$
Second firm $P = 10 + 0.5Q^2s$
Third firm $P = 24 + 0.8Q^3s$

The total supply function will be as: $Qs = Q^1s + Q^2s + Q^3s$

$Q^1s = -25 + 5P$
$Q^2s = -20 + 2P$
$Q^3s = -30 + 1.25P$

Assume any value for P and then, calculate Q^1s, Q^2s, Q^3s. For example, let us take the value of P as Rs. 12.

when P = 12, then, on placing the value of Price (P), Quantity Supplied (Qs) can be calculated as,

$Q^1s = -25 + 60 = 35$
$Q^2s = -20 + 24 = 4$
$Q^3s = -30 + 15 = -15$ (Ignore)

Total Qs = 35 + 4 = 39

The Quantity Supplied for firm 3 (Q^3s) is negative, which means that firm 3 is not willing to produce at this price (P = 12). Thus, we shall consider the quantity supplied by firm 1 and firm 2 only while calculating the market supply.

Unit

VIII

Money and Banking

Title : Money and Banking
Rationale : The monetary policy of the country has been designed to regulate the supply of money as it ensures the credit requirement of agriculture, industry, trade, commerce and other productive activities that promote overall economic growth
Pedagogy : Story Telling and Use of Tables
Key Concept : Credit Creation by Commercial Bank

Imagine a village where there is no bank. After some time, Rajan, an inhabitant of the village opens a bank called New Bank. The purpose of the bank is to allow depositors a safe place to deposit their money. This new bank only accepts deposits but cannot give loans to its people. In this imaginary village, all deposits are held as reserves and so there is no credit creation by the bank. Rajan's friend Sanju deposits Rs. 1000 in the New Bank.

Tables

The balance sheet is a 'T-account' with assets marked on the left column and liabilities on the right column. The components of assets are loans, bonds and reserves. The deposits would be mentioned in the right column (as shown in the table) i.e. under liabilities.

Table 8.1

Assets	Liabilities
Loans Bonds Deposits	Deposits

Let us construct the balance sheet of Sanju in a New Bank.

New Bank

Table 8.2

Assets	Liabilities
Reserves 1000	Deposits 1000

On the left hand side of the T-account are the bank's assets of Rs. 1000 (the reserve held in its vaults). On the right hand side of the T-account are the bank's

liabilities of Rs. 1000 (the amount it owes to its depositors). Notice that the asset and liabilities of the New Bank exactly balances. In the absence of the provision for loan, there is no credit creation by the bank.

Another hypothetical example is of a village which has many banks. Here, the natives deposit money in the bank for security purpose and also earn interest on their principal amount deposited in the bank. How will the bank ensure rate of interest to the customer on their principal savings deposited?

Hint: The bank creates money using fractional reserve system. When banks receive a new deposit, they keep only a fraction of money in reserve and lends out the rest of the money. The lend out money finds its way back into the banking system, increasing deposits further and also setting of the new rounds of loans. When the process finally settles down, total deposits in the banking system multiplies the initial deposits. The total process of multiplication of the initial deposits in several stages is referred to as the process of credit creation.

Bank A is a new bank and it has zero balance initially. This Bank as advised by the apex body has to keep 20% of its deposits in cash reserve. This also means that the bank can invest 80% of its fund profitably. Suppose a customer deposits Rs. 1000 in Bank A. How will the bank use this money?

Total 8.3: Balance sheet of Bank A

Assets	Rs.	Liabilities	Rs.
Cash	1000	Deposits	1000
Total	**1000**	**Total**	**1000**

The bank has to pay interest to the consumer in addition to the principal amount deposited by him in the bank. Suppose Mr Gir approaches the bank for a loan. The bank keeps 20% as reserve and advances the remaining 80% as loan to Mr. Gir.

Total 8.4: After giving loan to Mr. Gir, the Balance sheet of Bank A

Assets	Rs.	Liabilities	Rs.
Reserve Loan to Gir	200 800	Deposits	1000
Total	**1000**	**Total**	**1000**

Mr. Gir has not been given the loan in cash rather an account has been opened in bank 'A' and the amount is credited to his account. Mr. Gir had taken loan from Mr. Ajay and Mr. Gir decides to repay the loan. Mr. Gir gives a cheque worth Rs. 800 to Mr. Ajay who depostis the cheque in Bank B.

Total 8.5: Balance Sheet of Bank 'B'

Assets	Rs.	Liabilities	Rs.
Cash	800	Deposits	800
Total	**800**	**Total**	**800**

Bank B keeps 20 percent as cash reserves and invests Rs. 640 in mutual funds. Bank B purchases mutual funds by issuing the cheque to the broker. The broker then deposits the cheque in his own Bank 'C'.

Total 8.6: After investing in Mutual Fund, the balance sheet of Bank 'B'

Assets	Rs.	Liabilities	Rs.
Reserve Purchase of mutual fund	160 640	Deposits	800
Total	**800**	**Total**	**800**

Total 8.7: Balance sheet of Bank 'C'

Assets	Rs.	Liabilities	Rs.
Cash	640	Deposits	640
Total	**640**	**Total**	**640**

As evident, the process will continue certainly but not indefinitely. The original excess reserves of Rs. 800 with the first bank can be parceled and settled among various banks and have become required reserves. The total deposit which gets carried over a period of time will be five times the original deposits. In fact, the potential credit expansion can be determined by the following formula:

$$\text{Potential expansion of credit} = \text{Original Deposit} \times \frac{1}{\text{Cash Reserve Ratio}}$$

$$800 \times \frac{1}{20\%} = \text{Rs.4,000}$$

In our example, it will be:

Thus, the total deposits of Rs. 5,000 have been created by the banking system. Out of the initial deposits of Rs. 1,000; the remaining Rs. 4,000 deposits have been made by the banking system itself.

We found that bank created money by lending money. They accept deposits, and then lend a portion of those deposits in order to earn interest income. The portion of the deposit left with the bank is a reserve to meet the demand for withdrawals. In a **fractional reserve banking system**, banks may keep 10 to 20 percent of their deposits as a reserve. Rest of the money is given on loan. When any bank loan these deposits, money is created.

Assess yourself: Bank ABC is a new bank in a country, where there are a large number of other banks too. A Cash Reserve Ratio of 20% has been set for Bank ABC. To begin with, it has no cash reserves. Later, it receives a new deposit of cash of Rs. 5000. What is the maximum loan which Bank A can give? What is the maximum new bank deposit that can be created in the system?

Unit

IX

Role and function of the Government

Title : Role and function of the Government
Rationale : Fiscal policy is the Government's policy with respect to spending and taxation for the public welfare
Pedagogy : Use of Newspaper clipping, Table, Story-telling, Problem-solving
Key Concept : Fiscal Policy

Tables

The table given below is useful for following two reasons:
Firstly, the data provides estimates of the receipts and expenditure of the Government under various heads which is needed by the economists for elucidation of many economic problems. Secondly, it facilitates in comparing receipts and expenditure of Central Government.

Total 9.1: Receipt and Expenditure of the Central Government

S. No.		2005-06	2006-07	2007-08	2008-09* (Rs Crore)	2009-10 (BE)	2009-10 (P)	2010-11 (BE)
1.	**Revenue Receipts *(a+b)***	**9.4**	**10.1**	**10.9**	**9.7**	**10.5**	**8.8**	**8.7**
a.	Tax Revenue (net of States' share)	7.3	8.2	8.8	7.9	8.1	7.0	6.8
b.	Non-tax Revenue	2.1	1.9	2.1	1.7	2.4	1.8	1.9
2.	Revenue Expenditure of which:	**11.9**	**12.0**	**11.9**	**14.2**	**15.3**	**13.9**	**12.2**
a.	Interest payments	3.6	3.5	3.4	3.4	3.9	3.2	3.2
	Major Subsidies	1.2	1.2	1.4	2.2	1.8	1.9	1.4
	Defence Expenditure	1.3	1.2	1.1	1.3	1.5	1.4	1.1

	Revenue Deficit (2-1)	2.5	1.9	1.1	4.5	4.8	5.1	3.5
	Capital Receipts of which	**4.3**	**3.5**	**3.4**	**6.2**	**6.9**	**6.8**	**5.4**
	Recovery of Loans	0.3	0.1	0.1	0.1	0.1	0.1	0.1
	Other Receipts (mainly PSU disinvestment)	0.0	0.0	0.8	0.0	0.0	0.4	0.5
	Borrowing and other Liabilities**	4.0	3.3	2.5	6.8	6.8	6.3	4.8
	Capital Expenditure	1.8	1.6	2.4	1.6	2.1	1.7	1.9
	Total Expenditure **[2+5=6(a)+6(b)]** of which:	**13.7**	**13.6**	**14.3**	**15.8**	**17.4**	**15.5**	**14.1**
	Plan Expenditure	3.8	4.0	4.1	4.9	5.6	4.6	4.7
	Non-plan Expenditure	9.9	9.6	10.2	10.9	11.9	10.9	9.3
	Fiscal Deficit [6-1-4(a)-4(b)]	**4.0**	**3.3**	**2.5**	**6.0**	**6.8**	**6.3**	**4.8**
	Primary Deficit [7-2(a)]	**0.4**	**-0.2**	**-0.9**	**2.6**	**3.0**	**3**	**1.7**
	Memorandum Items				**(Rs Crore)**			
	Interest Receipts	22032	22524	21060	20717	19174	22018	19253
	Non-plan Revenue Expenditure	327518	524372191	420861	559024	618834	654188	643599

Source: Union Budget documents, Economic survey 2010-2011
BE-Budget estimates P: Provisional actual (unaudited)
** Based on provisional actual for 2008-09.*
** * Does not include receipts in respect of the Market Stabilization Scheme, which will remain in the cash balance of the Central Government and will not be used for expenditure.*

Note: 1. The rations to GDP at current market prices are based on the CSO's National Accounts 2004-05 series.
2. The figures may not add up to the total due to rounding/approximations.

Answer the following based on the data given in the table:

What are the different sources of Government's income in the economy?

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.....

Identify the different heads under which Government spends money?

.....

.....

Differentiate between the terms “revenue receipts”, “revenue expenditure”, “capital receipts” and “capital expenditures”?

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Fiscal Deficits And Economic Growth

Economists have discussed the relationship between fiscal deficits and economic growth in a number of different ways:

1. When the fiscal deficit is larger, it implies that the government will have to tap more fund from the financial market. Hence, it is argued that this will tend to create a shortage of funds and push up the interest rates in the economy. Higher interest rate will discourage private investment, since, for private businesses, interest is rendered as a cost. Hence, larger fiscal deficits will decrease the level of private investment and as a result, the rate of growth of the economy.

2. When the fiscal deficit is larger, it implies government expenditure is more than government taxation and other revenues. If the economy is already initializing all its labour and other resources, additional government expenditure will encourage the further utilization of these resources and push up the prices of these resources, these leading to inflation.

3. If the fiscal deficit has increased because of increased government expenditure at a time when there is lack of aggregate demand and unemployment, then the higher fiscal deficit will not necessarily cause inflation or fall in private investment.

4. If the higher fiscal deficit is due to higher government expenditure on roads, dams and public transport then this may encourage private investment and actually speed up the rate of growth of the economy. Further, if the rate of growth of the economy rises, government tax collection will rise automatically since most taxes are linked to income, sales and output. As a result, the fiscal deficit, having first increased, may later on fall.

BUSINESS

'No expenditure cut in FY'18 to meet fiscal deficit target'

PTI

PRESS TRUST OF INDIA

NEW DELHI , MARCH 01, 2018 21:59 IST
UPDATED: MARCH 02, 2018 17:08 IST

Revenue buoyancy to keep deficit well within target: Jha

The government will not go for an expenditure cut in 2017-18 to meet fiscal deficit target of 3.5% of GDP even as it has breached the level of 113.7% of the target, Expenditure Secretary Ajay Narayan Jha said on Thursday.

"There is no expenditure cut. There has been a policy, there will not be any expenditure cut," Mr. Jha said.

When asked how the government will meet the revised fiscal deficit target of 3.5%, he said indirect tax collections have already been factored into the revised target. The government has accounted for only 11 months of GST against 12 months of expenses as March GST numbers would come in April. Fiscal deficit has touched ₹6.77 lakh crore at the end of January 2018, 113.7% of the target for the year, on account of higher expenditure.

Upward Revision

The government had revised upwards the fiscal deficit at ₹5.95 lakh crore or 3.5% of GDP in the Union Budget 2018-19.

Earlier, the fiscal deficit target was 3.2%. Mr. Jha said the economy is looking up as the key sectors are showing buoyancy and growth.

"We expect that it will grow further and as per expectations. As far as fiscal deficit is concerned... a lot of adjustments will take place through recoveries which means that there is a net budgeting aspect," he said.

He said buoyancy in revenue also comes in the last two months of financial year and the fiscal deficit number will remain well within the revised target

Answer the questions based on newspaper clipping given above

Do you agree that higher growth rate would be helpful to lower the fiscal deficit?

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What are the implications of fiscal deficits for your economy?

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What steps should government take to reduce the deficits?

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Unit

X

MACROECONOMIC EQUILIBRIUM

Topic : Macroeconomic Equilibrium
Rationale : Aggregate Demand and Aggregate Supply together provide a framework to study the macroeconomic equilibrium of an economy
Pedagogy : Diagrams
Key Concepts : Aggregate Demand and Aggregate Supply

If we refer back to figure 3 in unit I, and focus on the flows of money, then we see that there is no way in which source of the money in the system can leak out or additional money can get injected into the system.

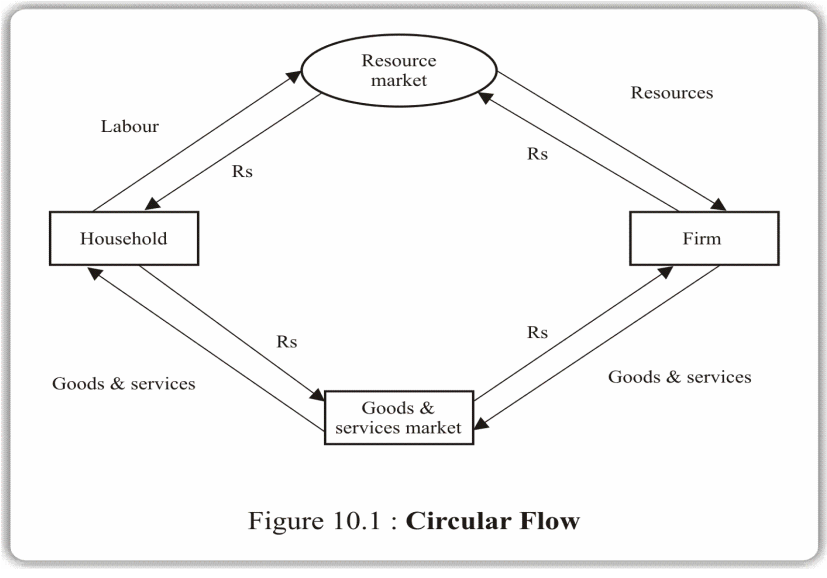


Figure 10.1 : **Circular Flow**

This implies that the rate of flow in the system will always be steady, without any fluctuation. Correspondingly, the flow of resources and goods and services in the system will also be steady, without any fluctuation.

Is this a correct picture of the economy? One must advice that it is not. In fact, there are fluctuations in the flow of money, resources and goods and services. The overall level of economic activity is measured by National Income accounting or other measures such as GVA (Gross Value Added). The estimation of GVA and other measures of economic activity will be discussed later and they are likely to vary from year to year.

What are the reasons for the variations in the flow? There are two reasons: (i) Over long period of time, the annual flow (for example GVA) shows increase in resources, like - labour, capital and enterprise are applied. This is called Economic Growth.
(ii) There can be short term fluctuations arising out of (a) factors, like natural calamities, such as - drought, earthquakes or floods, and (b) factors such as change in aggregate demand and supply.

Here, we focus on short term fluctuations arising out of changes in aggregate demand. Ever since the rise of market economy in different parts of the world, fluctuations in the economic activities, like - production, employment and price level have been noticed. These fluctuations in economic activity form an Economic Cycle.

Economic activity seems to show a cyclical path: Expansion, Boom, Recession, Depression and then again Recovery through successive stages of the Economic Cycle.

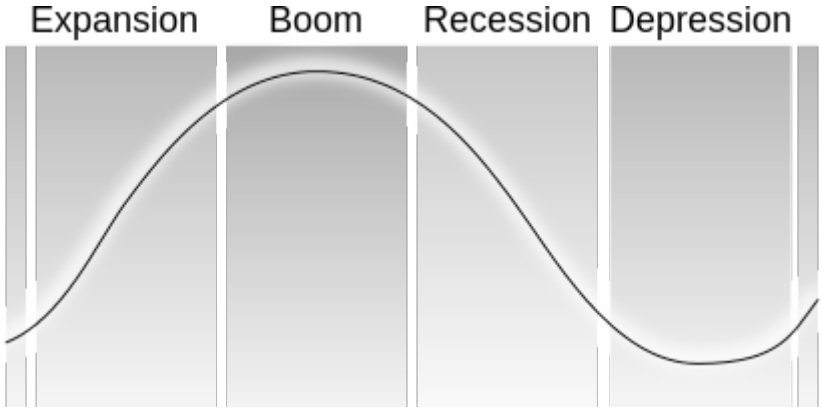


Figure 10.2 : **Cyclical Path**

In addition, there can be periods of Depression when the economy experiences fall in economic activity, much below the previous high level of economic growth for a long period of time.

The Great Depression (1929-39) was such a period. John Maynard Keynes (1883-1946), one of the greatest economist, was the first to provide an explanation for the occurrence of depression.

Keynesian Economics

In the case of depression, the level of aggregate output, aggregate income and aggregate expenditure falls to a low level. All the factors of production become unemployed. Wages and prices also fall.

In such a situation, it can be seen that wages and prices can be taken as fixed since aggregate supply can always be increased without much difficulty and without incurring higher marginal costs. The real problem is to increase aggregate demand.

Thus, Keynesian Economics focuses on aggregate Demand. It sees depression arising out of the collapse of aggregate demand and thereby provides the solution

to depression as an increase in aggregate Demand. Higher price or higher wages are a problem because in depression, there is so much unemployment of labour and resources that more and more of labour and other resources can be brought into use without pushing up the prices of labour (wages) or goods.

The Keynesian Model can therefore be studied as a fixed price model in which aggregate economic activity (as measured, for example by GVA) is determined purely by the aggregate expenditure in the economy.

Components of Aggregate Expenditure

In a simplified economy (as illustrated by Figure 3), there is only one component of Aggregate Expenditure, namely Household Consumption.

In a more realistic model of the economy (Figure 7), there are three components of aggregate Expenditure –

Household Consumption: C
Government Expenditure: G
Investment: I

The relation of each of these to GVA is first studied. Then the total of these components is obtained and an equilibrium point is obtained, where aggregate expenditure equals aggregate supply (which is nothing but GVA)

Household Consumption Demand

Keynes called the relation between aggregate economic activity (in the Indian context, GVA) and total household consumption, the ***Consumption Function***.

According to Keynes, when GVA increases, aggregate consumption will rise but not by the extent of increase in GVA.

The ratio of change in aggregate consumption to GVA is called the Marginal Propensity to Consume (MPC) and its value lies in between 0 and 1. In the following diagram, the Marginal Propensity to Consume is 0.7 and fixed at all GVA level. Thus, whenever GVA increase by Rs. 100, aggregate consumption will increase by Rs. 70. When GVA increase by 1000, GVA increase by 700 and so on.

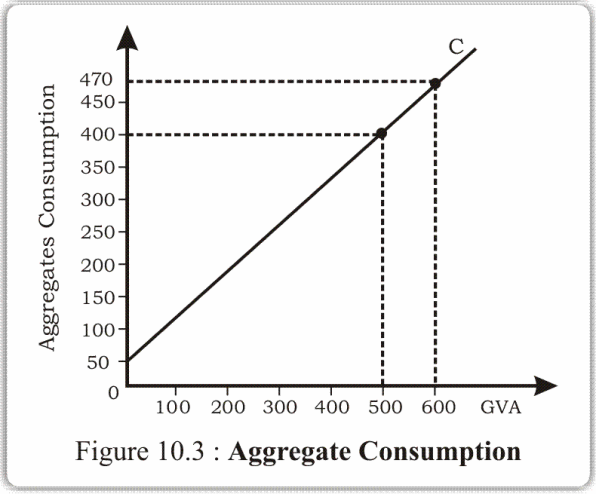


Figure 10.3 : **Aggregate Consumption**

In the above diagram,

When GVA is 500, aggregate consumption = 400
When GVA is 600, aggregate consumption = 470

Marginal Propensity to Consume (MPC) = $\frac{470 - 400}{600 - 500} = \frac{70}{100} = 0.7$

C in the above diagram is called the consumption function. It is drawn as a straight line for convenience (Keynes said that the marginal prosperity to consume, or the slope of C would be between 0 and 1. In the diagram the marginal propensity to consume is between 0 and 1, but, in addition, it is taken as constant at all levels of GVA. Thus the slope of C is constant i.e C is a straight line)

Investment Demand and Government Demand

Both these types of demand are assumed to be based on factors other than the level of economic activity. For example, investment demand may depend on the level of expectation of future profitability and the rate of interest they have to pay for borrowing funds. The high interest rate will make the capital expensive to borrow so investment will be discouraged and vice-versa.

In any case of these two types of demand are not dependent on GVA, they can be shown as horizontal straight time as in the diagrams below

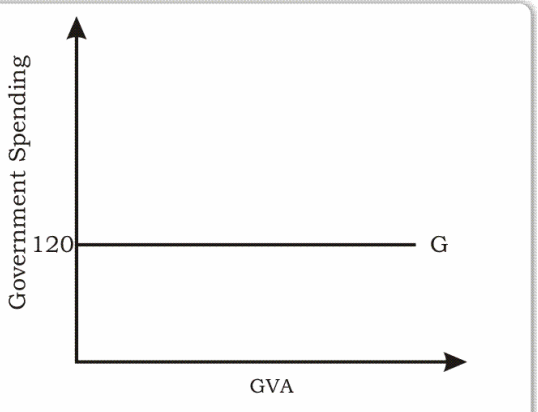


Figure 10.4 : **Government Demand**

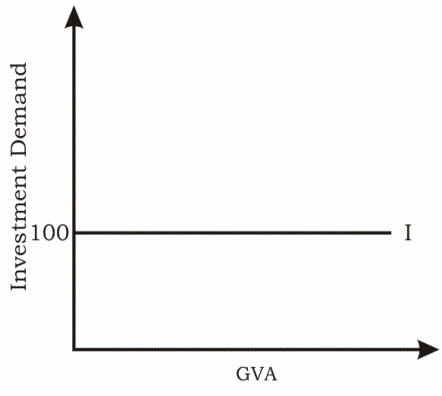


Figure 10.5 : **Investment Demand**

Aggregate Demand

Aggregate demand curve shows the quantity of goods and services demanded by household, firms and the government at each level of GVA as shown in the following diagram.

It can be seen that the aggregate demand line C+I+G cuts the vertical axis at 270 (=50+100+120) and has the same slope as 'c' i.e. 0.7 (mpc). The aggregate Demand line shows the level of aggregate Demand at each level of GVA. it may be noted that thus is the demand for final goods & services.

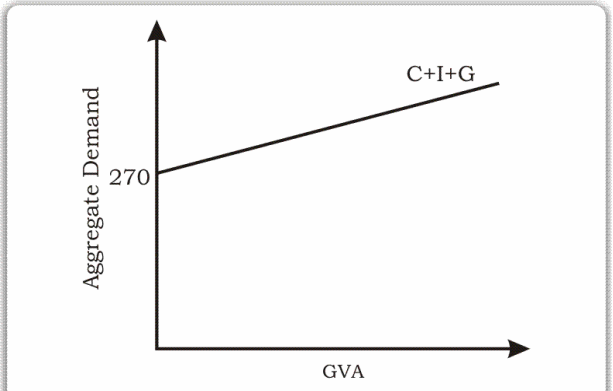


Figure 10.6 : **Aggregate Demand**

Aggregate Supply

The aggregate supply curve shows the quantity of goods and services produce by the firm and sold at each level of GVA. The supply of final goods and services is identical to the GVA (this is a basic identity of national income accounting). The aggregate supply curve is vertical in the long run and upward sloping in the short run. To understand fluctuation in business cycle we need to explain the difference in the supply curve in short run as well as in long run.

In the long run, the production of goods and services depends upon the availability of land, labour, capital and entrepreneur. The price level does not affect long run determinant of GVA, the long run supply curve is vertical.This also means in the long run factor of production is determined the supply of goods and services regardless of price level.

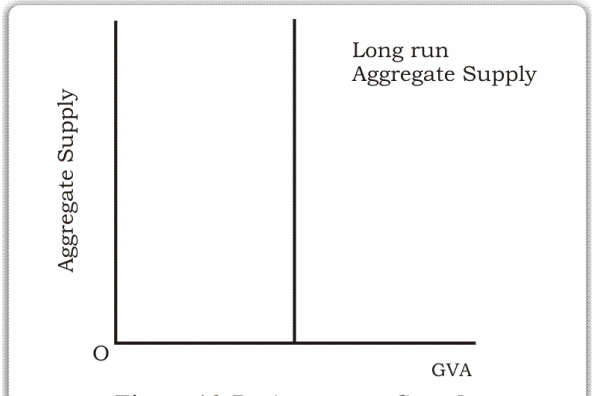


Figure 10.7 : **Aggregate Supply**

On the other hand, in the short run, the supply curve is upward sloping for within a period of time, increase in price tends to raise the supply of goods and services and decrease in price lower the supply of goods and services.

To compare aggregate supply with aggregate demand we need to measure both of them on the same axis Since aggregate demand is being measured on the vertical axis, so must aggregate Supply.

The simple way of measuring aggregate Supply or GVA on the vertical axis is

to use a 45^0 line. This is because any 45 line has the unique property of measuring off equal distances on both the horizontal and vertical axis. In the following diagram ive introduce a 45 line and indentify it as the aggregate supply line. The aggregate demand the C+I+G is the same as in the previous diagram.

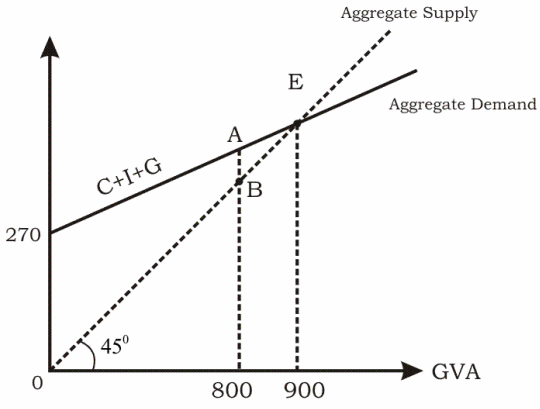


Figure 10.8 : **Aggregate Demand intersect the Aggregate Supply**

Where the aggregate demand line cuts the aggregate supply line i.e. 45 line is the point where there is equilibrium between demand and supply of goods and services. This is labelled as E. This point E corresponds to a level of GVA = 900. It can be seen that to the left of E say at GVA=800, aggregate demand is more than aggregate supply (shown by 45 line). This excess of aggregate Demand over aggregate supply would cause the shopkeeper to experience an unexpected fall in the stock of their goods (this is called fall in inventory). Seeing the stock of their goods falling below the desirable level, shopkeeper would place more orders with wholesalers who, in turn, would place more orders with factories. The factory response would in turn increase their output. This can be easily done since there is plenty of unemployed labour and other resources (it needs to be remembered here that Keynes was discussing the situation of the economy during depression when plenty of resources, including labour, are unemployed and they can be brought into production easily) As a result output increases and the economy recover back towards GVA = 900. Thus E is the equilibrium point and the equilibrium level of GVA = 900.

ACTIVITY

Explain the process of adjustment of the economy if GVA was 10,000.

Match the key terms with the meaning given below:-

Key terms

a. Wealth effect
b. International Trade effect

c. Interest rate effect
d. Aggregate supply curve
e. Aggregate demand curve
f. Business Cycles

Meaning

1. It shows the level of expenditure for real GDP at different price level
2. It shows the quantity of GDP produced at different price level
3. A change in the real value of wealth that cause spending to change when the price level changes
4. A change in interest rates that causes investment and therefore aggregate to change as the price level changes
5. A change in the aggregate expenditure resulting from a change in the domestic price level that changes the price of domestic goods in relation to international goods.
6. The recurrent pattern of rising GDP followed by falling GDP

Unit

XI

Foreign Exchange Markets and Balance of Payments

Topic	**:**	**Foreign Exchange Markets and Balance of Payments**
Rationale	**:**	An understanding of International Trade and Finance is necessary for understanding global economic linkages. Exchange rates are the price that links the currencies of the world.
Key Concept	**:**	Exchange rates, fixed and floating foreign exchange market, supply and demand for foreign currency
Methodology	:	Simulation Games

Activity 1: Exchange Rates: Money around the World[1]

We are aware that every country has its own currency. In order to trade between countries, an organized system for exchanging money among nations is required. If an Indian wants to buy goods produced in Japan, he or she has to exchange rupee for yen. An exchange rate is the price of one nation's currency in terms of another nation's currency. Exchange rates may be fixed (prevented from rising and falling with changes in the supply and demand for the currency) or flexible (free to float with changes in the supply and demand for the currency). Today the world's major currencies are flexible (floating), but countries sometimes intervene to try to manage exchange rates. A change in exchange rates may have a significant effect on the now of trade among countries and on a country's domestic economy'. Many factors affect exchange rates including changes in preferences for foreign goods, relative incomes, inflation, interest rates and speculation on future values of foreign exchange.

Exchange rate is one important topic which requires students to think in abstract as hardly Indian students travel to other countries during their schooling. Even those students who have traveled to other countries or who come from other countries having direct experience with exchange rates may not have thought about the issues underlying the purposes of exchange rates and their fluctuations. At the higher secondary level, this topic has been mostly introduced to students using simple classical theories of demand and supply. While taking this approach, it is argued that understanding the forces of supply and demand affect the value

1 This activity is a modified version of activity available in the website of IMF Center of the International Monetary Fund's instructional program for secondary school students' website.

of major currencies, which, in turn, affects prices of goods and services and trade among nations.

In order to learn the concepts mentioned above students are required to do three things: (i) they have to participate in auctions that demonstrate the role of foreign currency in buying goods from other countries and (ii) define exchange rates and understand that the forces of supply and demand determine flexible exchange rates.

Summary of the Activities to be done

Students participate in two auctions to demonstrate the determination of flexible exchange rates and the need for foreign currency. In the first auction, the students may buy goods produced only in their own countries. In the second auction, the students may buy foreign goods but must first exchange currency in order to do so. After participating in the auctions, they are required to discuss the results of the auctions and the average rate of exchange between the two forms of money used in the auctions.

Materials Required / Prepared

1. Chart papers of two different colour - for example red and blue, may be cut into 100 pieces of red cards and 200 pieces of blue cards to make currencies (playing card size) and small plastic bags. Prepare money packages before class by putting 100 red cards into one small plastic bag and 200 blue cards into another small plastic bag.

2. Twelve valuable items to be auctioned as follows: Four items should be the same and there should be two each of the other four items, which should be different. For example, you could have four school pencils, two library passes, two cards worth 10 extra-credit points each, two chocolate candy bars and two peanut candy bars (You may use pictures of goods or slips of paper with the name of a good on them instead).

3. A large amount of two different desirable items such as peanuts and small candies (or slips of paper naming two desirable items). One of these items is for Country A and the other is for Country B. You need about 50 to 100 of each item to be safe.

4. (Optional) Small prizes for the students serving as country leaders.

Procedure

Step l: Write the following questions about exchange rates on the blackboard

1. WHAT IS AN EXCHANGE RATE?

2. WHY DO PEOPLE IN ONE COUNTRY WANT CURRENCY FROM ANOTHER COUNTRY?

3. WHAT IS A FLEXIBLE (FLOATING) EXCHANGE RATE?
4. WHAT IS A FIXED EXCHANGE RATE?
5. WHY DO FLEXIBLE EXCHANGE RATES CHANGE?

Step 2: Organise First Auction

1. Announce that the class will participate in an auction activity to better understand how money and prices are related through markets.

    a. Form two groups Group A and Group B. Each group can have about 15 students. If the class size is large, select 30 students randomly' to do this activity (15 in each group) and request other students to sit separately on the back to observe what is happening between the two teams Group A and Group B. Each group can be designated as citizens of one country.
    b. Tell the groups that they are residents of two neighboring countries that do not permit citizens to trade with each other. Group A (Country A), uses red cards for money. The other group (Country B) uses blue cards for money.
    c. Quickly distribute the 100 pieces of red cards and the 200 blue cards to the students in their respective countries while continuing to discuss the auctions.

Note: If you have 30 students, the 15 students in Country A will have average about six to seven pieces of red cards each, and the 15 students in Country B will average about 13 to 14 blue cards each. Do not distribute the money equally within each country; for example, some students in Country B could have five or six blue cards while others have 20.

2. Tell the students the red cards and blue cards represent income that residents of Country A and Country B earned during the past year. They may use the income to purchase goods and services produced in their countries.

    a. Show the goods that are produced by Country A, for example, a black colour ball point pen, a chocolate candy bar and a large supply of peanuts. List the goods on the board.
    b. .Show the goods produced by Country B, for example, a card good for 10 extra credit points, a black colour ball point pen (identical to the one in Country A), a peanut candy bar and a large supply of small candies. List the goods on the board. Teachers need to choose goods depending upon the local context.
    c. Point out that both countries produce one good that is the same (black colour ball point pen) but each also produces goods that are unique. Country A produces chocolate candy bar and peanuts whereas country B produces peanut candy bars and small candies. Because trade is not allowed, people in Country B cannot purchase the goods that are produced in Country A and vice versa.

3. Appoint leaders for each country and have them stand in front of their countries with the items representing goods their country produced in the past year. Explain that the job of the leaders is to auction off to the highest bidders the three valuable goods for red cards in Country A and blue cards in Country B. Leaders will not take part in the auctions themselves. Students who do not get one of the three more valuable items will exchange their income for the small candy or peanuts so everyone will end up with buying something. Students may not save their blue card or red card income.

Note: Choose leaders carefully! They need to conduct the auctions quickly, help distribute candy or peanuts to the students who didn't get the three auctioned items, and collect all the blue cards or red cards after the first auction. Tell them this should be done in about 10 minutes or less.

Ask if there are any questions. The students may comment that the income distribution was unfair. You may respond yes, and this is often true in real life, too. They may say they want to buy something from the other country. Point out that this is a problem with trade barriers. The leaders may complain that they can't take part in the auctions, so they will automatically end up with one of the less desirable items, or tell the leaders that they will receive a small prize or extra-credit points for their work later. Assign to two students who are not participating in this activity to take down notes on what is happening in auctions and questions asked by participating students and teacher's responses.

4. Have the leaders conduct the auctions for their countries at the same time. You may want to have one stand in the front of the room and the other in the back of the room to eliminate confusion about who is bidding for what. (The auctions may be done sequentially, but this can be very time-consuming.)

5. After the auctions, the leaders should pass out the candy or peanuts to anyone with money in their country. You may want to ask other non-participating students to help so this goes quickly. Make sure all the blue card money and red card money is collected and returned to you.

6. When both groups have finished:

    a. Ask what prices the students paid (in blue cards and red cards) for the three auctioned items. Record the prices on the board.
    b. Point out that one of the items (black colour ball point pens) was the same in both countries.

Compare the prices students paid for it in blue cards and red cards. Probably the blue card price was higher because there were more blue cards in circulation.

    c. Probably blue card prices were higher in general than red card prices. Ask why this was so. There were more blue cards than red cards in circulation.
    d. Ask whether people in Country B were richer than people in Country A because there were more blue cards than red cards. The correct answer is no. The amount of money in circulation in a country does not make

the country wealthier; what is important is how much the incomes will buy in different countries. This activity does not show that either country is wealthier.

However, some individuals within the countries were wealthier because they had higher incomes than others.

Step 3: conduct the second auction

7. Tell the two groups that a year has passed and many things have not changed. The leaders are still in power (assuming they did a good job – or you could replace them). The goods produced in each country are the same. Display goods identical to those in the first auction. Country A still uses red card money and Country B still uses blue card money. Quickly distribute blue cards and red cards as before. (Average amounts will be the same in each country because you still have 100 pieces of red cards and 200 blue cards for the same number of students. However, different amounts if you distribute it randomly).

8. Announce that one important thing has changed: The governments of the two countries now permit people in one country to buy goods in the other country.

However, anyone who wants to buy something in Country A needs red cards, and anyone who wants to buy something in Country B needs blue cards. Therefore, before the auctions you will give them time to exchange blue cards and red cards if they wish to do so. There is no fixed exchange rate.

Students with blue cards will try to trade for as much red cards as possible, and students with red cards will try to trade for as many blue cards as possible. No one has to exchange currency if they don't want to.

9. Create a table with three columns on the blackboard. Write Blue Cards (BC) at the top of one column on the board and Red Cards (RC) at the top of another column. Tell the students that if they decide to exchange currency, they must report the completed transaction amount to you. For example, if they trade seven blue cards for three red cards, you would write 7 in the BC column and 3 in the RC column. Ask if there are any questions. Give the students five to 10minutes to trade currency.

10. At the end of the currency-trading period, tell the leaders to conduct the auctions (quickly) as before. This time however, buyers may go to whichever country they choose. (Usually most students have a majority of money from one country or the other. However, a few students may ask what to do if they have currency from both countries and want to bid on items from both places. Instruct them to do what they think is best. Tell them that competition often occurs between buyers, and they can't always get what they want when they want it. Alternatively, you could conduct the auctions one at a time, but this can be time-consuming.)

11. When the auctions are finished, let the students exchange their remaining blue cards or red cards for the small candy or peanuts as appropriate.

Step 4: Discussion with students in the class After Auctions

12. Record on the board the prices of the goods in each country from the second auction, and discuss the changes in prices between the two rounds. The sales prices in blue cards were probably still higher than in red cards since more blue cards were in circulation in both auctions. However, relative prices may have changed: Popular goods may have had higher prices in the second auction since there were more potential buyers.

13. Go back to all the questions you wrote on the blackboard before the beginning of auctions. Discuss them in the following manner.

What is an exchange rate?

A. Define exchange rates as the price or value of one country's currency in terms of another country's currency.

B. Ask the students if they have had experiences with exchange rates. Answers will vary, but they may mention exchanging rupees for foreign currency when traveling in another country.

C. Determine the exchange rate in the auction activity. Go to the board where you recorded the blue cards and red cards exchanged in the activity and total the amounts in each column (e.g., 62 red cards and 119 blue cards). Divide these amounts to get the average exchange rate used in the game (for example, 62/119 =0.52, and 119/62 = 1.9). Rounding, the exchange rate was one-half red card for one blue card or two blue cards for one red card. Assuming the goods available in both countries were desirable to the students, the exchange rates often are close to 2: 1 in this activity because there were twice as many blue cards in circulation as red cards.

Why do people in one country want currency from another country?

Ask the students why they wanted the other country's currency in the activity. Some citizens of Country A wanted blue cards, and some citizens of Country B wanted red cards to buy goods that were not available in their countries. This reason is true in real life also. Other reasons for wanting currency from another country include travelling to another country or investing in the assets of another country (for example, wanting to buy stock in an American company or real estate in Mauritius). Some people want foreign currency because they think it may be more stable or safe than their country's currency. Others want it for speculative reasons: They hope to make a profit if the value of currency changes.
What is a flexible (floating) exchange rate?

Explain that when exchange rates are flexible, values are determined by the supply and demand for various currencies. In the activity, exchange rates were flexible

because the students could exchange money at whatever rate they wanted. Today the major currencies in the world are flexible to a large extent. (However, governments sometimes try to buy and sell large amounts of a nation's currency to try to influence exchange rates. As we have studied in the textbook, such system is called a *managed float.)*

What is fixed exchange rate?

Explain that when exchange rates are fixed, the government sets the rate at which one country's money may be exchanged for another country's money. Inthe activity, if you had announced that the students could exchange two of their blue cards for one red card and no other amount this would have been an example of a fixed exchange rate.

Why do flexible exchange rates change?

Explain that flexible exchange rates change frequently over time: over years, months, weeks and even during a given day. The reasons can be related to supply and demand (part of this answer is relatively advanced. For average classes, you may wish to briefly discuss supply and demand and focus on one of the following reasons. Economists often cite five factors for changes in exchange rates: (i) Changes in preferences for foreign goods; (ii) Changes in prices in different countries; (iii) Changes in interest rates in different countries; (iv) Changes in incomes in different countries; (v) Speculation.

Step 5: Closure of the Simulation Game

Review the following as major points of the auctions with the students.

- Different countries use different currencies.
- To buy something in or from another country, you generally need currency from the other country. One of the reasons currencies are exchanged among countries is because people want to buy something that isn't available in their country.
- Currencies are traded in foreign-exchange markets. In the auction activity, the exchange rates were determined by supply and demand or by the students who wanted currency from the other country. This simulated a flexible exchange-rate system. Exchange rates for major currencies in the world today are largely flexible.
- If the teacher had set the exchange rate at, for example, two blue cards for one red card, this would have simulated a fixed exchange-rate system.
- Changes in exchange rates cause prices of imported goods to change, even when the prices of the goods haven't changed in the country where the goods were produced.

Activity 2: Converting Indian rupee into Foreign Currency using work-sheets

Give the following details on the blackboard.

Indian rupee = Rs.1.00 British Pound = 0.014
Indian rupee = Rs. 1.00 Chinese Yuan = 0.144

Ask students to answer the following questions, using the above information.

1. How many British pounds you could get for Rs. 1000?
2. How many Yuan could you get for Rs. 2500?
3. I f one pound equals Rs. 73, how much would 1700 pounds cost?
4. If one Japanese Yen equals Rs. 1.846, then what would the Japanese yen cost?

Follow up activity

Students may be formed 5-6 groups and for each group teacher can provide the details of other foreign currencies and develop a few simple exercises as in the above example. The details of currency rates are available in the following websites: www.rbi.org.inand www.x-rates.com.

Activity 3: Working With Foreign Exchange Rates using worksheets

In India, Rupee is used as money. When people from other countries want to buy goods and services from Indian companies, they must pay in Indian rupees. When Indians want to buy foreign products, they must pay in foreign money. People and businesses get the foreign money they need by buying it in foreign-exchange markets. *Foreign-exchange markets* are like other markets in many ways, except that instead of buying and selling goods and services, people buy and sell money from different countries. In terms of supply and demand, Indians who want to buy goods from other countries create a demand for foreign currency. People in other countries who want to buy goods from the India supply their currency in exchange for rupees.

Worksheet: The following table shows exchange rates of Indian rupee vis-à-vis American dollar, pound sterling and the Japanese yen, during 1998 to 2009.

Table 11.1

Year	Rupees per unit of foreign currency		
	American Dollar	Pound Sterling	Japanese Yen*
1998	41.3	68.4	31.7
2000	44.9	67.9	41.7
2002	48.6	73.0	38.9
2005	44.1	80.3	40.1

2009	48.4	75.7	51.8
2010	45.7	70.1	52.2
2011	46.7	74.8	58.6

(Source: Handbook of Statistics on Indian Economy, 2011-12, Table 146, published by Reserve Bank of India. This report is also available in RBI website: www.rbi.org.in)

Note: (*) the exchange rate for Japanese Yen is in rupee per 100 Yen.

Procedure:

Step 1: Divide the students into small groups to answer the following questions. To help the students get started, you may want to go over how to convert rupees to another currency using data from the table from 1998 and 2011.

1. It is 1998. Sowmya is watching her favourite video, wearing her favouritesweatshirt and eating a chocolate. She paid, Rs. 15.98 for the video, Rs. 30 for thesweatshirt andRs. 1.99 for the chocolate.

   A. What were Sowmya's total expenditures for the three goods?

   B. How may yen would a Japanese tourist have exchanged to purchase the same products?

   C. How many American Dollars would an American tourist have exchanged?

   D. How many Pounds would a British tourist have exchanged?

2. It is 2002, and prices of the three goods have not changed in the United States.

   A. What are the new prices in Japanese Yen?

   B. "What are the new prices in Canadian Dollars?

   C. What are the new prices in British Pounds?

3. Describe what happened to the amounts the tourists would spend in 2002 compared with the amounts they spent in 1998 in each of the foreign .currencies

4. According to the figures in the table, what happened to the value of the U.S. dollar compared with the Japanese yen between 1998and 2000, 2000 and 2002 and, 2008and 2011?

Step 2: Discuss the answers to the questions.

Activity 4: Learning to estimate various components of Balance of Payments[2]

In the past, among many topics in macroeconomics, National Income Accounting has been used to estimate various components of national income. Even though

2 All the exercises are adapted from the website of Pearson Education Publishing company.

the focus of the present textbook is mainly on understanding the theoretical foundations of the subject, there is scope to use arithmetic skills to understand the linkages between various concepts associated with the topic. Balance of payments is one topic example in which numerical examples can be used to make students to understand its components. In this activity, students may be given the following questions in the form of worksheets. They can work as groups. You can ask the answers from each group.

1. The following are the various elements ofIndia's balance of payments account:

   A. Imports of goods (-)

   B. Exports of goods (+)

   C. Imports of services (-)

   D. Exports of services (+)

   E. Other income and current outflows (-)

   F. Other income and current inflows (+)

   G. Transfers of capital from India (-)

   H. Transfers of capital to India (+)

   I. Direct and portfolio India investment overseas (-)

   J. Direct and portfolio investment in India (+)

   K. Other (mainly short-term) financial outflows (-)

   L. Other (mainly short-term) financial inflows (+)

   M. Adding to reserves (-)

   N. Drawing on reserves (+)

Into which of the above categories would you put the following?

S. No.	Item	Category (put A to N)
1.	Video recorders imported from Japan	
2.	Insurance cover purchased at Lloyds in New Delhi by overseas residents	
3.	India gives aid to finance capital project in Nepal	
4.	Japanese car company purchases factory in India	
5.	Indians taking holidays in Singapore	

6.	Interest earned by Indian residents on assets abroad	
7.	Running down the stock of foreign exchange in the Reserve Bank of India	
8.	New deposits made in banks in India by overseas residents	
9.	Kingfisher beer sold in France	
10.	Indian insurance company sets up branch in Sri Lanka	

2. The following shows how India's balance of payments account is setout.

CREDITS	**DEBITS**
(1) Exports of goods	(2) Imports of goods
1 - 2 = *Balance on trade in goods*	
(3) Exports of services	(4) Imports of services
3 - 4 = *Balance on trade in services*	
(1 - 2) + (3 - 4) = *Balance on trade in goods and services*	
(5) Incomes and current transfers	(6) Incomes and current transfers going

CREDITS	**DEBITS**
from abroad	abroad
5 - 6 = *Other income flows*	
(1 - 2) + (3 - 4) + (5 - 6) = ***Current account balance***	
(7) Transfers of capital to India from abroad	(8) Transfers of capital abroad from India
7 - 8 ***Capital account balance***	
(9) Net investment in the India from abroad	(10) India net investment abroad
(11) Short-term financial inflows to India	(12) Short-term financial outflows from India
either (13) Drawing on reserves	or (14) Adding to reserves
(9 - *10)* + (11 - 12) + *(either* 13 *or* 14) = ***Financial account balance***	
Current account balance + Capital account balance + Financial account balance = Overall balance of payments	
Overall balance of payments plus net errors and omissions = 0	

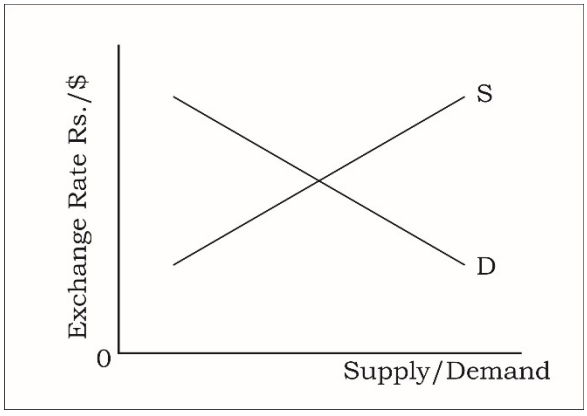
3. The following are the items in India's balance of payments (Rs. incrores)

Exports of services	67.2
Exports of goods	187.1
India net investment abroad (direct and portfolio)	250.6
Reserves (adding to = -ve)	-3.9
Short-term financial inflows to India	281.8
Short-term financial outflows from India	270.9
Capital transfers to India from abroad	2.8
Capital transfers abroad from the India	0.8
Net incomes and current transfers from/to abroad	+ 1.7
Imports of goods	215.9
imports of services	56.3
Net investment in the India from abroad (direct and portfolio)	260.8

Using the table above, work out the figures for the India for the following:

SI.	Item	In Rs.
	The balance on trade in goods and services	
	The current account balance	
	The capital account balance	
	The financial account balance	
	Net errors and omissions	

Show why D slopes downward and S slopes upward.



4. Assume that there is a free-floating exchange rate. Will the following cause the exchange rate to appreciate or depreciate? In each case you should consider

whether there is a shift in the demand or supply curves of rupee (or both) and which way the curve(s) shift(s).

a. Imports increase	Demand curve **shift left / right / no shift**
	Supply curve **shift left / right / no shift**
	Exchange rate **appreciates / depreciates**
b. Interest rates in India rise relative to those abroad	Demand curve shift **left / right / no shift**
	Supply curve shift **left / right / no shift**
	Exchange rate **appreciates / depreciates**
c. India experiences a lower rate of inflation than other countries	Demand curve shift **left / right / no shift**
	Supply curve shift **left / right / no shift**
	Exchange rate **appreciates / depreciates**
d. Speculators believe that the rate of exchange will fall	Demand curve shift **left / right / no shift**
	Supply curve shift **left / right / no shift**
	Exchange rate **appreciates / depreciates**

5. Assume that the government wishes to pursue a deflationary policy.

a. What will happen to the exchange rate if it uses deflationary monetary policy? **Appreciate / Depreciate**
b. What effect will this exchange rate movement have on aggregate demand? **Increase it / Decrease it**
c. What will happen to the exchange rate if it uses deflationary fiscal policy? **Appreciate / Depreciate**
d. What effect will this exchange rate movement have on aggregate demand? **Increase it / Decrease it**

6. The use of interest rates as the main instrument for stabilising the exchange rate can often lead to conflicts with internal policy objectives. In which of the following cases is there a clear conflict between internal and external policy objectives, if interest rate changes are the only policy instrument available to the government or central bank for achieving both sets of objectives?

a. The government (or Reserve Bank of India) wants to prevent an appreciation of the exchange rate and to reduce demand-deficient unemployment. **Yes/No**
b. The government (or Reserve Bank of India) wants to help domestic exporters and to reduce the rate of inflation. **Yes/No**
c. The government (or Reserve Bank of India) wants to reduce the price of imports and to curb the rate of growth in the money supply. **Yes/No**
d. The government (or Reserve Bank of India) wants to prevent a depreciation of the exchange rate and to stimulate investment. **Yes/No**
a. The government (or Reserve Bank of India) wants to halt a rise in the exchange rate and to reduce the rate of growth of the money supply. **Yes/No**

b. The government (or Reserve Bank of India) wants to reverse a recent fall in the exchange rate and to reduce its unpopularity with home owners. **Yes/No**

7. Which of the following are likely to contribute to the volatility of exchange rates between the major currencies?

   a. A growth in the size of short-term capital flows relative to current account flows. **Yes/No**
   b. The abolition of exchange controls. **Yes/No**
   c. A harmonisation of international macroeconomic policies. **Yes/No**
   d. The adoption of money supply targets by individual countries. **Yes/No**
   e. The adoption of exchange rate targets by individual countries. **Yes/No**
   f. The adoption of inflation targets by individual countries. **Yes/No**
   g. A growing belief that speculation against exchange rate movements is likely to be stabilising. **Yes/No**
   h. A growing belief that speculation against exchange rate movements is likely to be destabilising. **Yes/No**
   i. A growing ease of international transfers of funds. **Yes/No**
   j. Countries' business cycles become more synchronised with each other. **Yes/No**