

CHAPTER 10

FINANCIAL MARKETS

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- explain the meaning of Financial Market;
- explain the meaning of Money Market and describe its Instruments;
- explain the nature and types of Capital Market;
- distinguish between Money Market and Capital Market;
- explain the meaning and functions of Stock Exchanges;
- explain the functioning of NSEI and OTCEI; and
- describe the role of SEBI in investor protection.

IDEA SEEKS TO CAPITALISE ON MARKET MOMENTUM

With the explosive growth of their subscriber base, telecom companies are all looking at capital markets to raise funds to fuel their expansion plan. Idea Cellular, the fifth largest operator in the country and the flagship telecom venture of AV Birla Group, has decided to enter the capital market to raise between Rs. 1,700 and Rs. 2,000 crore.

The company has appointed J.M. Morgan Stanley, Merrill Lynch among other as book-runners for the proposed Initial Public Offer (IPO), which is expected to be ready by January end.

Since, under SEBI norms, the minimum float size is 10 per cent, the company will divest between 10 and 12 per cent, "The last private placement made by the promoters is at a market capitalisation of Rs. 15,000 crore. The proposed float is expected to be at 10 to 20 per cent premium of the private placement price," AV Birla Group recently divested 35 per cent stake in the company to a clutch of private equity firms. However, this is a fresh issue of shares, where the proceeds will be utilised by Ideal Cellular for capital expenditure. After the proposed issues, the promoters stake will come down to around 58 per cent.

Source: www.hindustantimes.com

INTRODUCTION

You all know that a business needs finance from the time an entrepreneur makes the decision to start it. It needs finance both for working capital requirements such as payments for raw materials and salaries to its employees, and fixed capital expenditure such as the purchase of machinery or building or to expand its production capacity. The above example gives a fair picture of how companies need to raise funds from the capital markets. Idea Cellular decided to enter the Indian capital market for its needs of expansion. In this chapter you will study concepts like private placement, Initial public Offer (IPO) and capital markets which you come across in the example of Idea Cellular. Business can raise these funds from various sources and in different ways through financial markets. This chapter provides a brief description of the mechanism through which finances are mobilised by a business organisation for both short term and long term requirements. It also explains the institutional structure and the regulatory measures for different financial markets.

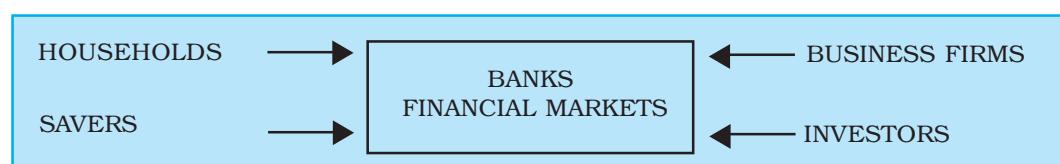
CONCEPT OF FINANCIAL MARKET

A business is a part of an economic system that consists of two main

sectors – households which save funds and business firms which invest these funds. A financial market helps to link the savers and the investors by mobilizing funds between them. In doing so it performs what is known as an allocative function. It allocates or directs funds available for investment into their most productive investment opportunity. When the allocative function is performed well, two consequences follow:

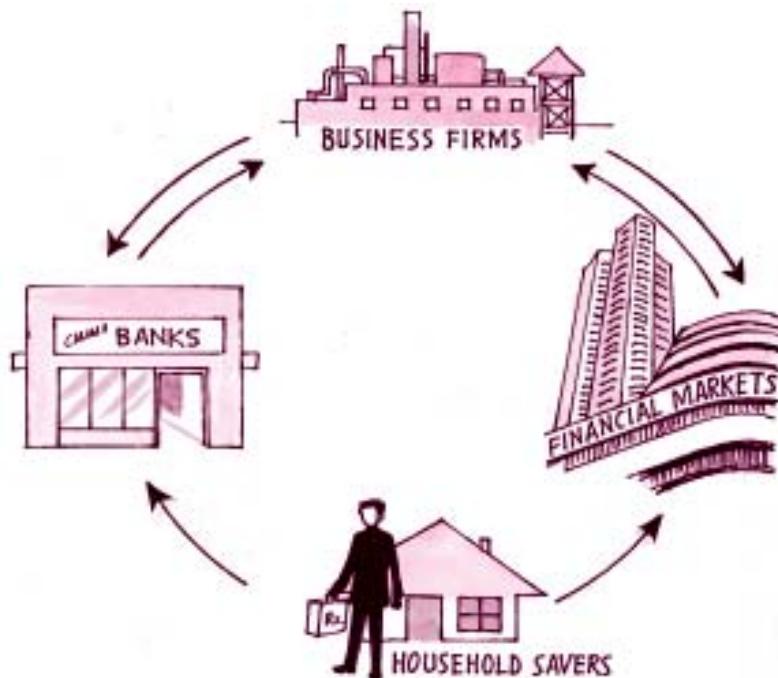
- The rate of return offered to households would be higher
- Scarce resources are allocated to those firms which have the highest productivity for the economy.

There are two major alternative mechanisms through which allocation of funds can be done: via banks or via financial markets. Households can deposit their surplus funds with banks, who in turn could lend these funds to business firms. Alternately, households can buy the shares and debentures offered by a business using financial markets. The process by which allocation of funds is done is called financial intermediation. Banks and financial markets are competing intermediaries in the financial system, and give households a choice of where they want to place their savings.



A financial market is a market for the creation and exchange of financial assets. Financial markets exist

1. Mobilisation of Savings and Channeling them into the most Productive Uses: A financial market



Financial System

wherever a financial transaction occurs. Financial transactions could be in the form of creation of financial assets such as the initial issue of shares and debentures by a firm or the purchase and sale of existing financial assets like equity shares, debentures and bonds.

FUNCTIONS OF FINANCIAL MARKET

Financial markets play an important role in the allocation of scarce resources in an economy by performing the following four important functions.

facilitates the transfer of savings from savers to investors. It gives savers the choice of different investments and thus helps to channelise surplus funds into the most productive use.

2. Facilitate Price Discovery: You all know that the forces of demand and supply help to establish a price for a commodity or service in the market. In the financial market, the households are suppliers of funds and business firms represent the demand. The interaction between them helps to establish a price for the financial asset which is being traded in that particular market.

3. Provide Liquidity to Financial Assets:

Financial Assets: Financial markets facilitate easy purchase and sale of financial assets. In doing so they provide liquidity to financial assets, so that they can be easily converted into cash whenever required. Holders of assets can readily sell their financial assets through the mechanism of the financial market.

4. Reduce the Cost of Transactions:

Financial markets provide valuable information about securities being traded in the market. It helps to save time, effort and money that both buyers and sellers of a financial asset would have to otherwise spend to try and find each other. The financial market is thus, a common platform where buyers and sellers can meet for fulfillment of their individual needs.

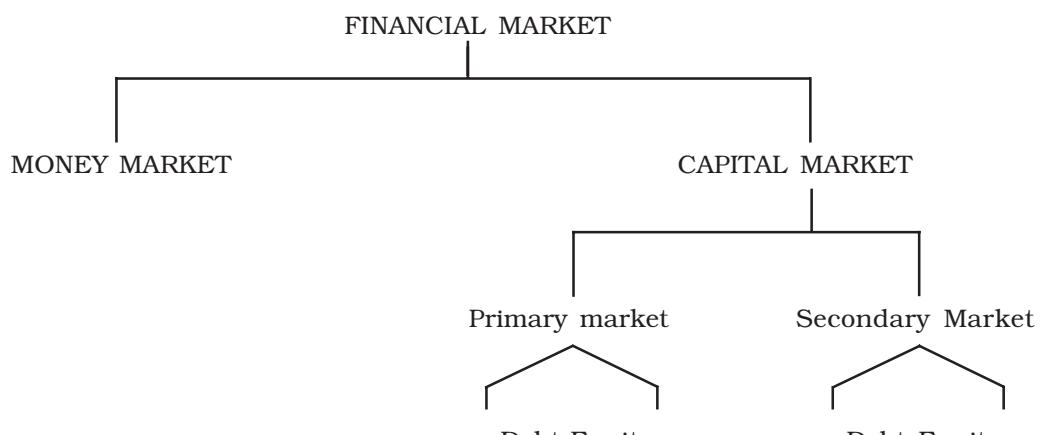
Financial markets are classified on the basis of the maturity of financial instruments traded in them. Instruments with a maturity of less

than one year are traded in the money market. Instruments with longer maturity are traded in the capital market.

MONEY MARKET

The money market is a market for short term funds which deals in monetary assets whose period of maturity is upto one year. These assets are close substitutes for money. It is a market where low risk, unsecured and short term debt instruments that are highly liquid are issued and actively traded everyday. It has no physical location, but is an activity conducted over the telephone and through the internet. It enables the raising of short-term funds for meeting the temporary shortages of cash and obligations and the temporary deployment of excess funds for earning returns. The major participants in the market are the Reserve Bank of India

Classification of Financial Markets



(RBI), Commercial Banks, Non-Banking Finance Companies, State Governments, Large Corporate Houses and Mutual Funds.

MONEY MARKET INSTRUMENTS

1. Treasury Bill: A Treasury bill is basically an instrument of short-term borrowing by the Government of India maturing in less than one year. They are also known as Zero Coupon Bonds issued by the Reserve Bank of India on behalf of the Central Government to meet its short-term requirement of funds. Treasury bills are issued in the form of a promissory note. They are highly liquid and have assured yield and negligible risk of default. They are issued at a price which is lower than their face value and repaid at par. The difference between the price at which the treasury bills are issued and their redemption value is the interest receivable on them and is called discount. Treasury bills are available for a minimum amount of Rs 25,000 and in multiples thereof.

Example: Suppose an investor purchases a 91 days Treasury bill with a face value of Rs. 1,00,000 for Rs. 96,000. By holding the bill until the maturity date, the investor receives Rs. 1,00,000. The difference of Rs. 4,000 between the proceeds received at maturity and the amount paid to purchase the bill represents the interest received by him.

2. Commercial Paper: Commercial paper is a short-term unsecured promissory note, negotiable and

transferable by endorsement and delivery with a fixed maturity period. It is issued by large and creditworthy companies to raise short-term funds at lower rates of interest than market rates. It usually has a maturity period of 15 days to one year. The issuance of commercial paper is an alternative to bank borrowing for large companies that are generally considered to be financially strong. It is sold at a discount and redeemed at par. The original purpose of commercial paper was to provide short-terms funds for seasonal and working capital needs. For example companies use this instrument for purposes such as bridge financing.

Example: Suppose a company needs long-term finance to buy some machinery. In order to raise the long term funds in the capital market the company will have to incur floatation costs (costs associated with floating of an issue are brokerage, commission, printing of applications and advertising etc.). Funds raised through commercial paper are used to meet the floatation costs. This is known as Bridge Financing.

3. Call Money: Call money is short term finance repayable on demand, with a maturity period of one day to fifteen days, used for inter-bank transactions. Commercial banks have to maintain a minimum cash balance known as cash reserve ratio. The Reserve Bank of India changes the cash reserve ratio from time to time which in turn affects the amount of funds available to be given as loans by commercial banks. Call money is a method by which banks borrow from each other to be able to maintain the

cash reserve ratio. The interest rate paid on call money loans is known as the call rate. It is a highly volatile rate that varies from day-to-day and sometimes even from hour-to-hour. There is an inverse relationship between call rates and other short-term money market instruments such as certificates of deposit and commercial paper. A rise in call money rates makes other sources of finance such as commercial paper and certificates of deposit cheaper in comparison for banks raise funds from these sources.

4. Certificate of Deposit: Certificates of deposit (CD) are unsecured, negotiable, short-term instruments in bearer form, issued by commercial banks and development financial institutions. They can be issued to individuals, corporations and companies during periods of tight liquidity when the deposit growth of banks is slow but the demand for

credit is high. They help to mobilise a large amount of money for short periods.

5. Commercial Bill: A commercial bill is a bill of exchange used to finance the working capital requirements of business firms. It is a short-term, negotiable, self-liquidating instrument which is used to finance the credit sales of firms. When goods are sold on credit, the buyer becomes liable to make payment on a specific date in future. The seller could wait till the specified date or make use of a bill of exchange. The seller (drawer) of the goods draws the bill and the buyer (drawee) accepts it. On being accepted, the bill becomes a marketable instrument and is called a trade bill. These bills can be discounted with a bank if the seller needs funds before the bill matures. When a trade bill is accepted by a commercial bank it is known as a commercial bill.

Sterlite Industries

Sterlite Industries, part of the London listed Vedanta Resources Group, is scheduled to be listed on the New York Stock Exchange through an initial public offering (IPO) of about \$2 billion. The proceeds will be used to fund its \$1.9 billion, Greenfield power project in Orissa and to expand its aluminium and copper facilities.

The IPO is a part of an enabling resolution passed by Sterlite to raise upto 12,500 crores through American Depository Shares (ADS). Consequently, the company has increased its authorised capital from Rs 150 crore to Rs 185 crore by creating an additional 17.5 crore equity shares of Rs 2 each. The shares of Sterlite, which will be among the first metal firms from India to list on NYSE, outpaced Sensex and rose by 1.4% to close at Rs 545.2 on BSE on the day of the announcement.

Source: *The Economic Times*

CAPITAL MARKET

The term capital market refers to facilities and institutional arrangements through which long-term funds, both debt and equity are raised and invested. It consists of a series of channels through which savings of the community are made available for industrial and commercial enterprises and for the public in general. It directs these savings into their most productive use leading to growth and development of the economy. The capital market consists of development banks, commercial banks and stock exchanges.

An ideal capital market is one where finance is available at reasonable cost. The process of economic development is facilitated by the existence of a well functioning capital market. In fact, development of the financial system is seen as a necessary condition for economic growth. It is essential that financial institutions are sufficiently developed and that market operations are free, fair, competitive and transparent. The capital market should also be efficient in respect of the information that it delivers, minimise transaction costs and allocate capital most productively.

The Capital Market can be divided into two parts: a. Primary Market
b. Secondary Market

PRIMARY MARKET

The primary market is also known as the new issues market. It deals with

new securities being issued for the first time. The essential function of a primary market is to facilitate the transfer of investible funds from savers to entrepreneurs seeking to establish new enterprises or to expand existing ones through the issue of securities for the first time. The investors in this market are banks, financial institutions, insurance companies, mutual funds and individuals.

A company can raise capital through the primary market in the form of equity shares, preference shares, debentures, loans and deposits. Funds raised may be for setting up new projects, expansion, diversification, modernisation of existing projects, mergers and takeovers etc.

Methods of Floatation

There are various methods of floating new issues in the primary market :

1. Offer through Prospectus: Offer through prospectus is the most popular method of raising funds by public companies in the primary market. This involves inviting subscription from the public through issue of prospectus. A prospectus makes a direct appeal to investors to raise capital, through an advertisement in newspapers and magazines. The issues may be underwritten and also are required to be listed on at least one stock exchange. The contents of the prospectus have to be in accordance with the provisions of the Companies Act and SEBI disclosure and investor protection guidelines.

2. Offer for Sale: Under this method securities are not issued directly to the public but are offered for sale through intermediaries like issuing houses or stock brokers. In this case, a company sells securities enbloc at an agreed price to brokers who, in turn, resell them to the investing public.

3. Private Placement: Private placement is the allotment of securities by a company to institutional investors and some selected individuals. It helps to raise capital more quickly than a public issue. Access to the primary market can be expensive on account of various mandatory and non-mandatory expenses. Some companies, therefore, cannot afford a public issue and choose to use private placement.

4. Rights Issue: This is a privilege given to existing shareholders to subscribe to a new issue of shares according to the terms and conditions of the company. The shareholders are offered the 'right' to buy new shares in proportion to the number of shares they already possess.

5. e-IPOs: A company proposing to issue capital to the public through the on-line system of the stock exchange has to enter into an agreement with the stock exchange. This is called an Initial Public Offer (IPO). SEBI registered brokers have to be appointed for the purpose of accepting applications and placing orders with the company. The issuer company should also appoint a registrar to the issue having electronic connectivity with the exchange. The issuer company can apply for listing of its securities on any exchange other than the exchange through which it has

offered its securities. The lead manager coordinates all the activities amongst intermediaries connected with the issue.

SECONDARY MARKET

The secondary market is also known as the stock market or stock exchange. It is a market for the purchase and sale of existing securities. It helps existing investors to disinvest and fresh investors to enter the market. It also provides liquidity and marketability to existing securities. It also contributes to economic growth by channelising funds towards the most productive investments through the process of disinvestment and reinvestment. Securities are traded, cleared and settled within the regulatory framework prescribed by SEBI. Advances in information technology have made trading through stock exchanges accessible from anywhere in the country through trading terminals. Along with the growth of the primary market in the country, the secondary market has also grown significantly during the last ten years.

Distinction between Capital Market and Money Market

Both the money market and the capital market are the centres which arrange for the transfer of funds from the suppliers of funds to the users of funds. They differ, however, in regard to the maturity periods of the financial assets created and dealt with for affecting the transfer of funds. As explained earlier, money market arranges for short term

and capital market provides for medium to long-term funds. The time length in respect of short-term funds is less than and upto one year.

STOCK EXCHANGE

A stock exchange is an institution which provides a platform for buying and selling of existing securities. As a market, the stock exchange facilitates the exchange of a security (share, debenture etc.) into money and vice versa. Stock exchanges help companies raise finance, provide liquidity and safety of investment to the investors and enhance the credit worthiness of individual companies.

Meaning of Stock Exchange

According to Securities Contracts (Regulation) Act 1956, stock exchange means any body of individuals, whether incorporated or not, constituted for the purpose of assisting, regulating or controlling the business of buying and selling or dealing in securities.

Functions of a Stock Exchange

The efficient functioning of a stock exchange creates a conducive climate for an active and growing primary market for new issues. An active and healthy secondary market in existing



Bombay Stock Exchange

History of the Stock Market in India

The history of the stock market in India goes back to the end of the eighteenth century when long-term negotiable securities were first issued. In 1850 the Companies Act was introduced for the first time bringing with it the feature of limited liability and generating investor interest in corporate securities. The first stock exchange in India was set-up in 1875 as The Native Share and Stock Brokers Association in Bombay. Today it is known as the Bombay Stock Exchange (BSE). This was followed by the development of exchanges in Ahmedabad (1894), Calcutta(1908) and Madras(1937). It is interesting to note that stock exchanges were first set up in major centers of trade and commerce.

Until the early 1990s, the Indian secondary market comprised regional stock exchanges with BSE heading the list. After the reforms of 1991, the Indian secondary market acquired a three tier form. This consists of:

- Regional Stock Exchanges
- National Stock Exchange (NSE)
- Over the Counter Exchange of India (OTCEI)

securities leads to positive environment among investors. The following are some of the important functions of a stock exchange.

1. Providing Liquidity and Marketability to Existing Securities: The basic function of a stock exchange is the creation of a continuous market where securities are bought and sold. It gives investors the chance to disinvest and reinvest. This provides both liquidity and easy marketability to already existing securities in the market.

2. Pricing of Securities: Share prices on a stock exchange are determined by the forces of demand and supply. A stock exchange is a mechanism of constant valuation through which the prices of securities are determined. Such a valuation provides important instant information to both buyers and sellers in the market.

3. Safety of Transaction: The membership of a stock exchange is well-regulated and its dealings are well defined according to the existing legal framework. This ensures that the investing public gets a safe and fair deal on the market.

4. Contributes to Economic Growth: A stock exchange is a market in which existing securities are resold or traded. Through this process of disinvestment and reinvestment savings get channelised into their most productive investment avenues. This leads to capital formation and economic growth.

5. Spreading of Equity Cult: The stock exchange can play a vital role in ensuring wider share ownership by regulating new issues, better trading practices and taking effective steps in educating the public about investments.

6. Providing Scope for Speculation:

The stock exchange provides sufficient scope within the provisions of law for speculative activity in a restricted and controlled manner. It is generally accepted that a certain degree of healthy speculation is necessary to ensure liquidity and price continuity in the stock market.

TRADING PROCEDURE ON A STOCK EXCHANGE

Till a few years ago trading on a stock exchange took place through a public outcry or auction system. This has been replaced by an online screen based electronic trading system as almost all exchanges have become electronic. Trading has, therefore,

shifted from the stock market floor to the brokers' office where trades are executed through a computer. Brokers are members of a stock exchange through whom trading of securities is done. Brokers may be individuals, partnership firms or corporate bodies. They are the intermediaries between the buyers and sellers. Earlier these members owned, controlled and managed the exchanges. The ownership and management of stock exchanges by brokers often led to a conflict of interest between the brokers and their clients. This led to 'demutualisation' of stock exchanges. Demutualisation separates the ownership and control of stock exchanges from the trading rights of members. This reduces the conflict of interest between the exchange and the



Electronic Trading System

brokers and the chances of brokers using stock exchanges for personal gains.

A company's securities can be traded on a stock exchange only if they are *listed* or *quoted* on it. Companies have to fulfill a stringent set of requirements to get their securities listed on a stock exchange. This ensures that the interest of the shareholders is adequately looked after. Transactions on a stock exchange may be carried out on either cash basis or a carry over basis. The carry over basis is also called *badla* and is a unique feature of Indian stock markets, particularly the BSE. A stock exchange year is divided into periods called 'accounts' which vary from a fortnight to a month. All transactions made during one account are to be settled by payment for purchases and by delivery of share certificates in the case

of sales on notified days of the clearing programme of a given stock exchange.

A share certificate is proof of ownership of securities by an individual. Purchase and sale transactions in securities involved the exchange of money in return for the share certificate. This led to problems of theft, forgery, transfer delays and time involved in paperwork. To eliminate these problems an electronic book entry form of holding and transferring securities has been introduced. This is referred to as '**dematerialisation of securities**'.

NATIONAL STOCK EXCHANGE OF INDIA (NSE)

The National Stock Exchange is the latest, most modern and technology driven exchange. It was incorporated in 1992 and was recognised as a stock

Stock Market Index

A stock market index is a barometer of market behaviour. It measures overall market sentiment through a set of stocks that are representative of the market. It reflects market direction and indicates day-to-day fluctuations in stock prices. An ideal index must represent changes in the prices of securities and reflect price movements of typical shares for better market representation. In the Indian markets the BSE, SENSEX and NSE, NIFTY are important indices. Some important global stock market indices are:

- Dow Jones Industrial Average is among the oldest quoted stock market index in the US.
- NASDAQ Composite Index is the market capitalisation weightages of prices for stocks listed in the NASDAQ stock market.
- S and P 500 Index is made up of 500 biggest publicly traded companies in the US. The S and P 500 is often treated as a proxy for the US stock market.
- FTSE 100 consists of the largest 100 companies by full market value listed on the London Stock Exchange. The FTSE 100 is the benchmark index of the European market.

exchange in April 1993. It started operations in 1994, with trading on the wholesale debt market segment. Subsequently, it launched the capital market segment in November 1994 as a trading platform for equities and the futures and options segment in June 2000 for various derivative instruments. NSE has set up a nationwide fully automated screen based trading system.

The NSE was setup by leading financial institutions, banks, insurance companies and other financial intermediaries. It is managed by professionals, who do not directly or indirectly trade on the exchange. The trading rights are with the trading members who offer their services to the investors. The board of NSE comprises of senior executives from promoter institutions and eminent professionals, without having any representation from trading members.

OBJECTIVES OF NSE

NSE was set up with the following objectives:

- a. Establishing a nationwide trading facility for all types of securities.
- b. Ensuring equal access to investors all over the country through an appropriate communication network.
- c. Providing a fair, efficient and transparent securities market using electronic trading system.
- d. Enabling shorter settlement cycles and book entry settlements.
- e. Meeting international benchmarks and standards.

Within a span of ten years, NSE has been able to achieve its objectives for which it was set up. It has been playing a leading role as a change agent in transforming the Indian capital market. NSE has been able to take the stock market to the door step of the investors.

Some Common Stock Market Terms

You would have often come across the following terms in magazines or newspapers when you read about the stock market.

BOURSES is another word for the stock market

BULLS and **BEARS** – The term does not refer to animals but to market sentiment of the investors. A Bullish phase refers to a period of optimism and a Bearish phase to a period of pessimism on the Bourses.

BADLA – This refers to a carry forward system of settlement, particularly at the BSE. It is a facility that allows the postponement of the delivery or payment of a transaction from one settlement period to another.

ODD LOT TRADING – Trading in multiples of 100 stocks or less.

PENNY STOCKS – These are securities that have no value on the stock exchange but whose trading contributes to speculation.

It has ensured that technology has been harnessed to deliver the services to the investors across the country at the lowest cost. It has provided a nation wide screen based automated trading system with a high degree of transparency and equal access to investors irrespective of geographical location.

MARKET SEGMENTS OF NSE

The Exchange provides trading in the following two segments.

- (i) *Whole Sale Debt Market Segment:* This segment provides a trading platform for a wide range of fixed income securities that include central government securities, treasury bills, state development loans, bonds issued by public

sector undertakings, floating rate bonds, zero coupon bonds, index bonds, commercial paper, certificate of deposit, corporate debentures and mutual funds.

- (ii) *Capital Market Segment:* The capital market segment of NSE provides an efficient and transparent platform for trading in equity, preference, debentures, exchange traded funds as well as retail Government securities.

OVER THE COUNTER EXCHANGE OF INDIA (OTCEI)

The OTCEI is a company incorporated under the Companies Act 1956. It was set-up to provide small and medium companies an access to the capital market for raising finance in a cost

SENSEX — The Bombay Stock Exchange Sensitive Index

Have you counted the number of times newspaper headlines in the past few weeks have been screaming about the SENSEX? It goes up and down all the time and seems to be a very important part of business and economic news. Has that made you wonder what the SENSEX actually is?

The SENSEX is the benchmark index of the BSE. Since the BSE has been the leading exchange of the Indian secondary market, the SENSEX has been an important indicator of the Indian stock market. It is the most frequently used indicator while reporting on the state of the market. An index has just one job: to capture the price movement. So a stock index will reflect the price movements of shares while a bond index captures the manner in which bond prices go up or down. If the SENSEX rises, it indicates the market is doing well. Since stocks are supposed to reflect what companies expect to earn in the future, a rising index indicates that investors expect better earnings from companies. It is also a measure of the state of the Indian economy. If Indian companies are expected to do well, obviously the economy should do well too.

The SENSEX, launched in 1986 is made up of 30 of the most actively traded stocks in the market. In fact, they account for half the BSE's market capitalisation. They represent 13 sectors of the economy and are leaders in their respective industries.

effective manner. It was also meant to provide investors with a convenient, transparent and efficient avenue for capital market investment. It is fully computerised, transparent, single window exchange which commenced trading in 1992. This exchange is established on the lines of NASDAQ (National Association of Securities Dealers Automated Quotations) the OTC exchange in USA. It has been promoted by UTI, ICICI, IDBI, IFCI, LIC, GIC, SBI Capital markets and Can Bank Financial Services.

Over the counter market may be defined as a place where buyers seek sellers and vice-versa and then attempt to arrange terms and conditions for purchase/sale acceptable to both the parties. It is a negotiated market place that exists anywhere as opposed to the auction market place, represented by the activity on securities exchanges. Thus, in the OTC exchange, trading takes place when a buyer or seller walks up to an OTCEI counter, taps on the computer screen, finds quotes and effects a purchase or sale depending on whether the prices meet their targets. There is no particular market place in the geographical sense. The objectives of OTCEI are to provide quicker liquidity to securities at a fixed and fair price, liquidity for less traded securities or that of small companies, a simplified process of buying and selling and easy and cheaper means of making public sale of new issues.

Advantages of OTC Market

1. It provides a trading platform to smaller and less liquid companies as they are not eligible for listing on a regular exchange.
2. It is a cost effective method for corporates as there is a lower cost of new issues and lower expenses of servicing the investors.
3. Family concerns and closely held companies can go public through OTC.
4. Dealers can operate both in new issues and secondary market at their option.
5. It gives greater freedom of choice to investors to choose stocks by dealers for market making in both primary and secondary markets.
6. It is a transparent system of trading with no problem of bad or short deliveries.
7. Information flows are free and more direct from market makers to customers since there is close contact between them.

SECURITIES AND EXCHANGE BOARD OF INDIA (SEBI)

The Securities and Exchange Board of India was established by the Government of India on 12 April 1988 as an interim administrative body to promote orderly and healthy growth of securities market and for investor protection. It was to function under

the overall administrative control of the Ministry of Finance of the Government of India. The SEBI was given a statutory status on 30 January 1992 through an ordinance. The ordinance was later replaced by an Act of Parliament known as the Securities and Exchange Board of India Act, 1992.

Reasons for the Establishment of SEBI

The capital market has witnessed a tremendous growth during 1980's, characterised particularly by the increasing participation of the public. This ever expanding investors population and market capitalisation led to a variety of malpractices on the part of companies, brokers, merchant bankers, investment consultants and others involved in the securities market. The glaring examples of these malpractices include existence of self – styled merchant bankers unofficial private placements, rigging of prices, unofficial premium on new issues, non-adherence of provisions of the Companies Act, violation of rules and regulations of stock exchanges and listing requirements, delay in delivery of shares etc. These malpractices and unfair trading practices have eroded investor confidence and multiplied investor grievances. The Government and the stock exchanges were rather helpless in redressing the investor's problems because of lack of proper penal provisions in the existing legislation.

In view of the above, the Government of India decided to set-up a separate regulatory body known as Securities and Exchange Board of India.

Purpose and Role of SEBI

The basic purpose of SEBI is to create an environment to facilitate efficient mobilisation and allocation of resources through the securities markets. It also aims to stimulate competition and encourage innovation. This environment includes rules and regulations, institutions and their interrelationships, instruments, practices, infrastructure and policy framework.

This environment aims at meeting the needs of the three groups which basically constitute the market, viz, the issuers of securities (Companies), the investors and the market intermediaries.

- To the issuers, it aims to provide a market place in which they can confidently look forward to raising finances they need in an easy, fair and efficient manner.
- To the investors, it should provide protection of their rights and interests through adequate, accurate and authentic information and disclosure of information on a continuous basis.
- To the intermediaries, it should offer a competitive, professionalised and expanding market with adequate and efficient infrastructure so that they are able to render better service to the investors and issuers.

Objectives of SEBI

The overall objective of SEBI is to protect the interests of investors and to promote the development of, and regulate the securities market. This may be elaborated as follows:

1. To regulate stock exchanges and the securities industry to promote their orderly functioning.
2. To protect the rights and interests of investors, particularly individual investors and to guide and educate them.
3. To prevent trading malpractices and achieve a balance between self regulation by the securities industry and its statutory regulation.
4. To regulate and develop a code of conduct and fair practices by intermediaries like brokers, merchant bankers etc., with a view to making them competitive and professional.

Functions of SEBI

Keeping in mind the emerging nature of the securities market in India, SEBI was entrusted with the twin task of both regulation and development of the securities market.

Regulatory Functions

1. Registration of brokers and sub-brokers and other players in the market.
2. Registration of collective investment schemes and Mutual Funds.
3. Regulation of Stock Bankers and portfolio exchanges, and merchant bankers.

4. Prohibition of fraudulent and unfair trade practices.
5. Controlling insider trading and takeover bids and imposing penalties for such practices.
6. Calling for information by undertaking inspection, conducting enquiries and audits of stock exchanges and intermediaries.
7. Levying fee or other charges for carrying out the purposes of the Act.
8. Performing and exercising such power under Securities Contracts (Regulation) Act 1956, as may be delegated by the Government of India.

Development Functions

1. Investor education
2. Training of intermediaries
3. Promotion of fair practices and code of conduct of all SRO's.
4. Conducting research and publishing information useful to all market participants.

The Organisation Structure of SEBI

As SEBI is a statutory body there has been a considerable expansion in the range and scope of its activities. Each of the activities of the SEBI now demands more careful, closer, co-ordinated and intensive attention to enable it to attain its objectives. Accordingly, SEBI has been restructured and rationalised in tune with its expanded scope. It has decided its activities into five operational departments. Each department is headed by an executive director. Apart from its head office at Mumbai, SEBI has

opened regional offices in Kolkalta, Chennai, and Delhi to attend to investor complaints and liaise with the issuers, intermediaries and stock exchanges in the concerned region.

The SEBI also formed two advisory committees. They are the Primary Market Advisory Committee and the Secondary Market Advisory Committee. These committees consist of the market players, the investors associations

- b. To advise SEBI on issues related to the development of primary market in India.
- c. To advise SEBI on disclosure requirements for companies.
- d. To advise for changes in legal framework to introduce simplification and transparency in the primary market.
- e. To advice the board in matters relating to the development and

SEBI Violations

SEBI on Thursday unearthed yet another abuse of IPO norms in the IDFC's Initial Public Offering (IPO) where a few investors opened over 14,000 dematerialised accounts to corner large number of shares of the company.

This is the second such incident, after a similar such violations were detected in the YES Bank's IPO.

SEBI said in IDFC's IPO too four investors opened as many as 14,807 dematerialised accounts with Karvy-DP and 'Strangely', all these account holders have their bank accounts with Bharat Overseas Bank Ltd., Ahmedabad.

SEBI order said: "Further probe is required for examining the systemic fault, if any, of the registrar Karvy-RTI, i.e., Karvy Computer Shares P Ltd., and the lead managers Kotak Mahindra Capital Company Ltd., DSP Merrill Lynch Ltd. and SBI Capital Markets Ltd. in identifying and weeding out the *benami* applications."

Reference is being made to the RBI to examine the role of BOB, HDFC Bank, Indian Overseas Bank, ING Vysya Bank and Vijaya Bank in opening the bank accounts of these *benami* entities and apparently funding them.

Source: The Economic Times

recognised by the SEBI and the eminent persons in the capital market. They provide important inputs to the SEBI'S policies.

The objectives of the two Committees are as follows:

- a. To advise SEBI on matters relating to the regulation of intermediaries for ensuring investors protection in the primary market.

regulation of the secondary market in the country.

The committees are however non-statutory in nature and the SEBI is not bound by the advise of the committee. These committees are a part of SEBI's constant endeavor to obtain a feedback from the market players on various issues relating to the regulations and development of the market.

KEY TERMS

Financial Market	Money Market	Treasury Bills
Commercial Paper	Call Money	Certificate of Deposit
Commercial Bill	Money Market	Mutual Fund Capital
Market	Primary Market	Secondary Market
Stock Exchange	SEBI, NSE	OTCEI

SUMMARY

Financial Market is a market for creation and exchange of financial assets. It helps in mobilisation and channelising the savings into most productive uses. Financial markets also helps in price discovery and provide liquidity to financial assets.

Money Market is a market for short-term funds. It deals in monetary assets whose period of maturity is less than one year. The instruments of money market includes treasury bills, commercial paper, call money, REPO's, Certificate of deposit, commercial bills, participation certificates and money market mutual funds.

Capital Market is a place where long-term funds are mobilised by the corporate undertakings and Government. Capital Market may be divided into primary market and secondary market. Primary market deals with new securities which were not previously tradable to the public. Secondary market is a place where existing securities are bought and sold.

Stock Exchanges are the organisations which provide a platform for buying and selling of existing securities. Stock exchanges provide continuous market for securities, helps in price discovery, widening shareownership and provide scope for speculation.

The National Stock Exchange of India is the latest, most modern and technology driven exchange and was incorporated in 1992. OTCEI was incorporated in 1992 to provide listing facility for small companies with paid up capital of less than 3 crores.

Securities and Exchange Board of India was established in 1988 and was given statutory status through an Act in 1992. The SEBI was set-up to protect the interests of investors, development and regulation of securities market.

EXERCISES**Multiple choice questions**

1. Primary and Secondary Markets
 - a. Compete with each other
 - b. Complement each other
 - c. Function Independently
 - d. Control each other
2. Total number of Stock Exchanges in India are
 - a. 20
 - b. 21
 - c. 22
 - d. 23
3. The settlement cycle in NSE is
 - a. T + 5
 - b. T + 3
 - c. T + 2
 - d. T+1
4. National Stock Exchange of India was recognized as stock exchange in the year.
 - a. 1992
 - b. 1993
 - c. 1994
 - d. 1995
5. NSE commenced futures trading in the year
 - a. 1999
 - b. 2000
 - c. 2001
 - d. 2002
6. Clearing and settlement operations of NSE is carried out by
 - a. NSDL
 - b. NSCCL
 - c. SBI
 - d. CDSL
7. OTCEI was started on the lines of
 - a. NASDAQ
 - b. NYSE
 - c. NASAQ
 - d. NSE
8. To be listed on OTCEI, the minimum capital requirement for a company is
 - a. Rs. 5 Crores
 - b. Rs. 3 Crores
 - c. Rs. 6 Crores
 - d. Rs. 1 Crores
9. Treasury Bills are basically
 - a. An instrument to borrow short term funds
 - b. An instrument to borrow long term funds
 - c. An instrument of capital market
 - d. None of the above
10. REPO is
 - a. Repurchase agreement
 - b. Reliance Petroleum
 - c. Read and Process
 - d. None of the above

Short answer questions

1. What are the functions of financial markets?
2. "Money Market is essentially Market for short term funds" Discuss.
3. What is Treasury Bill ?

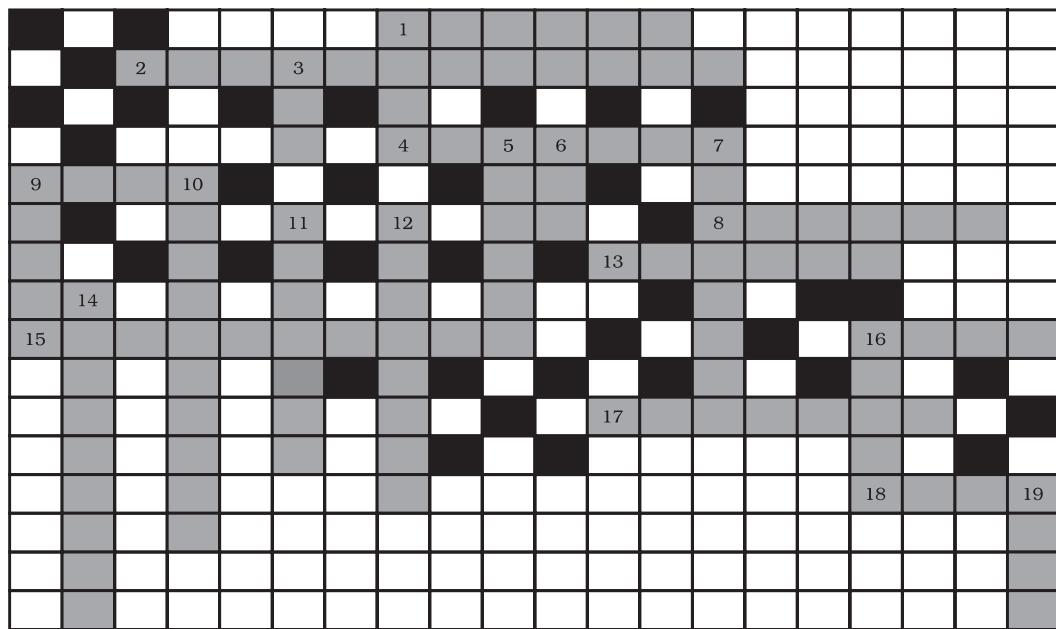
4. What is REPO and Reverse REPO?
5. Distinguish between Capital Market and Money Market.
6. What are the functions of Stock Exchange?
7. What are the objectives of SEBI?
8. What are the objectives of NSE?
9. What is OTCEI?

Long answer questions

1. Explain the various Money Market Instruments.
2. What are the methods of floatation in Primary Market.
3. Explain the Capital Market reforms in India.
4. Explain the objectives and functions of SEBI
5. Explain the various segments of NSE.

Projects and Assignments

1. Collect the information about the companies that have mobilised resources through primary market.
2. Collect the information on various measures taken by SEBI to protect the interests of investors since its inception.



Try and Solve this Crossword

3. Send a group of students to a trading terminal in your city to gain first hand information on securities trading and prepare a report.
4. Collect data about the movements in SENSEX and NIFTY during the last one month. Find out whether the two move in same or opposite direction.
5. Collect information about SEBI action for Investor Protection taken during last two years.
6. Collect information about e-IPO's in the Indian Market in the last one year.

Clues to the Crossword**Across**

1. Commission Agent who transacts in securities on behalf of non members or members (6).
2. Changes in the price of securities in the stock market. (12)
3. Inclusion of securities in the official trade list of securities in stock market (7)
4. Place of trade I securities (6)
5. Result of selling shares at a price lower than the purchase price. (4)
6. An independent dealer in securities (6)
7. Includes shares, scripts, bonds, debentures (10)
8. Speculator who expects the prices to go down (4)
9. Buying and selling of securities to manipulate the market (7)
10. Speculator who deals in new securities only (4)

Down

1. Speculator expecting a rise in the prices (4)
2. Means 'with' (3)
3. Means a part or fraction of capital (6)
4. Fraction of profit paid to government (3)
5. Illegal, game based on chance (8)
6. Official statement of securities in the stock market (5)
7. Those who buy and sell securities with objective of profit (10)
8. Money invested in business (7)
9. Return on shares out of profits (8)
10. Instrument acknowledging a debt (9)
11. Govt. document acknowledging a debt (5)
12. Profit or yield (4)

Case Problem I

'R' Limited is a real estate company which was formed in 1950. In about 56 years of its existence the company has managed to carve out a niche for itself in this sector. Lately, this sector is witnessing a boom due to the fact that the Indian economy is on the rise. The incomes of middle class are rising. More people can afford to buy homes for themselves due to easy availability of loans and accompanying tax concessions.

To expand its business in India and abroad the company is weighing various options to raise money through equity offerings in India. Whether to tap equity or debt market whether to raise money from domestic market or international market or Combination of both? Whe their to raise the necessary financé from money market or capital market. It is also planning to list itself in New York Stock Exchange to raise money through ADR's. To make its offerings attractive it is planning to offer host of financial plans products to its stakeholders and investors and also expand it's listing at NSE after complying with the regulations of SEBI.

- (i) What benefits will the company derive from listing at NSE?
- (ii) What are the regulations of SEBI that the company must comply with?
- (iii) How does the SEBI exercise control over 'R' Limited in the interest of investors?

Case Problem II

NSE Indices				World Markets			
Index	Current	Prev.	%CHG	Index	Current	Prev.	% Change
S&P CNX Nifty	3641.1	3770.55	-3.43%	NYSE Composite	8926.88	9120.93	-2.13%
CNX Nifty Junior	6458.55	6634.85	-2.66%	NASDAQ Composite	2350.57	2402.29	-2.15%
CNX IT	5100.5	5314.05	-4.02%	DOW Jones I. A.	12076	12318.6	-1.97%
Bank Nifty	5039.05	5251.55	-4.05%	S&P 500	1377.95	1406.6	-2.04%
CNX 100	3519.35	3640.35	-3.32%	Nikkei 225	16676.9	17178.8	-2.92%

More

Source: www.nseindia.com

The above figures are taken from the website of national stock exchange of India. They illustrate the movement of NSE stock indices as well as world stock indices on the date indicated.

Questions

1. What do you mean by a stock index? How is it calculated?
2. What conclusions can you draw from the various movements of NSE stock indices?
3. What factors affect the movement of stock indices? Elaborate on the nature of these factors.

4. What relationship do you see between the movement of indices in world markets and NSE indices?
5. Give details of all the indices mentioned above. You can find information on the web or business magazines.

(The teacher should help the students in answering these questions. They can look at the website mentioned above and also website of SEBI, i.e., www.sebi.gov.in for educational material. This exercise will help the students in understanding the stock markets clearly and also create interest therein.)

Project Work

1. Study the website of Mumbai Stock Exchange, i.e., www.bseindia.com and compile information which you find useful. Discuss it in your class and find out how it can help you should you decide to invest in the stock market. Prepare a report on your findings with the help of your teacher.
2. Prepare a report on the role of SEBI in regulating the Indian stock market. You can get this information on its website namely www.sebi.gov.in. Do you think something else should be done to increase the number of investors in the stock market?

Answers to the Crossword

Across 1. Broker 2. Fluctuations 4. Listing 8. Market 9. Loss
 13. Jobber 15. Securities 16. Bear 17. Rigging 18. Stag

Down 1. Bull 3. Cum 5. Stocks 6. Tax 7. Gambling
 9. Lists 10. Speculator 11. Capital 12. Dividend 14. Debenture
 16. Bonds 19. Gain



UNIT I

DEVELOPMENT POLICIES AND EXPERIENCE
(1947–90)

The two chapters in this unit give us an overview of the state of the Indian economy as it was at the eve of independence till after four decades of planned development, which was a path that India chose. This meant that the Government of India had to take a series of steps such as the establishment of the Planning Commission and announcement of five year plans. An overview of the goals of five year plans and a critical appraisal of the merits and limitations of planned development has been covered in this unit.

INDIAN ECONOMY ON THE EVE OF INDEPENDENCE

After studying this chapter, the learners will

- become familiar with the state of the Indian economy in 1947, the year of India's Independence
- understand the factors that led to the underdevelopment and stagnation of the Indian economy.



"India is the pivot of our Empire... If the Empire loses any other part of its Dominion we can survive, but if we lose India, the sun of our Empire will have set."

Victor Alexander Vrnce, the Viceroy of British India in 1894

1.1 INTRODUCTION

The primary objective of this book, *Indian Economic Development*, is to familiarise you with the basic features of the Indian economy, and its development, as it is today, in the aftermath of Independence. However, it is equally important to know something about the country's economic past even as you learn about its present state and future prospects. So, let us first look at the state of India's economy prior to the country's independence and form an idea of the various considerations that shaped India's post-independence development strategy.

The structure of India's present-day economy is not just of current making; it has its roots steeped in history, particularly in the period when India was under British rule which lasted for almost two centuries before India finally won its independence on 15 August 1947. The sole purpose of the British colonial rule in India was to reduce the country to being a feeder economy for Great Britain's own

rapidly expanding modern industrial base. An understanding of the exploitative nature of this relationship is essential for any assessment of the kind and level of development which the Indian economy has been able to attain over the last six decades.

1.2 LOW LEVEL OF ECONOMIC DEVELOPMENT UNDER THE COLONIAL RULE

India had an independent economy before the advent of the British rule. Though agriculture was the main source of livelihood for most people, yet, the country's economy was characterised by various kinds of manufacturing activities. India was particularly well known for its handicraft industries in the fields of cotton and silk textiles, metal and precious stone works etc. These products enjoyed a worldwide market based on the reputation of the fine quality of material used and the high standards of craftsmanship seen in all imports from India.

Box 1.1: Textile Industry in Bengal

Muslin is a type of cotton textile which had its origin in Bengal, particularly, places in and around Dhaka (spelled during the pre-independence period as Dacca), now the capital city of Bangladesh. 'Daccai Muslin' had gained worldwide fame as an exquisite type of cotton textile. The finest variety of muslin was called *malma*. Sometimes, foreign travellers also used to refer to it as *malma shahi* or *malma khas* implying that it was worn by, or fit for, the royalty.



The economic policies pursued by the colonial government in India were concerned more with the protection and promotion of the economic interests of their home country than with the development of the Indian economy. Such policies brought about a fundamental change in the structure of the Indian economy – transforming the country into a net supplier of raw materials and consumer of finished industrial products from Britain. Obviously, the colonial government never made any sincere attempt to estimate India's **national** and **per capita income**. Some individual attempts which were made to measure such incomes yielded conflicting and inconsistent results. Among the notable estimators – Dadabhai Naoroji, William Digby, Findlay Shirras, V.K.R.V. Rao and R.C. Desai – it was

Rao whose estimates of the national and per capita incomes during the colonial period were considered very significant. However, most studies did find that the country's growth of aggregate real output during the first half of the twentieth century was less than two per cent coupled with a meagre half per cent growth in per capita output per year.

1.3 AGRICULTURAL SECTOR

India's economy under the British colonial rule remained fundamentally agrarian – about 85 per cent of the country's population lived mostly in villages and derived livelihood directly or indirectly from agriculture. However, despite being the occupation of such a large population, the agricultural sector continued to experience

Box 1.2: Agriculture During Pre-British India

The French traveller, Bernier, described seventeenth century Bengal in the following way: "The knowledge I have acquired of Bengal in two visits inclines me to believe that it is richer than Egypt. It exports, in abundance, cottons and silks, rice, sugar and butter. It produces amply – for its own consumption – wheat, vegetables, grains, fowls, ducks and geese. It has immense herds of pigs and flocks of sheep and goats. Fish of every kind it has in profusion. From *rajmahal* to the sea is an endless number of canals, cut in bygone ages from the Ganges by immense labour for navigation and irrigation."

- Take note of the agricultural prosperity in our country in the seventeenth century. Contrast it with agricultural stagnation around the time when the British left India, around 200 years later.



Fig. 1.1 India's agricultural stagnation under the British colonial rule



stagnation and, not infrequently, unusual deterioration. **Agricultural productivity** became incrementally low though, in absolute terms, the sector experienced some growth due to the expansion of the aggregate area under cultivation. This stagnation in the agricultural sector was caused mainly because of the various systems of **land settlement** that were introduced by the colonial government. Particularly, under the *zamindari* system which was implemented in the then Bengal Presidency comprising parts of India's present-day eastern states, the profit accruing out of the agriculture sector went to the *zamindars* instead of the cultivators. However, a considerable number of *zamindars*, and not just the colonial government, did nothing to improve the condition of agriculture. The main interest of the *zamindars* was only to collect rent

regardless of the economic condition of the cultivators; this caused immense misery and social tension among the latter. To a very great extent, the terms of the **revenue settlement** were also responsible for the *zamindars* adopting such an attitude; dates for depositing specified sums of revenue were fixed, failing which the *zamindars* were to lose their rights. Besides this, low levels of technology, lack of irrigation facilities and negligible use of fertilisers, all added up to aggravate the plight of the farmers and contributed to the dismal level of agricultural productivity. There was, of course, some evidence of a relatively higher yield of cash crops in certain areas of the country due to **commercialisation of agriculture**. But this could hardly help farmers in improving their economic condition as, instead of producing food crops, now they were



Work These Out

- Compare the map of British India with that of independent India and find out the areas that became parts of Pakistan. Why were those parts so important to India from the economic point of view? (Refer, to your advantage, Dr Rajendra Prasad's book, *India Divided*).
- What were the various forms of revenue settlement adopted by the British in India? Where did they implement them and to what effect? How far do you think those settlements have a bearing on the current agricultural scenario in India? (In your attempt to find answers to these questions, you may refer to Ramesh Chandra Dutt's *Economic History of India*, which comes in three volumes, and B.H. Baden-Powell's *The Land Systems of British India*, also in two volumes. For better comprehension of the subject, you can also try and develop an illustrated agrarian map of British India either by hand or with the help of your school computer. Remember, nothing helps better than an illustrated map to understand the subject at hand).



producing cash crops which were to be ultimately used by British industries back home. India's agricultural production received a further set back due to the country's partition at the time of independence. A sizeable portion of the undivided country's highly irrigated and fertile land went to Pakistan; this had an adverse impact upon India's output from the agriculture sector. Particularly affected was India's jute industry since almost the whole of the jute producing area became part of East Pakistan (now Bangladesh). India's jute goods industry (in which the country had enjoyed a world monopoly so far), thus, suffered heavily for lack of raw material.

1.4 INDUSTRIAL SECTOR

As in the case of agriculture, so also in manufacturing, India could not develop a sound industrial base under the colonial rule. Even as the country's world famous handicraft industries declined, no corresponding modern industrial base was allowed to come up to take pride of place so long enjoyed by the former. The primary motive of the colonial government behind this policy of systematically de-industrialising India was two-fold. The intention was, first, to reduce India to the status of a mere exporter of important raw materials for the upcoming modern industries in Britain and, second, to turn India into a sprawling market for the finished products of those industries so that their continued expansion could be

ensured to the maximum advantage of their home country – Britain. In the unfolding economic scenario, the decline of the indigenous handicraft industries created not only massive unemployment in India but also a new demand in the Indian consumer market, which was now deprived of the supply of locally made goods. This demand was profitably met by the increasing imports of cheap manufactured goods from Britain.

During the second half of the nineteenth century, modern industry began to take root in India but its progress remained very slow. Initially, this development was confined to the setting up of cotton and jute textile mills. The cotton textile mills, mainly dominated by Indians, were located in the western parts of the country, namely, Maharashtra and Gujarat, while the jute mills dominated by the foreigners were mainly concentrated in Bengal. Subsequently, the iron and steel industries began coming up in the beginning of the twentieth century. The Tata Iron and Steel Company (TISCO) was incorporated in 1907. A few other industries in the fields of sugar, cement, paper etc. came up after the Second World War.

However, there was hardly any **capital goods industry** to help promote further industrialisation in India. Capital goods industry means industries which can produce machine tools which are, in turn, used for producing articles for current consumption. The establishment of a few manufacturing units here and



Work These Out

- Prepare a list showing where and when other modern industries of India were first set up. Can you also find out what the basic requirements are for setting up any modern industry? What, for example, might have been the reasons for the setting up of the Tata Iron and Steel Company at Jamshedpur, which is now in the state of Jharkhand?
- How many iron and steel factories are there in India at present? Are these iron and steel factories among the best in the world or do you think that these factories need restructuring and upgradation? If yes, how can this be done? There is an argument that industries which are not strategic in nature should not continue to be in the public sector. What is your view?
- On a map of India, mark the cotton textiles, jute mills and textile mills that existed at the time of independence.

there was no substitute to the near wholesale displacement of the country's traditional handicraft industries. Furthermore, the growth rate of the new industrial sector and its contribution to the **Gross Domestic Product (GDP)** remained very small. Another significant drawback of the new industrial sector was the very limited area of operation of the public sector. This sector remained confined only to the railways, power generation, communications, ports and some other departmental undertakings.

1.5 FOREIGN TRADE

India has been an important trading nation since ancient times. But the restrictive policies of commodity production, trade and tariff pursued by the colonial government adversely affected the structure, composition and volume of India's foreign trade. Consequently, India became an

exporter of primary products such as raw silk, cotton, wool, sugar, indigo, jute etc. and an importer of finished consumer goods like cotton, silk and woollen clothes and capital goods like light machinery produced in the factories of Britain. For all practical purposes, Britain maintained a monopoly control over India's exports and imports. As a result, more than half of India's foreign trade was restricted to Britain while the rest was allowed with a few other countries like China, Ceylon (Sri Lanka) and Persia (Iran). The opening of the Suez Canal further intensified British control over India's foreign trade (see Box 1.3).

The most important characteristic of India's foreign trade throughout the colonial period was the generation of a large export surplus. But this surplus came at a huge cost to the country's economy. Several essential commodities—food grains, clothes,





Work These Out

- Prepare a list of items that were exported from and imported into India during the British rule.
- Collect information from the *Economic Survey* for various years published by the Ministry of Finance, Government of India, on various items of export from India and its imports. Compare these with imports and exports from the pre-independence era. Also find out the names of prominent ports which now handle the bulk of India's foreign trade.

kerosene etc. – became conspicuous by their acute scarcity in the domestic market. Furthermore, this export surplus did not result in any flow of gold or silver into India. Rather, this was used to make payments for the expenses incurred by an office set up by the colonial government in Britain, expenses on war, again fought by the British government, and the import of

invisible items, all of which led to the drain of Indian wealth.

1.6 DEMOGRAPHIC CONDITION

Various details about the population of British India were first collected through a census in 1881. Though suffering from certain limitations, it revealed the unevenness in India's population growth. Subsequently,



Fig.1.2 Suez Canal: Used as highway between India and Britain

Box 1.3: Trade Through the Suez Canal

Suez Canal is an artificial waterway running from north to south across the Isthmus of Suez in north-eastern Egypt. It connects Port Said on the Mediterranean Sea with the Gulf of Suez, an arm of the Red Sea. The canal provides a direct trade route for ships operating between European or American ports and ports located in South Asia, East Africa and Oceania by doing away with the need to sail around Africa. Strategically and economically, it is one of the most important waterways in the world. Its opening in 1869 reduced the cost of transportation and made access to the Indian market easier.



every ten years such census operations were carried out. Before 1921, India was in the first stage of demographic transition. The second stage of transition began after 1921. However, neither the total population of India nor the rate of population growth at this stage was very high.

The various social development indicators were also not quite encouraging. The overall literacy level was less than 16 per cent. Out of this, the female literacy level was at a negligible low of about seven per cent. Public health facilities were either unavailable to large chunks of population or, when available, were highly inadequate. Consequently, water and air-borne diseases were rampant and took a huge toll on life. No wonder, the overall **mortality rate** was very high and in that,

particularly, the **infant mortality rate** was quite alarming—about 218 per thousand in contrast to the present infant mortality rate of 63 per thousand. **Life expectancy** was also very low—32 years in contrast to the present 63 years. In the absence of reliable data, it is difficult to specify the extent of poverty at that time but there is no doubt that extensive poverty prevailed in India during the colonial period which contributed to the worsening profile of India's population of the time.

1.7 OCCUPATIONAL STRUCTURE

During the colonial period, the occupational structure of India, i.e., distribution of working persons across different industries and sectors, showed little sign of change. The agricultural sector accounted for the

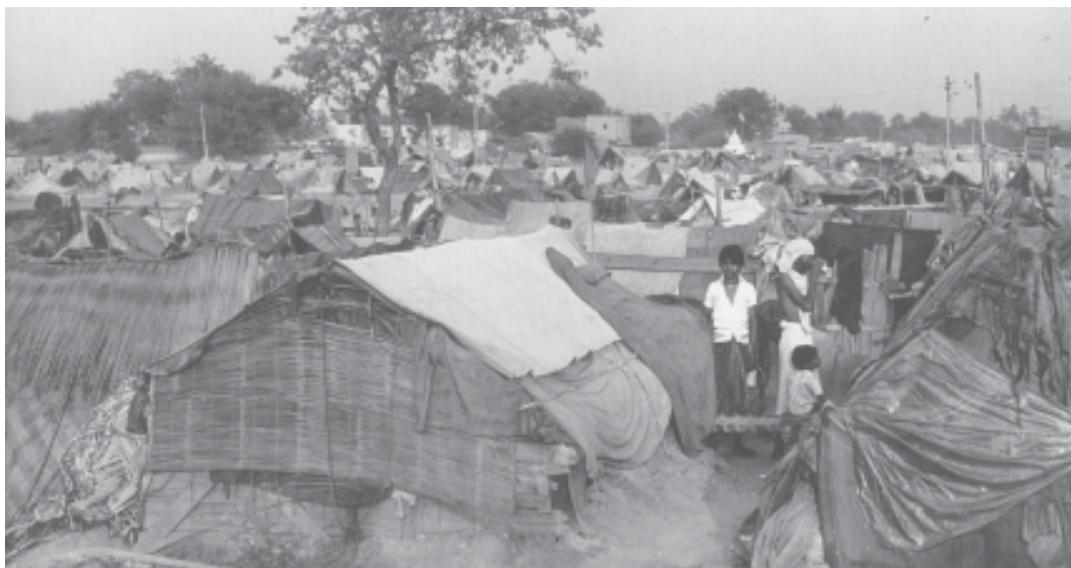


Fig. 1.3 Poverty, malnutrition and poor health facilities also cause the population to grow slowly





Work These Out

- Can you find out the reasons behind frequent occurrence of famines in India before independence? You may read from Nobel Laureate Amartya Sen's book, *Poverty and Famines*.
- Prepare a pie chart for the occupational structure in India at the time of independence.

largest share of workforce, which usually remained at a high of 70–75 per cent while the manufacturing and the services sectors accounted for only 10 and 15–20 per cent respectively. Another striking aspect was the growing regional variation. Parts of the then Madras Presidency (comprising areas of the present-day states of Tamil Nadu, Andhra Pradesh, Kerala and Karnataka), Maharashtra and West Bengal witnessed a decline in the dependence of the workforce on the agricultural sector with a commensurate increase in the manufacturing and the services sectors. However, there had been an increase in the share of workforce in agriculture during the same time in states such as Orissa, Rajasthan and Punjab.

1.8 INFRASTRUCTURE

Under the colonial regime, basic infrastructure such as railways, ports, water transport, posts and telegraphs did develop. However, the real motive

behind this development was not to provide basic amenities to the people but to subserve various colonial interests. Roads constructed in India prior to the advent of the British rule were not fit for modern transport. The colonial administration also could not accomplish much on this front due to a paucity of funds. The roads that were built primarily served the purposes of mobilising the army within India and drawing out raw materials from the countryside to the nearest railway station or the port to send these to far away England or other lucrative foreign destinations. There always remained an acute shortage of all-weather roads to reach out to the rural areas during the rainy season. Naturally, therefore, people mostly living in these areas suffered grievously during natural calamities and famines.

The British introduced the railways in India in 1850 and it is considered as one of their most important contributions. The railways affected the structure of the Indian economy in two important ways. On the one hand it enabled people to undertake long distance travel and thereby break geographical and cultural barriers while, on the other hand, it fostered commercialisation of Indian agriculture which adversely affected the comparative self-sufficiency of the village economies in India. The volume of India's export trade undoubtedly expanded but its benefits rarely accrued to the Indian people. The social benefits, which the





Fig. 1.4 First Railway Bridge linking Bombay with Thane, 1854

Indian people gained owing to the introduction of the railways, were thus outweighed by the country's huge economic loss.

Along with the development of roads and railways, the colonial dispensation also took measures for developing the inland trade and sea lanes. However, these measures were far from satisfactory. The inland waterways, at times, also proved uneconomical as in the case of the Coast Canal on the Orissa coast. Though the canal was built at a huge



Work This Out

➤ There is a perception still going around that in many ways the British administration in India was quite beneficial. This perception needs an informed debate. How would you look at this perception? Argue this out in your class—'Was the British Raj good for India'?



Fig. 1.5 Tata Airlines, a division of Tata and Sons, was established in 1932 inaugurating the aviation sector in India

cost to the government exchequer, yet, it failed to compete with the railways, which soon traversed the region running parallel to the canal, and had to be ultimately abandoned. The introduction of the expensive system of electric telegraph in India, similarly, served the purpose of maintaining law and order. The postal services, on the other hand, despite serving a useful public purpose, remained all through





inadequate. You will learn more about the present status of various infrastructure in Chapter 8.

1.9 CONCLUSION

By the time India won its independence, the impact of the two-century long British colonial rule was already showing on all aspects of the Indian economy. The agricultural sector was already saddled with surplus labour and extremely low productivity. The industrial sector was crying for

modernisation, diversification, capacity building and increased public investment. Foreign trade was oriented to feed the Industrial Revolution in Britain. Infrastructure facilities, including the famed railway network, needed upgradation, expansion and public orientation. Prevalence of rampant poverty and unemployment required welfare orientation of public economic policy. In a nutshell, the social and economic challenges before the country were enormous.



Recap

- An understanding of the economy before independence is necessary to know and appreciate the level of development achieved during the post-independence period.
- Under the colonial dispensation, the economic policies of the government were concerned more with the protection and promotion of British economic interests than with the need to develop the economic condition of the colonised country and its people.
- The agricultural sector continued to experience stagnation and incremental deterioration despite the fact that the largest section of Indian population depended on it for sustenance.
- Systematic policies pursued by the British-India government led to the collapse of India's world famous handicraft industries without contributing, in any significant manner, to its replacement by a modern industrial base.
- Lack of adequate public health facilities, occurrence of frequent natural calamities and famines pauperised the hapless Indian people and resulted in engendering high mortality rates.
- Some efforts were made by the colonial regime to improve infrastructure facilities but these efforts were spiced with selfish motives though, in the long run, the independent Indian government built on this base the country's future economic and social development plan.





EXERCISES

1. What was the focus of the economic policies pursued by the colonial government in India? What were the impacts of these policies?
2. Name some notable economists who estimated India's per capita income during the colonial period.
3. What were the main causes of India's agricultural stagnation during the colonial period?
4. Name some modern industries which were in operation in our country at the time of independence.
5. What was the two-fold motive behind the systematic de-industrialisation effected by the British in pre-independent India?
6. The traditional handicrafts industries were ruined under the British rule. Do you agree with this view? Give reasons in support of your answer.
7. What objectives did the British intend to achieve through their policies of infrastructure development in India?
8. Critically appraise some of the shortfalls of the industrial policy pursued by the British colonial administration.
9. What do you understand by the drain of Indian wealth during the colonial period?
10. Which is regarded as the defining year to mark the demographic transition from its first to the second decisive stage?
11. Give a quantitative appraisal of India's demographic profile during the colonial period.
12. Highlight the salient features of India's pre-independence occupational structure.
13. Underscore some of India's most crucial economic challenges at the time of independence.
14. When was India's first official census operation undertaken?
15. Indicate the volume and direction of trade at the time of independence.
16. Were there any positive contributions made by the British in India? Discuss.





SUGGESTED ADDITIONAL ACTIVITIES

1. Prepare a list of goods and services that were available to people in pre-independence India in rural and urban areas. Compare it with the consumption pattern of such goods and services by the people today. Highlight the perceptible difference in the people's standard of living.
2. Find pictures of towns/villages, in your vicinity, of the pre-independence period and compare these with their present scenario. What changes can you mark? Are such changes for better or for worse? Discuss.
3. Rally around your teacher and organise a group discussion on 'Has the zamindari system really been abolished in India'? If the consensus is negative, then what measures would you think should be taken to banish it and why?
4. Identify the major occupations followed by the people of our country at the time of independence. What major occupations do the people follow today? In the light of reform policies, how would you visualise the occupational scenario in India 15 years from now—say, 2020?



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2

Indian Economy 1950-1990

After studying this chapter, the learners will

- come to know the goals of India's five year plans
- know about the development policies in different sectors such as agriculture and industry from 1950-1990
- learn to think about the merits and limitations of a regulated economy.



The central objective of Planning in India... is to initiate a process of development which will raise the living standards and open out to the people new opportunities for a richer and more varied life.

First Five Year Plan

2.1 INTRODUCTION

On 15 August 1947, India woke to a new dawn of freedom: finally we were masters of our own destiny after some two hundred years of British rule; the job of nation building was now in our own hands. The leaders of independent India had to decide, among other things, the type of **economic system** most suitable for our nation, a system which would promote the welfare of all rather than a few. There are different types of economic systems (see Box 2.1) and among them, socialism appealed to Jawaharlal Nehru the most. However, he was not in favour of the kind of socialism established in the former Soviet Union where all the means of production, i.e., all the factories and farms in the country, were owned by the government. There was no private property. It is not possible in a democracy like India for the government to change the ownership pattern of land and other properties of its citizens in the way that it was done in the former Soviet Union.

Nehru, and many other leaders and thinkers of the newly independent India, sought an alternative to the extreme versions of capitalism and socialism. Basically sympathising with the socialist outlook, they found the

answer in an economic system which, in their view, combined the best features of socialism without its drawbacks. In this view, India would be a 'socialist' society with a strong public sector but also with private property and democracy; the government would 'plan' (see Box 2.2) for the



Work These Out

- Prepare a chart on the different types of economic systems prevalent in the world. List out the countries as capitalist, socialist and mixed economy.
- Plan a class trip to an agriculture farm. Divide the class into seven groups with each group to plan a specific goal, for example, the purpose of the visit, money expenditure involved, time taken, resources, people accompanying the group and who need to be contacted, possible places of visit, possible questions to be asked etc. Now, with the help of your teacher, compile these specific goals and compare with long-term goals of successful visit to an agricultural farm.



Box 2.1: Types of Economic Systems

Every society has to answer three questions

- What goods and services should be produced in the country?
- How should the goods and services be produced? Should producers use more human labour or more capital (machines) for producing things?
- How should the goods and services be distributed among people?

One answer to these questions is to depend on the **market forces** of supply and demand. In a market economy, also called capitalism, only those consumer goods will be produced that are in demand, i.e., goods that can be sold profitably either in the domestic or in the foreign markets. If cars are in demand, cars will be produced and if bicycles are in demand, bicycles will be produced. If labour is cheaper than capital, more labour-intensive methods of production will be used and vice-versa. In a capitalist society the goods produced are distributed among people not on the basis of what people need but on the basis of what people can afford and are willing to purchase. This means that a sick person will be able to use the required medicine only if he/she can afford to buy it; if they cannot afford the medicine they will not be able to use it even if they need it urgently. Such a society did not appeal to Jawaharlal Nehru, our first prime minister, for it meant that the great majority of people of the country would be left behind without the chance to improve their quality of life.

A **socialist** society answers the three questions in a totally different manner. In a socialist society the government decides what goods are to be produced in accordance with the needs of society. It is assumed that the government knows what is good for the people of the country and so the desires of individual consumers are not given much importance. The government decides how goods are to be produced and how they should be distributed. In principle, distribution under socialism is supposed to be based on what people need and not on what they can afford to purchase. Unlike under capitalism, for example, a socialist nation provides free health care to the citizens who need it. Strictly, a socialist society has no private property since everything is owned by the state. With the collapse of the Soviet system in the last decades of the twentieth century, socialist economies in the former Soviet Union and the socialist states in Eastern Europe ceased to exist.

Most economies are **mixed economies**, i.e., the government and the market together answer the three questions of what to produce, how to produce and how to distribute what is produced. In a mixed economy, the market will provide whatever goods and services it can produce well, and the government will provide essential goods and services which the market fails to do.



Box 2.2: What is a Plan?

A plan spells out how the resources of a nation should be put to use. It should have some general goals as well as specific objectives which are to be achieved within a specified period of time; in India plans are of five years duration and are called five year plans (we borrowed this from the former Soviet Union, the pioneer in national planning). Our plan documents not only specify the objectives to be attained in the five years of a plan but also what is to be achieved over a period of twenty years. This long-term plan is called 'perspective plan'. The five year plans are supposed to provide the basis for the perspective plan.

It will be unrealistic to expect all the goals of a plan to be given equal importance in all the plans. In fact the goals may actually be in conflict. For example, the goal of introducing modern technology may be in conflict with the goal of increasing employment if the technology reduces the need for labour. The planners have to balance the goals, a very difficult job indeed. We find different goals being emphasised in different plans in India.

Our five year plans do not spell out how much of each and every good and service is to be produced. This is neither possible nor necessary (the former Soviet Union tried to do this and failed). It is enough if the plan is specific about the sectors where it plays a commanding role, for instance, power generation and irrigation, while leaving the rest to the market.

economy with the private sector being encouraged to be part of the plan effort. The 'Industrial Policy Resolution' of 1948 and the Directive Principles of the Indian Constitution reflected this outlook. In 1950, the **Planning Commission** was set up with the Prime Minister as its Chairperson. The era of five year plans had begun.

2.2 THE GOALS OF FIVE YEAR PLANS

A plan should have some clearly specified goals. The goals of the five year plans are: growth, modernisation, self-reliance and equity. This does not mean that all the plans have given equal importance to all these goals. Due to limited resources, a choice has to be made in each plan about which

of the goals is to be given primary importance. Nevertheless, the planners have to ensure that, as far as possible, the policies of the plans do not contradict these four goals. Let us now learn about the goals of planning in some detail.

Growth: It refers to increase in the country's capacity to produce the output of goods and services within the country. It implies either a larger stock of productive capital, or a larger size of supporting services like transport and banking, or an increase in the efficiency of productive capital and services. A good indicator of economic growth, in the language of



Box 2.3: Mahalanobis: the Architect of Indian Planning

Many distinguished thinkers contributed to the formulation of our five year plans. Among them, the name of the statistician, Prasanta Chandra Mahalanobis, stands out.

Planning, in the real sense of the term, began with the Second Five Year Plan. The Second Plan, a landmark contribution to development planning in general, laid down the basic ideas regarding goals of Indian planning; this plan was based on the ideas of Mahalanobis. In that sense, he can be regarded as the architect of Indian planning.

Mahalanobis was born in 1893 in Calcutta. He was educated at the Presidency College in Calcutta and at Cambridge University in England. His contributions to the subject of statistics brought him international fame. In 1946 he was made a Fellow (member) of Britain's Royal Society, one of the most prestigious organisations of scientists; only the most outstanding scientists are made members of this Society.

Mahalanobis established the Indian Statistical Institute (ISI) in Calcutta and started a journal, *Sankhya*, which still serves as a respected forum for statisticians to discuss their ideas. Both, the ISI and *Sankhya*, are highly regarded by statisticians and economists all over the world to this day.

During the second plan period, Mahalanobis invited many distinguished economists from India and abroad to advise him on India's economic development. Some of these economists became Nobel Prize winners later, which shows that he could identify individuals with talent. Among the economists invited by Mahalanobis were those who were very critical of the socialist principles of the second plan. In other words, he was willing to listen to what his critics had to say, the mark of a great scholar.

Many economists today reject the approach to planning formulated by Mahalanobis but he will always be remembered for playing a vital role in putting India on the road to economic progress, and statisticians continue to profit from his contribution to statistical theory.

Source: Sukhamoy Chakravarty, 'Mahalanobis, Prasanta Chandra' in John Eatwell et.al. (Eds.) *The New Palgrave Dictionary: Economic Development*, W.W. Norton, New York and London.



Box 2.4: The Service Sector

As a country develops, it undergoes 'structural change'. In the case of India, the structural change is peculiar. Usually, with development, the share of agriculture declines and the share of industry becomes dominant. At higher levels of development, the service sector contributes more to the GDP than the other two sectors. In India, the share of agriculture in the GDP was more than 50 per cent—as we would expect for a poor country. But by 1990 the share of the service sector was 40.59 per cent, more than that of agriculture or industry, like what we find in developed nations. This phenomenon of growing share of the service sector was accelerated in the post 1991 period (this marked the onset of globalisation in the country which will be discussed in a subsequent chapter).

economics, is steady increase in the Gross Domestic Product (GDP). The GDP is the market value of all the goods and services produced in the country during a year. You can think of the GDP as a cake: growth is increase in the size of the cake. If the cake is larger, more people can enjoy it. It is necessary to produce more goods and services if the people of India are to enjoy (in the words of the First Five Year Plan) a more rich and varied life.

The GDP of a country is derived from the different sector's of the economy, namely the agricultural sector, the industrial sector and the service sector. The contribution made by each of these sectors makes up the **structural composition** of the economy. In some countries, growth in agriculture contributes more to the GDP growth, while in some countries the growth in the service sector contributes more to GDP growth (see Box 2.4).

Modernisation: To increase the production of goods and services

the producers have to adopt new technology. For example, a farmer can increase the output on the farm by using new seed varieties instead of using the old ones. Similarly, a factory can increase output by using a new type of machine. Adoption of new technology is called modernisation.

However, modernisation does not refer only to the use of new technology but also to changes in social outlook such as the recognition that women should have the same rights as men. In a traditional society, women are supposed to remain at home while men work. A modern society makes use of the talents of women in the work place — in banks, factories, schools etc. — and such a society will be more civilised and prosperous.

Self-reliance: A nation can promote economic growth and modernisation by using its own resources or by using resources imported from other nations. The first seven five year plans gave importance to self-reliance which means avoiding imports of those goods which could be



Work These Out

- Discuss in your class the changes in technology used for
 - Production of food grains
 - Packaging of products
 - Mass communication.
- Find out and prepare a list of items that India used to import and export during 1950-51 and 1990-91.
 - Observe the difference
 - Do you see the impact of self-reliance? Discuss.

For getting these details you may refer to *Economic Survey* of the latest year.

produced in India itself. This policy was considered a necessity in order to reduce our dependence on foreign countries, especially for food. It is understandable that people who were recently freed from foreign domination should give importance to self-reliance. Further, it was feared that dependence on imported food supplies, foreign technology and foreign capital may make India's sovereignty vulnerable to foreign interference in our policies.

Equity: Now growth, modernisation and self-reliance, by themselves, may not improve the kind of life which people are living. A country can have high growth, the most modern technology developed in the country itself, and also have most of its people living in poverty. It is important to ensure that the benefits of economic prosperity reach the poor sections as well instead of being enjoyed only by the rich. So, in addition to growth, modernisation and self-reliance, equity is also important: every Indian should be able to meet his or her basic

needs such as food, a decent house, education and health care and inequality in the distribution of wealth should be reduced.

Let us now see how the first seven five year plans, covering the period 1950-1990, attempted to attain these four goals and the extent to which they succeeded in doing so, with reference to agriculture, industry and trade. You will study the policies and developmental issues taken up after 1991 in Chapter 3.

2.3 AGRICULTURE

You have learnt in Chapter 1 that during the colonial rule there was neither growth nor equity in the agricultural sector. The policy makers of independent India had to address these issues which they did through land reforms and promoting the use of 'miracle seeds' which ushered in a revolution in Indian agriculture.

Land Reforms: At the time of independence, the land tenure system was characterised by intermediaries



Box 2.5: Ownership and Incentives

The policy of 'land to the tiller' is based on the idea that the cultivators will take more interest—they will have more incentive—in increasing output if they are the owners of the land. This is because ownership of land enables the tiller to make profit from the increased output. Tenants do not have the incentive to make improvements on land since it is the landowner who would benefit more from higher output. The importance of ownership in providing incentives is well illustrated by the carelessness with which farmers in the former Soviet Union used to pack fruits for sale. It was not uncommon to see farmers packing rotten fruits along with fresh fruits in the same box. Now, every farmer knows that the rotten fruits will spoil the fresh fruits if they are packed together. This will be a loss to the farmer since the fruits cannot be sold. So why did the Soviet farmers do something which would so obviously result in loss for them? The answer lies in the incentives facing the farmers. Since farmers in the former Soviet Union did not own any land, they neither enjoyed the profits nor suffered the losses. In the absence of ownership, there was no incentive on the part of farmers to be efficient, which also explains the poor performance of the agricultural sector in the Soviet Union despite availability of vast areas of highly fertile land.

Source: Thomas Sowell, *Basic Economics: A Citizen's Guide to the Economy*, New York: Basic Books, 2004, Second Edition.

(variously called *zamindars*, *jagirdars* etc.) who merely collected rent from the actual tillers of the soil without contributing towards improvements on the farm. The low productivity of the agricultural sector forced India to import food from the United States of America (U.S.A.). Equity in agriculture called for **land reforms** which primarily refer to change in the ownership of landholdings. Just a year after independence, steps were taken to abolish intermediaries and to make the tillers the owners of land. The idea behind this move was that ownership of land would give incentives (see Box 2.5) to the tillers to invest in making improvements provided sufficient capital was made available to them.

Land ceiling was another policy to promote equity in the agricultural sector. This means fixing the maximum size of land which could be owned by an individual. The purpose of land ceiling was to reduce the concentration of land ownership in a few hands.

The abolition of intermediaries meant that some 200 lakh tenants came into direct contact with the government — they were thus freed from being exploited by the *zamindars*. The ownership conferred on tenants gave them the incentive to increase output and this contributed to growth in agriculture. However, the goal of equity was not fully served by abolition of intermediaries. In some areas the former *zamindars*



continued to own large areas of land by making use of some loopholes in the legislation; there were cases where tenants were evicted and the landowners claimed to be self-cultivators (the actual tillers), claiming ownership of the land; and even when the tillers got ownership of land, the poorest of the agricultural labourers (such as sharecroppers and landless labourers) did not benefit from land reforms.

The land ceiling legislation also faced hurdles. The big landlords challenged the legislation in the courts, delaying its implementation. They used this delay to register their lands in the name of close relatives, thereby escaping from the legislation. The legislation also had a lot of loopholes which were exploited by the big landholders to retain their land. Land reforms were successful in Kerala and West Bengal because these states had governments committed to the policy of land to the tiller. Unfortunately other states did not have the same level of commitment and vast inequality in landholding continues to this day.

The Green Revolution: At independence, about 75 per cent of the country's population was dependent on agriculture. Productivity in the agricultural sector was very low because of the use of old technology and the absence of required infrastructure for the vast majority of farmers. India's agriculture vitally depends on the monsoon and if the monsoon fell short the farmers were

in trouble unless they had access to irrigation facilities which very few had. The stagnation in agriculture during the colonial rule was permanently broken by the green revolution: this refers to the large increase in production of food grains resulting from the use of **high yielding variety (HYV) seeds** especially for wheat and rice. The use of these seeds required the use of fertiliser and pesticide in the correct quantities as well as regular supply of water; the need for these inputs in correct proportions is vital. The farmers who could benefit from HYV seeds required reliable irrigation facilities as well as the financial resources to purchase fertiliser and pesticide. As a result, in the first phase of the green revolution (approximately mid 1960s upto mid 1970s), the use of HYV seeds was restricted to the more affluent states such as Punjab, Andhra Pradesh and Tamil Nadu. Further, the use of HYV seeds primarily benefited the wheat-growing regions only. In the second phase of the green revolution (mid-1970s to mid-1980s), the HYV technology spread to a larger number of states and benefited more variety of crops. The spread of green revolution technology enabled India to achieve self-sufficiency in food grains; we no longer had to be at the mercy of America, or any other nation, for meeting our nation's food requirements.

Growth in agricultural output is important but it is not enough: if a large proportion of this increase is





consumed by the farmers themselves instead of being sold in the market, the higher output will not make much of a difference to the economy as a whole. If, on the other hand, a substantial amount of agricultural produce is sold in the market by the farmers, the higher output can make a difference to the economy. The portion of agricultural produce which is sold in the market by the farmers is called **marketed surplus**. Fortunately, as pointed out by the famous economist C.H. Hanumantha Rao, a good proportion of the rice and wheat produced during the green revolution period (available as marketed surplus) was sold by the farmers in the market. As a result, the price of food grains declined relative to other items of consumption. The low-income groups, who spend a

large percentage of their income on food, benefited from this decline in relative prices. The green revolution enabled the government to procure sufficient amount of food grains to build a stock which could be used in times of food shortage.

While the nation had immensely benefited from the green revolution, the technology involved was not free from risks. One such risk was the possibility that it would increase the disparities between small and big farmers—since only the big farmers could afford the required inputs, thereby reaping most of the benefits of the green revolution. Moreover, the HYV crops were also more prone to attack by pests and the small farmers who adopted this technology could lose everything in a pest attack.



Fortunately, these fears did not come true because of the steps taken by the government. The government provided loans at a low interest rate to small farmers and subsidised fertilisers so that small farmers could also have access to the needed inputs. Since the small farmers could obtain the required inputs, the output on small farms equalled the output on large farms in the course of time. As a result, the green revolution benefited the small as well as rich farmers. The risk of the small farmers being ruined when pests attack their crops was considerably reduced by the services rendered by research institutes established by the government. You should note that the green revolution would have favoured the rich farmers only if the state did not play an extensive role in ensuring that the small farmer also gains from the new technology.

The Debate Over Subsidies: The economic justification of subsidies in agriculture is, at present, a hotly debated question. It is generally agreed that it was necessary to use subsidies to provide an incentive for adoption of the new HYV technology by farmers in general and small farmers in particular. Any new technology will be looked upon as being risky by farmers. Subsidies were, therefore, needed to encourage farmers to test the new technology. Some economists believe that once the technology is found profitable and is widely adopted, subsidies

should be phased out since their purpose has been served. Further, subsidies are meant to benefit the farmers but a substantial amount of fertiliser subsidy also benefits the fertiliser industry; and among farmers, the subsidy largely benefits the farmers in the more prosperous regions. Therefore, it is argued that there is no case for continuing with fertiliser subsidies; it does not benefit the target group and it is a huge burden on the government's finances (see also Box 2.6).

On the other hand, some believe that the government should continue with agricultural subsidies because farming in India continues to be a risky business. Most farmers are very poor and they will not be able to afford the required inputs without subsidies. Eliminating subsidies will increase the inequality between rich and poor farmers and violate the goal of equity. These experts argue that if subsidies are largely benefiting the fertiliser industry and big farmers, the correct policy is not to abolish subsidies but to take steps to ensure that only the poor farmers enjoy the benefits.

Thus, by the late 1960s, Indian agricultural productivity had increased sufficiently to enable the country to be self-sufficient in food grains. This is an achievement to be proud of. On the negative side, some 65 per cent of the country's population continued to be employed in agriculture even as late as 1990. Economists have found that as





Box 2.6: Prices as Signals

You would have learnt in an earlier class about how prices of goods are determined in the market. It is important to understand that prices are signals about the availability of goods. If a good becomes scarce, its price will rise and those who use this good will have the incentive to make efficient decisions about its use based on the price. If the price of water goes up because of lower supply, people will have the incentive to use it with greater care; for example, they may stop watering the garden to conserve water. We complain whenever the price of petrol increases and blame it on the government. But the increase in petrol price reflects greater scarcity and the price rise is a signal that less petrol is available—this provides an incentive to use less petrol or look for alternate fuels.

Some economists point out that subsidies do not allow prices to indicate the supply of a good. When electricity and water are provided at a subsidised rate or free, they will be used wastefully without any concern for their scarcity. Farmers will cultivate water intensive crops if water is supplied free, although the water resources in that region may be scarce and such crops will further deplete the already scarce resources. If water is priced to reflect scarcity, farmers will cultivate crops suitable to the region. Fertiliser and pesticide subsidies result in overuse of resources which can be harmful to the environment. Subsidies provide an incentive for wasteful use of resources. Think about subsidies in terms of incentives and ask yourself whether it is wise from the economic viewpoint to provide free electricity to farmers.

a nation becomes more prosperous, the proportion of GDP contributed by agriculture as well as the proportion of population working in the sector declines considerably. In India, between 1950 and 1990, the proportion of GDP contributed by agriculture declined significantly but not the population depending on it (67.5 per cent in 1950 to 64.9 per cent by 1990). Why was such a large proportion of the population engaged in agriculture although agricultural output could have grown with much less people working in the sector? The answer is that the industrial sector and the service sector did not absorb the people working in the agricultural

sector. Many economists call this an important failure of our policies followed during 1950-1990.

2.4 INDUSTRY AND TRADE

Economists have found that poor nations can progress only if they have a good industrial sector. Industry provides employment which is more stable than the employment in agriculture; it promotes modernisation and overall prosperity. It is for this reason that the five year plans place a lot of emphasis on industrial development. You might have studied in the previous chapter that, at the time of independence, the variety of industries was very narrow





Work These Out

- A group of students may visit an agricultural farm, prepare a case study on the method of farming used, that is, types of seeds, fertilisers, machines, means of irrigation, cost involved, marketable surplus and income earned. It will be beneficial if the changes in cultivation methods could be collected from an elderly member of the farming family
 - (a) Discuss the findings in your class.
 - (b) The different groups can then prepare a chart showing variations in cost of production, productivity, use of seeds, fertilisers, means of irrigation, time taken, marketable surplus and income of the family.
- Collect newspaper cuttings related to the World Bank, International Monetary Fund, World Trade Organisation (and meets of G7, G8, G10 countries). Discuss the views shared by the developed and developing countries on farm subsidies.
- Prepare pie charts on the occupational structure of the Indian economy available in the following table.

Sector	1950–51	1990–91
Agriculture	72.1	66.8
Industry	10.7	12.7
Services	17.2	20.5

- Study the arguments for and against agricultural subsidies. What is your view on this issue?
- Some economists argue that farmers in other countries, particularly developed countries, are provided with high amount of subsidies and are encouraged to export their produce to other countries. Do you think our farmers will be able to compete with farmers from developed countries? Discuss.

— largely confined to cotton textiles and jute. There were two well-managed iron and steel firms — one in Jamshedpur and the other in Kolkata — but, obviously, we needed to expand the industrial base with a variety of industries if the economy was to grow.

Market and State in Indian Industrial Development: The big question facing the policy makers was — what should be the role of the government and the private sector in industrial development? At the time of independence, Indian industrialists did not have the capital to undertake



investment in industrial ventures required for the development of our economy; nor was the market big enough to encourage industrialists to undertake major projects even if they had the capital to do so. It is principally for these reasons that the state had to play an extensive role in promoting the industrial sector. In addition, the decision to develop the Indian economy on socialist lines led to the policy of the state controlling the commanding heights of the economy, as the Second Five Year plan put it. This meant that the state would have complete control of those industries that were vital for the economy. The policies of the private sector would have to be complimentary to those of the public sector, with the public sector leading the way.

Industrial Policy Resolution 1956 (IPR 1956): In accordance with the goal of the state controlling the commanding heights of the economy, the Industrial Policy Resolution of 1956 was adopted. This resolution formed the basis of the Second Five Year Plan, the plan which tried to build the basis for a socialist pattern of society. This resolution classified industries into three categories. The first category comprised industries which would be exclusively owned by the state; the second category consisted of industries in which the private sector could supplement the efforts of the state sector, with the state taking the sole responsibility for starting new units; the third category consisted of the remaining industries which were to be in the private sector.

Although there was a category of industries left to the private sector, the sector was kept under state control through a system of licenses. No new industry was allowed unless a license was obtained from the government. This policy was used for promoting industry in backward regions; it was easier to obtain a license if the industrial unit was established in an economically backward area. In addition, such units were given certain concessions such as tax benefits and electricity at a lower tariff. The purpose of this policy was to promote **regional equality**.

Even an existing industry had to obtain a license for expanding output or for diversifying production (producing a new variety of goods). This was meant to ensure that the quantity of goods produced was not more than what the economy required. License to expand production was given only if the government was convinced that the economy required the larger quantity of goods.

Small-scale Industry: In 1955, the Village and Small-scale Industries Committee, also called the Karve Committee, noted the possibility of using small-scale industries for promoting rural development. A 'small-scale industry' is defined with reference to the maximum investment allowed on the assets of a unit. This limit has changed over a period of time. In 1950 a small-scale industrial unit was one which invested



a maximum of rupees five lakh; at present the maximum investment allowed is rupees one crore.

It was believed that small-scale industries are more 'labour intensive' i.e., they use more labour than the large-scale industries and, therefore, generate more employment. But these industries cannot compete with the big industrial firms; it is obvious that development of small-scale industry requires them to be shielded from the large firms. For this purpose, the production of a number of products was reserved for the small-scale industry; the criterion of reservation being the ability of these units to manufacture the goods. They were also given concessions such as lower excise duty and bank loans at lower interest rates.

2.5 TRADE POLICY: IMPORT SUBSTITUTION

The industrial policy that we adopted was closely related to the **trade policy**. In the first seven plans, trade was characterised by what is commonly called an **inward looking** trade strategy. Technically, this strategy is called **import substitution**. This policy aimed at replacing or substituting imports with domestic production. For example, instead of importing vehicles made in a foreign country, industries would be encouraged to produce them in India itself. In this policy the government protected the domestic industries from foreign competition. Protection from imports took two forms: tariffs and quotas.

Tariffs are a tax on imported goods; they make imported goods more expensive and discourage their use. Quotas specify the quantity of goods which can be imported. The effect of tariffs and quotas is that they restrict imports and, therefore, protect the domestic firms from foreign competition.

The policy of protection is based on the notion that industries of developing countries are not in a position to compete against the goods produced by more developed economies. It is assumed that if the domestic industries are protected they will learn to compete in the course of time. Our planners also feared the possibility of foreign exchange being spent on import of luxury goods if no restrictions were placed on imports. Nor was any serious thought given to promote exports until the mid-1980s.

Effect of Policies on Industrial Development: The achievements of India's industrial sector during the first seven plans are impressive indeed. The proportion of GDP contributed by the industrial sector increased in the period from 11.8 per cent in 1950-51 to 24.6 per cent in 1990-91. The rise in the industry's share of GDP is an important indicator of development. The six per cent annual growth rate of the industrial sector during the period is commendable. No longer was Indian industry restricted largely to cotton textiles and jute; in fact, the industrial sector became well





Work These Out

- Construct a pie chart for the following table on sectoral contribution to GDP and discuss the difference in the contribution of the sectors in the light of effects of development during 1950-91.

Sector	1950-51	1990-91
Agriculture	59.0	34.9
Industry	13.0	24.6
Services	28.0	40.5

- Conduct a debate in your classroom on the usefulness of Public Sector Undertakings (PSUs) by dividing the class into two groups. One group may speak in favour of PSUs and the other group against the motion (involve as many students as possible and encourage them to give examples).

diversified by 1990, largely due to the public sector. The promotion of small-scale industries gave opportunities to those people who did not have the capital to start large firms to get into business. Protection from foreign competition enabled the development of indigenous industries in the areas of electronics and automobile sectors which otherwise could not have developed.

In spite of the contribution made by the public sector to the growth of the Indian economy, some economists are critical of the performance of many public sector enterprises. It was proposed at the beginning of this

chapter that initially public sector was required in a big way. It is now widely held that state enterprises continued to produce certain goods and services (often monopolising them) although this was no longer required. An example is the provision of telecommunication service. The government had the monopoly of this service even after private sector firms could also provide it. Due to the absence of competition, even till the late 1990s, one had to wait for a long time to get a telephone connection. Another instance could be the establishment of Modern Bread, a bread-manufacturing firm, as if the



private sector could not manufacture bread! In 2001 this firm was sold to the private sector. The point is that no distinction was made between (i) what the public sector alone can do and (ii) what the private sector can also do. For example, even now only the public sector can supply national defense and free medical treatment for poor patients. And even though the private sector can manage hotels well, yet, the government also runs hotels. This has led some scholars to argue that the state should get out of areas which the private sector can manage and the government may concentrate its resources on important services which the private sector cannot provide.

Many public sector firms incurred huge losses but continued to function because it is very difficult, almost impossible, to close a government undertaking even if it is a drain on the nation's limited resources. This does not mean that private firms are always profitable (indeed, quite a few of the public sector firms were originally private firms which were on the verge of closure due to losses; they were then nationalised to protect the jobs of the workers). However, a loss-making private firm will not waste resources by being kept running despite the losses.

The need to obtain a license to start an industry was misused by industrial houses; a big industrialist would get a license not for starting a new firm but to prevent competitors from starting new firms. The excessive

regulation of what came to be called the **permit license raj** prevented certain firms from becoming more efficient. More time was spent by industrialists in trying to obtain a license or lobby with the concerned ministries rather than on thinking about how to improve their products.

The protection from foreign competition is also being criticised on the ground that it continued even after it proved to do more harm than good. Due to restrictions on imports, the Indian consumers had to purchase whatever the Indian producers produced. The producers were aware that they had a captive market; so they had no incentive to improve the quality of their goods. Why should they think of improving quality when they could sell low quality items at a high price? Competition from imports forces our producers to be more efficient.

Nevertheless, scholars point out that the public sector is not meant for earning profits but to promote the welfare of the nation. The public sector firms, on this view, should be evaluated on the basis of the extent to which they contribute to the welfare of people and not on the profits they earn. Regarding protection, some economists hold that we should protect our producers from foreign competition as long as the rich nations continue to do so. Owing to all these conflicts, economists called for a change in our policy. This, alongwith other problems, led the government to introduce a new economic policy in 1991.



2.6 CONCLUSION

The progress of the Indian economy during the first seven plans was impressive indeed. Our industries became far more diversified compared to the situation at independence. India became self-sufficient in food production thanks to the green revolution. Land reforms resulted in abolition of the hated *zamindari* system. However, many economists became dissatisfied with the performance of many public sector enterprises. Excessive government regulation prevented growth of

entrepreneurship. In the name of self-reliance, our producers were protected against foreign competition and this did not give them the incentive to improve the quality of goods that they produced. Our policies were 'inward oriented' and so we failed to develop a strong export sector. The need for reform of economic policy was widely felt in the context of changing global economic scenario, and the new economic policy was initiated in 1991 to make our economy more efficient. This is the subject of the next chapter.



Recap

- After independence, India envisaged an economic system which combines the best features of socialism and capitalism—this culminated in the mixed economy model.
- All the economic planning has been formulated through five year plans.
- Common goals of five year plans are growth, modernisation, self-sufficiency and equity.
- The major policy initiatives in agriculture sector were land reforms and green revolution. These initiatives helped India to become self-sufficient in food grains production.
- The proportion of people depending on agriculture did not decline as expected.
- Policy initiatives in the industrial sector raised its contribution to GDP.
- One of the major drawbacks in the industrial sector was the inefficient functioning of the public sector as it started incurring losses leading to drain on the nation's limited resources.



EXERCISES

1. Define a plan.
2. Why did India opt for planning?
3. Why should plans have goals?
4. What are miracle seeds?
5. What is marketable surplus?
6. Explain the need and type of land reforms implemented in the agriculture sector.
7. What is Green Revolution? Why was it implemented and how did it benefit the farmers? Explain in brief.
8. Explain 'growth with equity' as a planning objective.
9. Does modernisation as a planning objective create contradiction in the light of employment generation? Explain.
10. Why was it necessary for a developing country like India to follow self-reliance as a planning objective?
11. What is sectoral composition of an economy? Is it necessary that the service sector should contribute maximum to GDP of an economy? Comment.
12. Why was public sector given a leading role in industrial development during the planning period?
13. Explain the statement that green revolution enabled the government to procure sufficient food grains to build its stocks that could be used during times of shortage.
14. While subsidies encourage farmers to use new technology, they are a huge burden on government finances. Discuss the usefulness of subsidies in the light of this fact.
15. Why, despite the implementation of green revolution, 65 per cent of our population continued to be engaged in the agriculture sector till 1990?
16. Though public sector is very essential for industries, many public sector undertakings incur huge losses and are a drain on the economy's resources. Discuss the usefulness of public sector undertakings in the light of this fact.





17. Explain how import substitution can protect domestic industry.
18. Why and how was private sector regulated under the IPR 1956?
19. Match the following:

1. Prime Minister	A. Seeds that give large proportion of output
2. Gross Domestic Product	B. Quantity of goods that can be imported
3. Quota	C. Chairperson of the planning commission
4. Land Reforms	D. The money value of all the final goods and services produced within the economy in one year
5. HYV Seeds	E. Improvements in the field of agriculture to increase its productivity
6. Subsidy	F. The monetary assistance given by government for production activities.



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UNIT
II

ECONOMIC REFORMS
SINCE 1991

After forty years of planned development, India has been able to achieve a strong industrial base and became self-sufficient in the production of food grains. Nevertheless, a major segment of the population continues to depend on agriculture for its livelihood. In 1991, a crisis in the balance of payments led to the introduction of economic reforms in the country. This unit is an appraisal of the reform process and its implications for India.

3

LIBERALISATION, PRIVATISATION AND GLOBALISATION: AN APPRAISAL

After studying this chapter, the learners will

- understand the background of the reform policies introduced in India in 1991
- understand the mechanism through which reform policies were introduced
- comprehend the process of globalisation and its implications for India
- be aware of the impact of the reform process in various sectors.



There is a consensus in the world today that economic development is not all and the GDP is not necessarily a measure of progress of a society.

K.R. Narayanan

3.1 INTRODUCTION

You have studied in the previous chapter that, since independence, India followed the mixed economy framework by combining the advantages of the market economic system with those of the planned economic system. Some scholars argue that, over the years, this policy resulted in the establishment of a variety of rules and laws which were aimed at controlling and regulating the economy and instead ended up hampering the process of growth and development. Others state that India, which started its developmental path from near stagnation, has since been able to achieve growth in savings, developed a diversified industrial sector which produces a variety of goods and has experienced sustained expansion of agricultural output which has ensured food security.

In 1991, India met with an economic crisis relating to its external debt — the government was not able to make repayments on its borrowings from abroad; **foreign exchange reserves**, which we generally maintain to import petrol and other important items, dropped to levels that were not sufficient for even a fortnight. The crisis was further compounded by rising prices of essential goods. All these led the government to introduce a new set of

policy measures which changed the direction of our developmental strategies. In this chapter, we will look at the background of the crisis, measures that the government has adopted and their impact on various sectors of the economy.

3.2 BACKGROUND

The origin of the financial crisis can be traced from the inefficient management of the Indian economy in the 1980s. We know that for implementing various policies and its general administration, the government generates funds from various sources such as taxation, running of public sector enterprises etc. When expenditure is more than income, the government borrows to finance the **deficit** from banks and also from people within the country and from international **financial institutions**. When we import goods like petroleum, we pay in dollars which we earn from our exports.

Development policies required that even though the revenues were very low, the government had to overshoot its revenue to meet problems like unemployment, poverty and population explosion. The continued spending on development programmes of the government did not generate additional revenue. Moreover, the government was not



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able to generate sufficiently from internal sources such as taxation. When the government was spending a large share of its income on areas which do not provide immediate returns such as the social sector and defence, there was a need to utilise the rest of its revenue in a highly efficient manner. The income from public sector undertakings was also not very high to meet the growing expenditure. At times, our **foreign exchange**, borrowed from other countries and international financial institutions, was spent on meeting consumption needs. Neither was an attempt made to reduce such profligate spending nor sufficient attention was given to boost exports to pay for the growing imports.

In the late 1980s, government expenditure began to exceed its revenue by such large margins that it became unsustainable. Prices of many essential goods rose sharply. Imports grew at a very high rate without matching growth of exports. As pointed out earlier, foreign exchange reserves declined to a level that was not adequate to finance imports for more than two weeks. There was also not sufficient foreign exchange to pay the interest that needs to be paid to international lenders.

India approached the **International Bank for Reconstruction and Development (IBRD)**, popularly known as **World Bank** and the **International Monetary Fund (IMF)**, and received \$7 billion as loan to

manage the crisis. For availing the loan, these international agencies expected India to liberalise and open up the economy by removing restrictions on the private sector, reduce the role of the government in many areas and remove trade restrictions.

India agreed to the conditionalities of World Bank and IMF and announced the **New Economic Policy (NEP)**. The NEP consisted of wide ranging economic reforms. The thrust of the policies was towards creating a more competitive environment in the economy and removing the barriers to entry and growth of firms. This set of policies can broadly be classified into two groups: the stabilisation measures and the structural reform measures. Stabilisation measures are short-term measures, intended to correct some of the weaknesses that have developed in the **balance of payments** and to bring **inflation** under control. In simple words, this means that there was a need to maintain sufficient foreign exchange reserves and keep the rising prices under control. On the other hand, structural reform policies are long-term measures, aimed at improving the efficiency of the economy and increasing its international competitiveness by removing the rigidities in various segments of the Indian economy. The government initiated a variety of policies which fall under three heads viz., liberalisation, privatisation and globalisation. The first two are policy

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strategies and the last one is the outcome of these strategies.

3.3 LIBERALISATION

As pointed out in the beginning, rules and laws which were aimed at regulating the economic activities became major hindrances in growth and development. Liberalisation was introduced to put an end to these restrictions and open up various sectors of the economy. Though a few liberalisation measures were introduced in 1980s in areas of industrial licensing, **export-import policy**, technology upgradation, **fiscal policy** and foreign investment, reform policies initiated in 1991 were more comprehensive. Let us study some important areas such as the industrial sector, financial sector, tax reforms, **foreign exchange markets** and trade and investment sectors which received greater attention in and after 1991.

Deregulation of Industrial Sector: In India, regulatory mechanisms were enforced in various ways (i) industrial licensing under which every entrepreneur had to get permission from government officials to start a firm, close a firm or to decide the amount of goods that could be produced (ii) private sector was not allowed in many industries (iii) some goods could be produced only in small scale industries and (iv) controls on price fixation and distribution of selected industrial products.

The reform policies introduced in and after 1991 removed many of these restrictions. Industrial licensing was abolished for almost all but product categories — alcohol, cigarettes, hazardous chemicals, industrial explosives, electronics, aerospace and drugs and pharmaceuticals. The only industries which are now reserved for the public sector are defence equipments, atomic energy generation and railway transport. Many goods produced by small scale industries have now been **deregulated**. In many industries, the market has been allowed to determine the prices.

Financial Sector Reforms:

Financial sector includes financial institutions such as commercial banks, investment banks, **stock exchange** operations and foreign exchange market. The financial sector in India is controlled by the Reserve Bank of India (RBI). You may be aware that all the banks and other financial institutions in India are controlled through various norms and regulations of the RBI. The RBI decides the amount of money that the banks can keep with themselves, fixes interest rates, nature of lending to various sectors etc. One of the major aims of financial sector reforms is to reduce the role of RBI from regulator to facilitator of financial sector. This means that the financial sector may be allowed to take decisions on many matters without consulting the RBI.





The reform policies led to the establishment of private sector banks, Indian as well as foreign. Foreign investment limit in banks was raised to around 50 per cent. Those banks which fulfil certain conditions have been given freedom to set up new branches without the approval of the RBI and rationalise their existing branch networks. Though banks have been given permission to generate resources from India and abroad, certain aspects have been retained with the RBI to safeguard the interests of the account-holders and the nation. **Foreign Institutional Investors (FII)** such as merchant bankers, mutual funds and pension funds are now allowed to invest in Indian financial markets.

Tax Reforms: Tax reforms are concerned with the reforms in government's taxation and public expenditure policies which are collectively known as its **fiscal policy**. There are two types of taxes: direct and indirect. **Direct taxes** consist of taxes on incomes of individuals as well as profits of business enterprises. Since 1991, there has been a continuous reduction in the taxes on individual incomes as it was felt that high rates of income tax were an important reason for tax evasion. It is now widely accepted that moderate rates of income tax encourage savings and voluntary disclosure of income. The rate of **corporation tax**, which was

very high earlier, has been gradually reduced. Efforts have also been made to reform the **indirect taxes**, taxes levied on commodities, in order to facilitate the establishment of a common national market for goods and commodities. Another component of reforms in this area is simplification. In order to encourage better compliance on the part of taxpayers many procedures have been simplified and the rates also substantially lowered.

Foreign Exchange Reforms: The first important reform in the external sector was made in the foreign exchange market. In 1991, as an immediate measure to resolve the balance of payments crisis, the rupee was **devalued** against foreign currencies. This led to an increase in the inflow of foreign exchange. It also set the tone to free the determination of rupee value in the foreign exchange market from government control. Now, more often than not, markets determine exchange rates based on the demand and supply of foreign exchange.

Trade and Investment Policy Reforms: Liberalisation of trade and investment regime was initiated to increase international competitiveness of industrial production and also foreign investments and technology into the economy. The aim was also to promote the efficiency of the local industries and the adoption of modern technologies.



In order to protect domestic industries, India was following a regime of **quantitative restrictions** on imports. This was encouraged through tight control over imports and by keeping the **tariffs** very high. These policies reduced efficiency and competitiveness which led to slow growth of the manufacturing sector. The trade policy reforms aimed at (i) dismantling of quantitative restrictions on imports and exports (ii) reduction

of tariff rates and (iii) removal of licensing procedures for imports. **Import licensing** was abolished except in case of hazardous and environmentally sensitive industries. Quantitative restrictions on imports of manufactured consumer goods and agricultural products were also fully removed from April 2001. **Export duties** have been removed to increase the competitive position of Indian goods in the international markets.



Work These Out

- Give an example each of nationalised bank, private bank, private foreign bank, FII and a mutual fund.
- Visit a bank in your locality with your parents. Observe and find out the functions it performs. Discuss the same with your classmates and prepare a chart on it.
- Classify the following as direct and indirect taxes: sales tax, custom duties, property tax, death duties, VAT, income tax.
- Find out from your parents if they pay taxes. If yes, why do they do so and how?
- Do you know that for a very long time countries used to keep silver and gold as reserves to make payments abroad? Find out in what form do we keep our foreign exchange reserves and find out from newspapers, magazines and the Economic Survey how much foreign exchange reserves we have today. Also find the foreign currency of the following countries and its rupee exchange rate

Country	Currency	Value of 1(one) unit of foreign currency in Indian rupee
U.S.A.		
U.K.		
Japan		
China		
Korea		
Singapore		
Germany		



3.4 PRIVATISATION

It implies shedding of the ownership or management of a government owned enterprise. Government companies can be converted into private companies in two ways (i) by withdrawal of the government from ownership and management of public sector companies and or (ii) by outright sale of public sector companies.

Privatisation of the public sector undertakings by selling off part of the equity of PSUs to the public is known as **disinvestment**. The purpose of the sale, according to the government, was mainly to improve financial discipline and facilitate modernisation. It was also envisaged that private capital and managerial capabilities could be effectively utilised to improve the performance of the PSUs. The

Box 3.1: *Navaratnas* and Public Enterprise Policies

You must have read in your childhood about the famous *Navaratnas* or Nine Jewels in the Imperial Court of King Vikramaditya who were eminent persons of excellence in the fields of art, literature and knowledge. In 1996, in order to improve efficiency, infuse professionalism and enable them to compete more effectively in the liberalised global environment, the government chose nine PSUs and declared them as *navaratnas*. They were given greater managerial and operational autonomy, in taking various decisions to run the company efficiently and thus increase their profits. Greater operational, financial and managerial autonomy had also been granted to 97 other profit-making enterprises referred to as *mini ratnas*.

The first set of *navaratna* companies included Indian Oil Corporation Ltd (IOC), Bharat Petroleum Corporation Ltd (BPCL), Hindustan Petroleum Corporation Ltd (HPCL), Oil and Natural Gas Corporation Ltd (ONGC), Steel Authority of India Ltd (SAIL), Indian Petrochemicals Corporation Ltd (IPCL), Bharat Heavy Electricals Ltd (BHEL), National Thermal Power Corporation (NTPC) and Videsh Sanchar Nigam Ltd (VSNL). Later, two more PSUs—Gas Authority of India Limited (GAIL) and Mahanagar Telephone Nigam Ltd (MTNL)—were also given the same status.

Many of these profitable PSUs were originally formed during the 1950s and 1960s when self-reliance was an important element of public policy. They were set up with the intention of providing infrastructure and direct employment to the public so that quality end-product reaches the masses at a nominal cost and the companies themselves were made accountable to all stakeholders.

The granting of *navaratna* status resulted in better performance of these companies. Scholars state that instead of facilitating *navaratnas* in their expansion and enabling them to become global players, the government partly privatised them through disinvestment. Of late, the government has decided to retain the *navaratnas* in the public sector and enable them to expand themselves in the global markets and raise resources by themselves from financial markets.





Work These Out

- Some scholars refer to disinvestment as the wave of privatisation spreading all over the world to improve the performance of public sector enterprises whereas others call it as outright sale of public property to the vested interests. What do you think?
- Prepare a poster which contains 10-15 news clippings which you consider as important and relating to *navaratnas* from newspapers. Also collect the logos and advertisements of these PSUs. Put these on the notice board and discuss them in the classroom.
- Do you think only loss making companies should be privatised? Why?
- Losses incurred by public sector undertakings are to be met out of the public budget — do you agree with this statement? Discuss.

government envisaged that privatisation could provide strong impetus to the inflow of FDI.

The government has also made attempts to improve the efficiency of PSUs by giving them autonomy in taking managerial decisions. For instance, some PSUs have been granted special status as *navaratnas* and *mini ratnas* (see Box 3.1).

3.5 GLOBALISATION

Globalisation is the outcome of the policies of liberalisation and privatisation. Although globalisation is generally understood to mean integration of the economy of the country with the world economy, it is a complex phenomenon. It is an outcome of the set of various policies that are aimed at transforming the world towards greater interdependence and integration. It involves creation of networks and activities transcending economic, social and geographical boundaries. Globalisation attempts to

establish links in such a way that the happenings in India can be influenced by events happening miles away. It is turning the world into one whole or creating a borderless world.

Outsourcing: This is one of the important outcomes of the globalisation process. In outsourcing, a company hires regular service from external sources, mostly from other countries, which was previously provided internally or from within the country (like legal advice, computer service, advertisement, security — each provided by respective departments of the company). As a form of economic activity, outsourcing has intensified, in recent times, because of the growth of fast modes of communication, particularly the growth of Information Technology (IT). Many of the services such as voice-based business processes (popularly known as BPO or call centres), record keeping,



Box 3.2: Global Footprint!

Owing to globalisation, you might find many Indian companies expanding their wings to many other countries. In 2000, Tata Tea surprised the world by acquiring the UK based Tetley, the inventor of the tea bag, for Rs 1,870 crore. In the year 2004, Tata steel bought the Singapore-based Nat steel for Rs 1,245 crore and Tata Motors completed the buyout of Daewoo's heavy commercial vehicle unit in South Korea for Rs 448 crore. Now VSNL is acquiring Tyco's undersea cable network for Rs 572 crore, which will control over 60,000 km undersea cable network across three continents. The Tatas also plan to invest Rs 8,800 crore in fertiliser, steel and power plants in Bangladesh.

Source: *Business Today*, 22 May 2005.

accountancy, banking services, music recording, film editing, book transcription, clinical advice or even teaching are being outsourced by companies in developed countries to India. With the help of modern telecommunication links including the Internet, the text, voice and visual data in respect of these services is digitised and transmitted in real time over continents and national boundaries. Most multinational corporations, and even small companies, are outsourcing their

services to India where they can be availed at a cheaper cost with reasonable degree of skill and accuracy. The low wage rates and availability of skilled manpower in India have made it a destination for global outsourcing in the post-reform period.

World Trade Organisation (WTO):

The WTO was founded in 1995 as the successor organisation to the General Agreement on Trade and Tariff (GATT). GATT was established in 1948 with 23 countries as the global trade organisation to administer all **multilateral trade agreements** by providing equal opportunities to all countries in the international market for trading purposes. WTO is expected to establish a rule-based trading regime in which nations cannot place arbitrary restrictions on trade. In addition, its purpose is also to enlarge

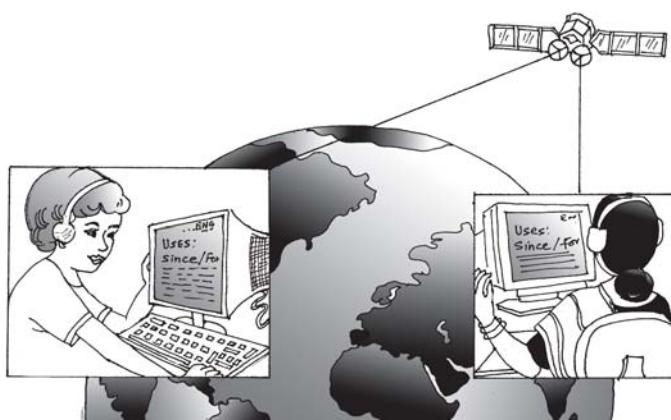


Fig. 3.1 Outsourcing: a new employment opportunity in big cities





Work These Out

- Many scholars argue that globalisation is a threat as it reduces the role of the state in many sectors. Some counter argue that it is an opportunity as it opens up markets to compete in and capture. Debate in the classroom.
- Prepare a chart consisting of a list of five companies that have BPO services in India, along with their turnover.
- Read this excerpt of a news item from a daily newspaper describing something that is now becoming increasingly common.

“On a morning, a few minutes before 7 A.M., Greeshma sat in front of her computer with her headset on and said in accented English ‘Hello, Daniella’. Seconds later, she gets the reply, ‘Hello, Greeshma’. The two chatted excitedly before Greeshma said that ‘we will work on pronouns today’. Nothing unusual about this chat except that Greeshma, 22, was in Kochi and her student Daniella, 13, was at her home in Malibu, California. Using a simulated whiteboard on their computers, connected by the Internet, and a copy of Daniella’s textbook in front of Greeshma, she guides the teenager through the intricacies of nouns, adjectives and verbs. Greeshma, who grew up speaking Malayalam, was teaching Daniella English grammar, comprehension and writing.”

- ✓ How has this become possible? Why can’t Daniella get lessons in her own country? Why is she getting English lessons from India, where English is not the mother tongue?
- ✓ India is benefiting from liberalisation and integration of world markets. Do you agree?
- Is employment in call centres sustainable? What kinds of skills should people working in call centres acquire to get a regular income?
- If the multinational companies outsource many services to countries like India because of cheap manpower, what will happen to people living in the countries where the companies are located? Discuss.

production and trade of services, to ensure optimum utilisation of world resources and to protect the environment. The WTO agreements cover trade in goods as well as services to facilitate international trade (**bilateral** and multilateral) through removal of tariff as well as **non-tariff barriers** and providing greater market access to all member countries.

As an important member of WTO, India has been in the forefront of framing fair global rules, regulations and safeguards and advocating the interests of the developing world. India has kept its commitments towards liberalisation of trade, made in the WTO, by removing quantitative restrictions on imports and reducing tariff rates.



TABLE 3.1

Growth of GDP and Major Sectors (in %)

Sector	1980-91	1992-2001	2002-07 (Tenth Plan Projected)
Agriculture	3.6	3.3	4.0
Industry	7.1	6.5	9.5
Services	6.7	8.2	9.1
GDP	5.6	6.4	8.0

Source: *Tenth Five Year Plan*

Some scholars question the usefulness of India being a member of the WTO, as a major volume of international trade occurs among the developed nations. They also say that while developed countries file complaints over agricultural subsidies given in their countries, developing countries feel cheated as they are forced to open up their markets for developed countries but are not allowed access to the markets of developed countries. What do you think?



Fig. 3.2 IT Industry is seen as a major contributor to India's exports

3.6 INDIAN ECONOMY DURING REFORMS: AN ASSESSMENT

The reform process has completed one and a half decades since its introduction. Let us now look at the performance of the Indian economy during this period. In economics, growth of an economy is measured by the Gross Domestic Product. Look at Table 3.1. The table shows the growth of GDP in different periods. The growth of GDP increased from 5.6 per cent during 1980-91 to 6.4 per cent during 1992-2001. This shows that there has been an increase in the overall GDP growth in the reform period. During the reform period, the growth of agriculture and industrial sectors has declined whereas the growth of service sector has gone up. This indicates that the growth is mainly driven by the growth in the service sector. The Tenth Plan (2002-07) has projected the GDP growth rate at 8 per cent. In order to achieve such a high growth rate, the agriculture, industrial and service sectors have to grow at the rates of 4, 9.5 and 9.1 percentage points respectively. However, some scholars raise apprehensions over the projection of such high rates of growth as unsustainable.

The opening up of the economy has led to rapid increase in foreign direct



investment and foreign exchange reserves. The foreign investment, which includes **foreign direct investment** and foreign institutional investment, has increased from about US \$ 100 million in 1990-91 to US \$ 150 billion in 2003-04. There has been an increase in the foreign exchange reserves from about US \$ 6 billion in 1990-91 to US \$ 125 billion in 2004-05. At present, India is the sixth largest foreign exchange reserve holder in the world.

India is seen as a successful exporter of auto parts, engineering goods, IT software and textiles in the

reform period. Rising prices have also been kept under control.

On the other hand, the reform process has been widely criticised for not being able to address some of the basic problems facing our economy especially in the areas of employment, agriculture, industry, infrastructure development and fiscal management.

Growth and Employment: Though the GDP growth rate has increased in the reform period, scholars point out that the reform-led growth has not generated sufficient employment



Work These Out

- In the previous chapter, you might have studied about subsidies in various sectors including agriculture. Some scholars argue that subsidy in agriculture should be removed to make the sector internationally competitive. Do you agree? If so, how can it be done? Discuss in class.
- Read the following passage and discuss in class.

Groundnut is a major oilseed crop in Andhra Pradesh. Mahadeva, who was a farmer in Anantpur district of Andhra Pradesh, used to spend Rs 1,500 for growing groundnut on his plot of half an acre. The cost included expenditure on raw materials (seeds, fertilisers etc.), labour, bullock power and machinery used. On an average, Mahadeva used to get two quintals of groundnut, and each quintal was sold for Rs 1,000. Mahadeva, thus, was spending Rs 1,500 and getting an income of Rs 2,000, Anantpur district is a drought-prone area. As a result of economic reforms, the government did not undertake any major irrigation project. Recently, groundnut crop in Anantpur is facing problems due to crop disease. Research and extension work has gone down due to lower government expenditure. Mahadeva and his friends brought this matter repeatedly to the notice of the concerned authorities, but failed. Subsidy was reduced on materials (seeds, fertilisers) which increased Mahadeva's cost of cultivation. Moreover, the local markets were flooded with cheap imported edible oils, which was a result of removal of restriction on imports. Mahadeva was not able to sell his groundnut in the market as he was not getting the price to cover his cost.

Is a farmer like Mahadeva better off after reforms? Discuss in the class.



opportunities in the country. You will study the link between different aspects of employment and growth in the next unit.

Reforms in Agriculture: Reforms have not been able to benefit agriculture, where the growth rate has been decelerating.

Public investment in agriculture sector especially in infrastructure, which includes irrigation, power, roads, market linkages and research and extension (which played a crucial role in the Green Revolution), has been reduced in the reform period. Further, the removal of fertiliser subsidy has led to increase in the cost of production, which has severely affected the small and marginal farmers. Moreover, since the commencement of WTO, this sector has been experiencing a number of policy changes such as reduction in import duties on agricultural products, removal of minimum support price and lifting of quantitative restrictions on agricultural products; these have adversely affected Indian farmers as they now have to face increased international competition.

Moreover, because of export-oriented policy strategies in agriculture, there has been a shift from production for the domestic market towards production for the export market focusing on cash crops in lieu of production of food grains. This puts pressure on prices of food grains.

Reforms in Industry: Industrial growth has also recorded a slowdown.

This is because of decreasing demand of industrial products due to various reasons such as cheaper imports, inadequate investment in infrastructure etc. In a globalised world, developing countries are compelled to open up their economies to greater flow of goods and capital from developed countries and rendering their industries vulnerable to imported goods. Cheaper imports have, thus, replaced the demand for domestic goods. Domestic manufacturers are facing competition from imports. The infrastructure facilities, including power supply, have remained inadequate due to lack of investment. Globalisation is, thus, often seen as creating conditions for the free movement of goods and services from foreign countries that adversely affect the local industries and employment opportunities in developing countries.

Moreover, a developing country like India still does not have the access to developed countries' markets because of high non-tariff barriers. For example, although all quota restrictions on exports of textiles and clothing have been removed from our side, U.S.A. has not removed their quota restriction on import of textiles from India and China!

Disinvestment: Every year, the government fixes a target for disinvestment of PSUs. For instance, in 1991-92, it was targeted to mobilise Rs 2,500 crore through disinvestment. The government was able to mobilise Rs 3,040 crore more



than the target. In 1998-99, the target was Rs 5,000 crore whereas the achievement was Rs 5,400 crore. Critics point out that the assets of PSUs have been undervalued and sold to the private sector. This means that there has been a substantial loss to the government. Moreover, the proceeds from disinvestment were used to offset the shortage of government revenues rather than using it for the development of PSUs and building social infrastructure in the country.

Reforms and Fiscal Policies: Economic reforms have placed limits on the growth of public expenditure especially in social sectors. The tax reductions in the reform period, aimed at yielding larger revenue and to curb tax evasion, have not resulted in increase in tax revenue for the government. Also, the reform policies

involving tariff reduction have curtailed the scope for raising revenue through customs duties. In order to attract foreign investment, tax incentives were provided to foreign investors which further reduced the scope for raising tax revenues. This has a negative impact on developmental and welfare expenditures.

3.7 CONCLUSION

The process of globalisation through liberalisation and privatisation policies has produced positive as well as negative results both for India and other countries. Some scholars argue that globalisation should be seen as an opportunity in terms of greater access to global markets, high technology and increased possibility of large industries of developing countries to become important players in the international arena.

Box 3.3: Siricilla Tragedy!

As a part of liberalisation, privatisation and globalisation, the government started to reform the power sector. The most important impact of these reforms has been a steep hike in power tariff. Since the powerlooms, on which a large number of industrial workers in cottage and small-scale sector depend, are driven by power energy, the impact of high tariff on them has been very serious. Further, while the power sector reforms have led to hike in tariffs, the power producers have failed in providing quality power to the powerloom industry. Since the wages of the powerloom workers are linked to the production of cloth, power-cut means cut in wages of weavers who were already suffering from hike in tariff. This led to a crisis in the livelihood of the weavers and fifty powerloom workers committed suicide in a small town called 'Siricilla' in Andhra Pradesh.

- Do you think the power tariff should not be raised?
- What would be your suggestions to improve the profitability of electricity producing companies?



On the contrary, the critics argue that globalisation is a strategy of the developed countries to expand their markets in other countries. According to them, it has compromised the welfare and identity of people belonging to poor countries. It has further been pointed out that market-driven globalisation has widened the economic disparities among nations and people.

Viewed from the Indian context, some studies have stated that the crisis that erupted in the early 1990s was basically an outcome of the deep-rooted inequalities in Indian society and the economic reform

policies initiated as a response to the crisis by the government, with externally advised policy package, further aggravated the inequalities. Further, it has increased the income and quality of consumption of only high-income groups and the growth has been concentrated only in some select areas in the services sector such as telecommunication, information technology, finance, entertainment, travel and hospitality services, real estate and trade, rather than vital sectors such as agriculture and industry which provide livelihoods to millions of people in the country.



Recap

- The economy was facing problems of declining foreign exchange, growing imports without matching rise in exports and high inflation. India changed its economic policies in 1991 due to a financial crisis and pressure from international organisations like the World Bank and IMF.
- In the domestic economy, major reforms were undertaken in the industrial and financial sectors. Major external sector reforms included foreign exchange deregulations and import liberalisation.
- With a view to improving the performance of the public sector, there was a consensus on reducing its role and opening it up to the private sector. This was done through disinvestment and liberalisation measures.
- Globalisation is the outcome of the policies of liberalisation and privatisation. It means an integration of the economy of the country with the world economy.
- Outsourcing is an emerging business activity.
- The objective of the WTO is to establish a rule based trade regime to ensure optimum utilisation of world resources.
- During the reforms, growth of agriculture and industry has gone down but the service sector has registered growth.
- Reforms have not benefited the agriculture sector. There has also been a decline in public investment in this sector.
- Industrial sector growth has slowed down due to availability of cheaper imports and lower investment.





EXERCISES

1. Why were reforms introduced in India?
2. How many countries are members of the WTO?
3. What is the most important function of RBI?
4. How was RBI controlling the commercial banks?
5. What do you understand by devaluation of rupee?
6. Distinguish between the following
 - (i) Strategic and Minority sale
 - (ii) Bilateral and Multi-lateral trade
 - (iii) Tariff and Non-tariff barriers.
7. Why are tariffs imposed?
8. What is the meaning of quantitative restrictions?
9. Those public sector undertakings which are making profits should be privatised. Do you agree with this view? Why?
10. Do you think outsourcing is good for India? Why are developed countries opposing it?
11. India has certain advantages which makes it a favourite outsourcing destination. What are these advantages?
12. Do you think the *navaratna* policy of the government helps in improving the performance of public sector undertakings in India? How?
13. What are the major factors responsible for the high growth of the service sector?
14. Agriculture sector appears to be adversely affected by the reform process. Why?
15. Why has the industrial sector performed poorly in the reform period?
16. Discuss economic reforms in India in the light of social justice and welfare.



SUGGESTED ADDITIONAL ACTIVITIES

1. The table given below shows the GDP growth rate at 1993-94 prices. You have studied about the techniques of presentation of data in your *Statistics for Economics* course. Draw a time series line graph based on the data given in the table and interpret the same.

Year	GDP Growth Rate (%)
1991-92	1.3
1992-93	5.1
1993-94	5.9
1994-95	7.3
1996-97	7.8
1997-98	4.8
1998-99	6.5
2000-01	4.4
2001-02	5.8
2002-03	4.0

2. Observe around you — you will find State Electricity Boards (SEBs), BSES and many public and private organisations supplying electricity in a city and states. There are private buses on roads along side the government bus services and so on
 - (i) What do you think about this dual system of the co-existence of public and private sectors?
 - (ii) What are the merits and demerits of such a dual system? Discuss.
3. With the help of your parents and grandparents prepare a list of multinational companies that existed in India at the time of independence. Now put a (✓) mark against those which are still growing and a () against those which do not exist any more. Are there any companies whose names have changed? Find out the new names, the country of origin, nature of product, logo and prepare a chart for your class.





4. Give appropriate examples for the following

<i>Nature of Product</i>	<i>Name of a Foreign Company</i>
Biscuits	
Shoes	
Computers	
Cars	
TV and Refrigerators	
Stationery	

Now find out if these companies which are mentioned above existed in India before 1991 or came after the New Economic Policy. For this, take the help of your teacher, parents, grandparents and shopkeepers.

5. Collect a few relevant newspaper cuttings on meetings organised by WTO. Discuss the issues debated in these meetings and find out how the organisation facilitates world trade.
6. Was it necessary for India to introduce economic reforms at the behest of World Bank and International Monetary Fund? Was there no alternative for the government to solve the balance of payments crisis? Discuss in the classroom.



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UNIT III

CURRENT CHALLENGES FACING THE
INDIAN ECONOMY

Some of the most challenging issues facing India today are poverty, development of rural India and building infrastructure. We are a billion-strong country today and our human capital is the biggest asset; it needs investment in health and education. We also need to understand the concept of employment and the need for creating more employment in our country. We will also look at the implications of development on our environment and call for sustainable development. There is a need to critically assess government initiatives in tackling all these issues each of which has been taken up separately in this unit.

4

Poverty

After studying this chapter, the learners will

- understand the various attributes of poverty
- comprehend the diverse dimensions relating to the concept of poverty
- critically appreciate the way poverty is estimated
- appreciate and be able to assess existing poverty alleviation programmes.



No society can surely be flourishing and happy, of which the far greater part of the members are poor and miserable.

Adam Smith

4.1 INTRODUCTION

In previous chapters, you have studied the economic policies that India has taken in the last five and a half decades and the outcome of these policies with relation to the various developmental indicators. Providing minimum basic needs to the people and reduction of poverty have been the major aims of independent India. The pattern of development that the successive five year plans envisaged laid emphasis on the upliftment of the poorest of the poor (*Antyodaya*), integrating the poor into the mainstream and achieving a minimum standard of living for all.

While addressing the Constituent Assembly in 1947, Jawaharlal Nehru had said, “This achievement (Independence) is but a step, an opening of opportunity, to the great triumphs and achievements that await us... the ending of poverty and ignorance and disease and inequality of opportunity.”

However we need to know where we stand today. Poverty is not only a challenge for India, as more than one-fifth of the world’s poor live in India alone; but also for the world, where more than 260 million people are not able to meet their basic needs.

Poverty has many faces, which have been changing from place to

place and across time, and has been described in many ways. Most often, poverty is a situation that people want to escape. So poverty is a call to action — for the poor and the wealthy alike — a call to change the world so that many more may have enough to eat, adequate shelter, access to education and health, protection from violence, and a voice in what happens in their communities.

To know what helps to reduce poverty, what works and what does not, what changes over time, poverty has to be defined, measured and studied — and even experienced. As poverty has many dimensions, it has to be looked at through a variety of indicators — levels of income and consumption, social indicators, and indicators of vulnerability to risks and of socio/political access.

4.2 WHO ARE THE POOR?

You would have noticed that in all localities and neighbourhoods, both in rural and urban areas, there are some of us who are poor and some who are rich. Read the story of Anu and Sudha. Their lives are examples of the two extremes (see Box 4.1). There are also people who belong to the many stages in between.

Push cart vendors, street cobblers, women who string flowers,





rag pickers, vendors and beggars are some examples of poor and vulnerable groups in urban areas. They possess few assets. They reside in *kutcha* hutments with walls made of baked mud and roofs made of grass, thatch, bamboo and wood. The poorest of them do not even have such dwellings. In rural areas many of them are landless. Even if some of them possess land, it is only dry or

waste land. Many do not get to have even two meals a day. Starvation and hunger are the key features of the poorest households. The poor lack basic literacy and skills and hence have very limited economic opportunities. Poor people also face unstable employment.

Malnutrition is alarmingly high among the poor. Ill health, disability or serious illness makes them

Box 4.1: Anu and Sudha

Anu and Sudha were both born on the same day. Anu's mother and father were construction labourers and Sudha's father was a businessman and her mother a designer.

Anu's mother worked by carrying head loads of bricks until she went into labour. She then went behind the tool shed on the construction site and delivered her baby alone. She fed her child and then wrapped her in an old sari, made a cradle with a gunny sack, put little Anu in it and hung it from a tree. She hurried back to work as she was afraid she would lose her job. She hoped that Anu would sleep until evening.

Sudha was born in one of the best nursing homes in the city. She was thoroughly checked by doctors, she was bathed and dressed in clean soft clothes and placed in a crib next to her mother. Her mother fed her whenever she was hungry, hugged and kissed her and sang her to sleep. Her family and friends celebrated her arrival.

Anu and Sudha had very different childhoods. Anu learnt to look after herself at a very early age. She knew what hunger and deprivation were. She discovered how to pick food from the dustbin, how to keep warm during the winter, to find shelter in the monsoon and how to play with a piece of string, stones and twigs. Anu could not go to school as her parents were migrant workers who kept moving from city to city in search of work.

Anu loved to dance. Whenever she heard music she would improvise. She was very beautiful and her movements were graceful and evocative. Her dream was to dance on a stage some day. Anu could have become a great dancer but she had to begin work at the age of 12. She had to earn a living with her mother and father, building houses for the rich. Houses, she would never live in.

Sudha went to a very good play school where she learnt how to read, write and count. She went on excursions to the planetarium, museum and national parks. She later went to a very good school. She loved painting and started getting private lessons from a famous artist. She later joined a design school and became a well known painter.





physically weak. They borrow from money lenders who charge high rates of interest that lead them into chronic indebtedness. The poor are highly vulnerable. They are not able to negotiate their legal wages from employers and are exploited. Most poor households have no access to electricity. Their primary cooking fuel is firewood and cow dung cake. A large section of poor people do not even have access to safe drinking water. There is evidence of extreme gender inequality in the participation of gainful employment, education and in decision-making within the family. Poor women receive less care on their way to motherhood. Their children are less likely to survive or be born healthy.



Fig. 4.2 Many poor families live in kutcha houses

Scholars identify the poor on the basis of their occupation and ownership of assets. They state that the rural poor work mainly as landless agricultural labourers, cultivators with very small landholdings, landless labourers who are engaged in a variety of non-agricultural jobs and tenant cultivators with small land holdings.

The urban poor are largely the overflow of the rural poor who had migrated to urban areas in search of alternative employment and livelihood, labourers who do a variety of casual jobs and the self-employed who sell a variety of things on roadsides and are engaged in various activities.



Fig. 4.1 Majority of agricultural labourers are poor





Box 4.2 : What is Poverty?

Two scholars, Shaheen Rafi Khan and Damian Killen, put the conditions of the poor in a nutshell: Poverty is hunger. Poverty is being sick and not being able to see a doctor. Poverty is not being able to go to school and not knowing how to read. Poverty is not having a job. Poverty is fear for the future, having food once in a day. Poverty is losing a child to illness, brought about by unclear water. Poverty is powerlessness, lack of representation and freedom.

What do you think?

4.3 HOW ARE POOR PEOPLE IDENTIFIED?

If India is to solve the problem of poverty, it has to find viable and sustainable strategies to address the causes of poverty and design schemes to help the poor out of their situation. However, for these schemes to be implemented, the government needs to be able to identify who the poor are. For this there is need to develop a scale to measure poverty, and the factors that make up the criteria for this measurement or mechanism need to be carefully chosen.

In pre-independent India, Dadabhai Naoroji was the first to discuss the concept of a Poverty Line. He used the menu for a prisoner and used appropriate prevailing prices to arrive at what may be called 'jail cost of living'. However, only adults stay in jail whereas, in an actual society, there are children too. He, therefore, appropriately adjusted this cost of living to arrive at the poverty line.

For this adjustment, he assumed that one-third population consisted of children and half of them consumed very little while the other half consumed half of the adult diet. This is how he arrived at the factor of three-fourths; $(1/6)(\text{Nil}) + (1/6)(\text{Half}) + (2/3)(\text{Full}) = (3/4)(\text{Full})$. The weighted average of consumption of the three segments gives the average poverty line, which comes out to be three-fourth of the adult jail cost of living.

In post-independent India, there have been several attempts to work out a mechanism to identify the number of poor in the country. For instance, in 1962, the Planning Commission formed a Study Group. In 1979, another body called the 'Task Force on Projections of Minimum Needs and Effective Consumption Demand' was formed. In 1989, an 'Expert Group' was constituted for the same purpose.

Chart 4.1: Poverty Line





Besides these bodies, many individual economists have also attempted to develop such a mechanism.

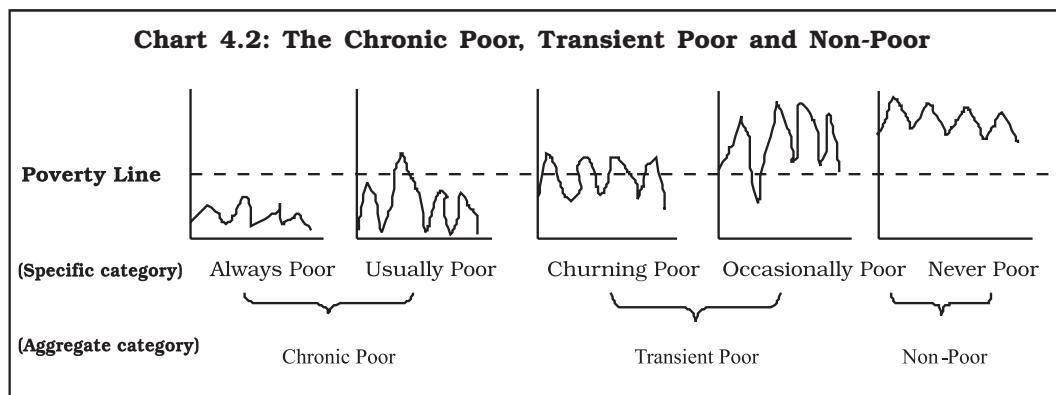
For the purpose of defining poverty we divide people into two categories; the poor and the non-poor and the poverty line separates the two. However, there are many kinds of poor; the absolutely poor, the very poor and the poor. Similarly there are various kinds of non-poor; the middle class, the upper middle class, the rich, the very rich and the absolutely rich. Think of this as a line or continuum from the very poor to the absolutely rich with the poverty line dividing the poor from the non-poor.

Categorising Poverty: There are many ways to categorise poverty. In one such way people who are **always poor** and those who are **usually poor** but who may sometimes have a little more money (example: casual workers) are grouped together as the **chronic poor**. Another group are the **churning poor** who regularly move in and out of

poverty (example: small farmers and seasonal workers) and the **occasionally poor** who are rich most of the time but may sometimes have a patch of bad luck. They are called the **transient poor**. And then there are those who are **never poor** and they are the **non-poor** (Chart 4.2).

The Poverty Line: Now let us examine how to determine the poverty line. There are many ways of measuring poverty. One way is to determine it by the monetary value (per capita expenditure) of the minimum calorie intake that was estimated at 2,400 calories for a rural person and 2,100 for a person in the urban area. Based on this, in 1999-2000, the poverty line was defined for rural areas as consumption worth Rs 328 per person a month and for urban areas it was Rs 454.

Though the government uses Monthly Per Capita Expenditure (MPCE) as proxy for income of households to identify the poor, do you think this mechanism satisfactorily identifies the poor households in our country?



Scholars state that a major problem with this mechanism is that it groups all the poor together and does not differentiate between the very poor and the other poor. Though this mechanism takes consumption expenditure on food and a few select items as proxy for income, economists question its basis. This mechanism is helpful in identifying the poor as a group to be taken care of by the government, but it would be difficult to identify who among the poor need help the most.

There are many factors, other than income and assets, which are associated with poverty; for instance, the accessibility to basic education, health care, drinking water and sanitation. The mechanism for determining the Poverty Line also does not take into consideration social factors that trigger and perpetuate poverty such as illiteracy, ill health, lack of access to resources, discrimination or lack of civil and political freedoms. The aim of poverty alleviation schemes should be to improve human lives by expanding the range of things that a person could be and could do, such as to be healthy and well-nourished, to be knowledgeable and participate in the life of a community. From this point of view, development is about removing the obstacles to the things that a person can do in life, such as illiteracy, ill health, lack of access to resources, or lack of civil and political freedoms.

Though the government claims that higher rate of growth, increase in



Fig. 4.3 Safe drinking water and sanitation are essential for all

agricultural production, providing employment in rural areas and economic reform packages introduced in the 1990s have resulted in a decline in poverty levels, economists raise doubts about the government's claim. They point out that the way the data are collected, items that are included in the consumption basket, methodology followed to estimate the poverty line and the number of poor are manipulated to arrive at the reduced figures of the number of poor in India.

Due to various limitations in the official estimation of poverty, scholars have attempted to find alternative methods. For instance, Amartya Sen, noted Nobel Laureate, has developed an index known as Sen Index. There are other tools such as Poverty Gap Index and Squared Poverty Gap. You will learn about these tools in higher classes.



Work These Out

- In Sections 4.2 and 4.3, you will notice that the poor are identified not only with income and expenditure related indicators but also with many other items such as access to land, housing, education, health, sanitation. Also to be considered is discriminatory practices. Discuss how an alternative poverty line could be constructed in such a way that it includes all the other indicators.
- On the basis of the given definition for poverty line, find out whether people who work as domestic help, *dhobies* and newspaper vendors etc. in your locality/neighbourhood are above the poverty line or not.

4.4 THE NUMBER OF POOR IN INDIA

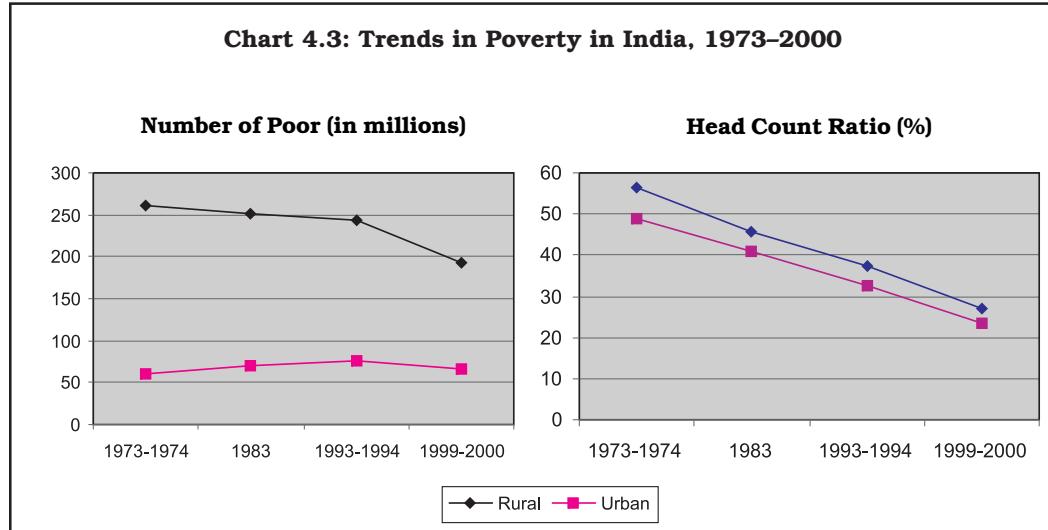
When the number of poor is estimated as the proportion of people below the poverty line, it is known as 'Head Count Ratio'.

You might be interested in knowing the total number of poor persons residing in India. Where do they reside and has their number or proportion declined over the years or not? When such a comparative analysis of poor people is made

in terms of ratios and percentages, we will have an idea of different levels of poverty of people and their distribution; between states and over time.

The official data on poverty is made available to the public by the Planning Commission. It is estimated on the basis of consumption expenditure data collected by the National Sample Survey Organisation (NSSO). Chart 4.3 shows the number of poor and their

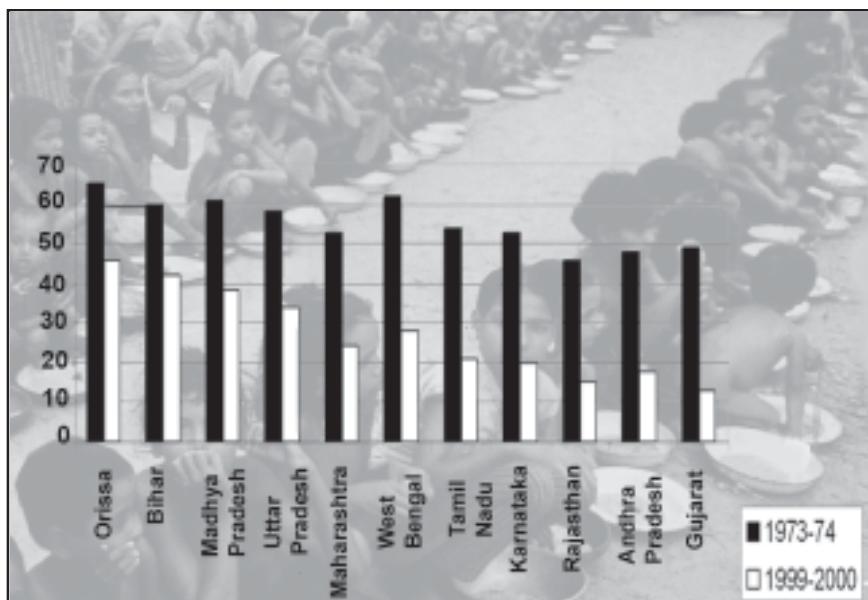
Chart 4.3: Trends in Poverty in India, 1973–2000



proportion to the population in India for the years 1973-2000. In 1973-74, more than 321 million people were below the poverty line. In 1999-2000, this number has come down to about 260 million. In terms of proportion, in 1973-74, about 55 per cent of the total population was below the poverty line. In 1999-2000, it has fallen to 26 per cent. In 1973-74, more than 80 per cent of the poor resided in rural areas and in 1999-2000, this has come down to about 75 per cent. This means that more than three-fourth of the poor in India reside in villages. Also poverty, which was prevailing predominantly in rural areas, has shifted to urban areas.

In the 1990s, the absolute number of poor in rural areas had declined whereas the number of their urban counterparts increased marginally. The poverty ratio declined continuously for both urban and rural areas. From Chart 4.3, you will notice that during 1973-2000, there has been a decline in the number of poor and their proportion but the nature of decline in the two parameters is not encouraging. The ratio is declining much slower than the absolute number of poor in the country. You will also notice that the gap between the absolute number of poor in rural and urban areas did not narrow down until the early 1990s whereas in the case of

Chart 4.4: Population Below Poverty Line in Some Large States, 1973-2000 (%)



Note: Uttar Pradesh includes the present Uttaranchal; Madhya Pradesh includes Chhattisgarh and Bihar includes Jharkhand



ratio the gap has remained the same until 1999-2000.

The state level trends in poverty are shown in Chart 4.4. It reveals that five states — Uttar Pradesh, Bihar, Madhya Pradesh, West Bengal and Orissa — account for about 70 per cent of India's poor. You will also notice that during 1973-74, about half the population in most of these large states was living below the poverty line. In 1999-2000, only two states — Bihar and Orissa — were left near that same level. Though they also reduced their share of poor, compared to other states, their success is marginal. If we look at Gujarat, it reduced its people below the poverty line from 48 per cent to 15 per cent during 1973-2000. During this period, West Bengal has been just as successful; from nearly two-third, i.e. 63 per cent of the population below the poverty line the same was reduced to about 27 per cent.

4.5 WHAT CAUSES POVERTY?

Poverty is explained by individual circumstances and/or characteristics of poor people. Some examples are (i) low levels of education and skills (ii) infirmity, ill health, sickness (iii) discrimination. These can be caused as a result of (i) social, economic and political inequality (ii) social exclusion (iii) unemployment (iv) indebtedness (v) unequal distribution of wealth. Aggregate poverty is just the sum of individual poverty. Poverty is also explained by general, economy-wide

problems, such as (i) low capital formation (ii) lack of infrastructure (iii) lack of demand (iv) pressure of population (v) lack of social/welfare nets.

In Chapter 1 you have read about the British rule in India. Although the final impact of the British rule on Indian living standards is still being debated, there is no doubt that there was a substantial negative impact on the Indian economy and standard of living of the people. There was substantial de-industrialisation in India under the British rule. Imports of manufactured cotton cloth from Lancashire in England displaced much local production, and India reverted to being an exporter of cotton yarn, not cloth.

As over 70 per cent of Indians were engaged in agriculture throughout the British Raj period, the impact on that sector was more important on living standards than anything else. British policies involved sharply raising rural taxes that enabled merchants and moneylenders to become large landowners. Under the British, India began to export food grains and, as a result, as many as 26 million people died in famines between 1875 and 1900.

Britain's main goals from the Raj were to provide a market for British exports, to have India service its debt payments to Britain, and for India to provide manpower for the British imperial armies.



The British Raj impoverished millions of people in India. Our natural resources were plundered, our industries worked to produce goods at low prices for the British and our food grains were exported. Many died due to famine and hunger. In 1857-58, anger at the overthrow of many local leaders, extremely high taxes imposed on peasants, and other resentments boiled over in a revolt against British rule by the *sepoy*s, Indian troops commanded by the British.

Even today agriculture is the principal means of livelihood and land is the primary asset of rural people; ownership of land is an important determinant of material well-being and those who own some land have a better chance to improve their living conditions.

Since independence, the government has attempted to redistribute land and has taken land from those who have large amounts to distribute it to those who do not have any land, but work on the land as wage labourers. However, this move was successful only to a limited extent as large sections of agricultural workers were not able to farm the small holdings that they now possessed as they did not have either money (assets) or skills to make the land productive and the land holdings were too small to be viable.

A large section of the rural poor in India are the small farmers. The



Fig. 4.4 Low quality self-employment sustains poverty

land that they have is, in general, less fertile and dependent on rains. Their survival depends on subsistence crops and sometimes on livestock. With the rapid growth of population and without alternative sources of employment, the per-head availability of land for cultivation has steadily declined leading to fragmentation of land holdings. The income from these small land holdings is not sufficient to meet the family's basic requirements.

You must have heard about farmers committing suicide due to their inability to pay back the loans that they have taken for cultivation and other domestic needs as their crops have failed due to drought or other natural calamities (see Box 4.3).

The scheduled castes and scheduled tribes are not able to participate in the emerging employment opportunities in different sectors of the



Fig. 4.5 Quality employment is still a dream for the poor

urban and rural economy as they do not have the necessary knowledge and skills to do so.

The urban poor in India are largely the overflow of the rural poor who migrate to urban areas in search of employment and a livelihood. Industrialisation has not been able

to absorb all these people. Most of the urban poor are either unemployed or intermittently employed as casual labourers. Casual labourers are among the most vulnerable in society as they have no job security, no assets, limited skills, sparse opportunities and no surplus to sustain them.

Poverty is, therefore, also closely related to nature of employment. Unemployment or under employment and the casual and intermittent nature of work in both rural and urban areas that compels indebtedness, in turn, reinforces poverty. Indebtedness is one of the significant factors of poverty.

A steep rise in the price of food grains and other essential goods, at



Work These Out

- When you go to the market, or visit religious places and historical monuments you may often find women begging with their children. Spare a few moments and speak to a few of them. Collect details about what made them to take up this activity, where they live with their family members, number of meals they are able to consume in a day, whether they possess any physical assets and why they could not take up a job. Discuss the details that you have collected in the classroom.
- You will notice many poor households as described above in your own locality or neighbourhood. Choose two or three such households and develop their family profile which can include the details of occupation, literacy level, ownership of assets and other information. Discuss them in class.
- List the activities of people in rural and urban areas separately. You may also list the activities of the non-poor. Compare the two and discuss in the classroom why the poor are unable to take up such activities.



Box 4.3: Distress Among Cotton Farmers

Many small land owning farmers and farming households and weavers are descending into poverty due to globalisation related shock and lack of perceived income earning opportunities in relatively well performing states in India. Where households have been able to sell assets, or borrow, or generate income from alternative employment opportunities, the impact of such shocks may be transient. However, if the household has no assets to sell or no access to credit, or is able to borrow only at exploitative rates of interest and gets into a severe debt trap, the shocks can have long duration ramification in terms of pushing households below the poverty line. The worst form of this crisis is suicides. The count reached 3,000 in Andhra Pradesh alone and is rising. In December 2005, the Maharashtra government admitted that over 1,000 farmers have committed suicides in the state since 2001.

India has the largest area under cotton cultivation in the world covering 8,300 hectares in 2002–03. The low yield of 300 kg per hectare pushes it into third position in production. High production costs, low and unstable yields, decline in world prices, global glut in production due to subsidies by the U.S.A. and other countries, and opening up of the domestic market due to globalisation have increased the exposure of farmers and led to agrarian distress and suicides especially in the cotton belt of Andhra Pradesh and Maharashtra. The issue is not one of profits and higher returns but that of the livelihood and survival of millions of small and marginal farmers who are dependent on agriculture.

Scholars cite several factors that have led farmers to commit suicides (i) the shift from traditional farming to the farming of high yielding commercial crops without adequate technical support combined with withdrawal of the state in the area of agricultural extension services in providing counselling on farm technologies, problems faced, immediate remedial steps and lack of timely advice to farmers (ii) decline in public investment in agriculture in the last two decades (iii) low rates of germination of seeds provided by large global firms, spurious seeds and pesticides by private agents (iv) crop failure, pest attack and drought (v) debt at very high interest rate of 36 per cent to 120 per cent from private money lenders (vi) cheap imports leading to decline in pricing and profits (vii) lack of access to water for crops which forced the farmers to borrow money at exorbitant rates of interest to sink borewells that failed.

Sources: Excerpted from A.K. Mehta and Sourabh Ghosh assisted by Ritu Elwadhi, "Globalisation, Loss of Livelihoods and Entry into Poverty," Alternative Economic Survey, India 2004-2005, Alternative Survey Group, Daanish Books, Delhi 2005 and P. Sainath, The swelling 'Register of Deaths', The Hindu, 29 December 2005.



Shantabai, wife of Neelakanta Sitaram Khoke who committed suicide in Yavatma, Maharashtra



a rate higher than the price of luxury goods, further intensifies the hardship and deprivation of lower income groups. The unequal distribution of income and assets has also led to the persistence of poverty in India.

All this has created two distinct groups in society: those who possess the means of production and earn good incomes and those who have only their labour to trade for survival. Over the years, the gap between the rich and the poor in India has widened. Poverty is a multi-dimensional challenge for India that needs to be addressed on a war footing.

4.6 POLICIES AND PROGRAMMES TOWARDS POVERTY ALLEVIATION

The Indian Constitution and five year plans state social justice as the primary objective of the developmental strategies of the government. To quote the First Five Year Plan (1951-56), “the urge to bring economic and social change under present conditions comes from the fact of poverty and inequalities in income, wealth and opportunity”. The Second Five Year Plan (1956-61) also pointed out that “the benefits of economic development must accrue more and more to the relatively less privileged classes of society”. One can find, in all policy documents, emphasis being laid on poverty alleviation and that various strategies need to be adopted by the government for the same.

The government's approach to poverty reduction was of three dimensions. The first one is growth-oriented approach. It is based on the expectation that the effects of economic growth — rapid increase in gross domestic product and per capita income — would spread to all sections of society and will trickle down to the poor sections also. This was the major focus of planning in the 1950s and early 1960s. It was felt that rapid industrial development and transformation of agriculture through green revolution in select regions would benefit the underdeveloped regions and the more backward sections of the community. You must have read in Chapters 2 and 3 that the overall growth and growth of agriculture and industry have not been impressive. Population growth has resulted in a very low growth in per capita incomes. The gap between poor and rich has actually widened. The Green Revolution exacerbated the disparities regionally and between large and small farmers. There was unwillingness and inability to redistribute land. Economists state that the benefits of economic growth have not trickled down to the poor.

While looking for alternatives to specifically address the poor, policy makers started thinking that incomes and employment for the poor could be raised through the creation of incremental assets and by means of work generation. This could be achieved through specific





Fig. 4.6 Wage employment under 'food for work' programme

poverty alleviation programmes. This second approach has been initiated from the Third Five Year Plan (1961-66) and progressively enlarged since then. One of the noted programmes initiated in the 1970s was Food for Work.

The programmes that are being implemented now are based on the perspective of the Tenth Five Year Plan (2002-2007). Expanding self-employment programmes and wage employment programmes are being considered as the major ways of addressing poverty. Examples of self-employment programmes are Rural Employment Generation Programme (REGP), Prime Minister's *Rozgar Yojana* (PMRY) and *Swarna Jayanti*

Shahari Rozgar Yojana (SJSRY). The first programme aims at creating self-employment opportunities in rural areas and small towns. The Khadi and Village Industries Commission is implementing it. Under this programme, one can get financial assistance in the form of bank loans to set up small industries. The educated unemployed from low-income families in rural and urban areas can get financial help to set up any kind of enterprise that generates employment under PMRY. SJSRY mainly aims at creating employment opportunities—both self-employment and wage employment—in urban areas.

Earlier, under self-employment programmes, financial assistance was given to families or individuals. Since



the 1990s, this approach has been changed. Now those who wish to benefit from these programmes are encouraged to form self-help groups. Initially they are encouraged to save some money and lend among themselves as small loans. Later, through banks, the government provides partial financial assistance to SHGs which then decide whom the loan is to be given to for self-employment activities. *Swarnajayanti Gram Swarozgar Yojana* (SGSY) is one such programme.

The government has a variety of programmes to generate wage employment for the poor unskilled people living in rural areas. Some of them are National Food for Work Programme (NFWP) and *Sampoorna Grameen Rozgar Yojana* (SGRY). In August 2005, the Parliament has passed a new Act to provide guaranteed wage employment to every household whose adult volunteer is to do unskilled manual work for a minimum of 100 days in a year. This Act is known as National Rural Employment Guarantee Act-2005. Under this Act all those among the poor who are ready to work at the minimum wage can report for work in areas where this programme is implemented.

The third approach to addressing poverty is to provide minimum basic amenities to the people. India was among the pioneers in the world to envisage that through public expenditure on social consumption needs — provision of food grains at subsidised rates, education, health,

water supply and sanitation—people's living standard could be improved. Programmes under this approach are expected to supplement the consumption of the poor, create employment opportunities and bring about improvements in health and education. One can trace this approach from the Fifth Five Year Plan, "even with expanded employment opportunities, the poor will not be able to buy for themselves all the essential goods and services. They have to be supplemented up to at least certain minimum standards by social consumption and investment in the form of essential food grains, education, health, nutrition, drinking water, housing, communications and electricity." Three major programmes that aim at improving the food and nutritional status of the poor are Public Distribution System, Integrated Child Development Scheme and Midday Meal Scheme. *Pradhan Mantri Gram Sadak Yojana*, *Pradhan Mantri Gramodaya Yojana*, *Valmiki Ambedkar Awas Yojana* are also attempts in the same direction. It may be essential to briefly state that India has achieved satisfactory progress in many aspects.

The government also has a variety of other social security programmes to help a few specific groups. National Social Assistance Programme is one such programme initiated by the central government. Under this programme, elderly people who do not have anyone to take care of them are given pension to sustain themselves. Poor women who are





Work These Out

- Discuss and then develop a list of three employment opportunities that can arise in coastal areas, deserts, hilly tribal areas, tribal areas under : (i) Food for Work Programme and (ii) self-employment.
- Many policy documents, five year plan documents, economic surveys are available in the website of Planning Commission (www.planningcommission.nic.in). Some of them could be available in your school or public library also. In these documents, the initiatives taken by the government and their evaluation are available. Read a few of them and discuss in the classroom.
- In your area or neighbourhood, you will find developmental works such as laying of roads, construction of buildings in government hospitals, government schools etc. Visit such sites and prepare a two-three page report on the nature of work, how many people are getting employed, wages paid to the labourers etc.
- You will also notice some poor women — widows, destitutes, elderly people — receiving social security assistance. Develop profiles of a few such persons. A profile can have their personal information, how they received assistance, the nature of assistance, whether it is sufficient or not and what are the activities they undertake.

destitute and widows are also covered under this scheme.

4.7 POVERTY ALLEVIATION PROGRAMMES — A CRITICAL ASSESSMENT

Efforts at poverty alleviation have borne fruit in that for the first time since independence, the percentage of absolute poor in some states is now well below the national average. Despite a variety of approaches, programmes and schemes to alleviate poverty; hunger, malnourishment, illiteracy and lack of basic amenities continue to be a common feature in many parts of India. Though the policy towards poverty alleviation has evolved in a progressive manner,

over the last five and a half decades, it has not undergone any radical transformation. You can find change in nomenclature, integration or mutations of programmes. However, none resulted in any radical change in the ownership of assets, process of production and improvement of basic amenities to the needy. Scholars, while assessing these programmes, state three major areas of concern which prevent their successful implementation. Due to unequal distribution of land and other assets, the benefits from direct poverty alleviation programmes have been appropriated by the non-poor. Compared to the magnitude of poverty, the amount of resources



Box 4.4: Ramdas Korwa's Road to Nowhere

Somehow, Ramdas Korwa of Rachketha village was not overjoyed to learn that he was worth Rs 17.44 lakh to the government. Late in 1993, the authorities decided to lay a three km road leading to Rachketha village in the name of tribal development by allocating Rs 17.44 lakh towards the project.

Tribals constitute a 55 per cent majority in Surguja, one of India's poorest districts. And the Pahadi or Hill Korwas, who have been listed as a primitive tribe by the government, fall in the bottom 5 per cent. Special efforts are underway for their development which often involves large sums of money. Just one centrally funded scheme, the Pahadi Korwa project, is worth Rs 42 crores over a five-year period.

There are around 15,000 Pahadi Korwas, the largest number of these in Surguja. However, for political reasons, the main base of the project is in Raigad district. There was just one small problem about building the Pahadi Korwa Marg in Rachketha—the village is almost completely devoid of Pahadi Korwas. Ramdas's family is the only real exception.

'It doesn't matter if these don't benefit the Pahadi Korwas in the least and are completely useless. Out here, even if you put up a swimming pool and a bungalow, you do it in the name of tribal development,' says an NGO activist. 'Nobody bothered to check whether there were really any Pahadi Korwas living in Rachketha village' and 'there was already a *kutcha* road here,' says Ramavtar Korwa, son of Ramdas. 'They just added *lal mitti* (red earth) to it. Even today, after spending Rs 17.44 lakh, it is not a *pucca* road.'

Ramdas's own demands are touchingly simple. 'All I want is a little water,' he says. 'How can we have agriculture without water?' When repeatedly pressed, he adds: 'Instead of spending Rs 17.44 lakh on that road, if they had spent a few thousand on improving that damaged well on my land, wouldn't that have been better? Some improvement in the land is also necessary, but let them start by giving us a little water.'

Ramdas's problems were ignored. The government's problem was 'fulfilling a target'. 'If the money were simply put into bank fixed deposits, none of these Pahadi Korwa families would ever have to work again. The interest alone would make them very well off by Surguja's standards', says an official mockingly.

Nobody thought of asking Ramdas what he really needed, what his problems were, or involving him in their solution. Instead, in his name, they built a road he does not use, at a cost of Rs 17.44 lakh. 'Please do something about my water problem, sir,' says Ramdas Korwa as we set off across the plain, journeying two km to reach his road to nowhere.

Source: Excerpted from P. Sainath, 1996, *Everybody Loves a Good Drought: Stories from India's Poorest Districts*, Penguin Books, New Delhi.





Fig. 4.7 Scrap collector: mismanagement of employment planning forces people to take up very low paying jobs

allocated for these programmes is not sufficient. Moreover, these programmes depend mainly on government and bank officials for their implementation. Since such officials are ill motivated, inadequately trained, corruption prone and vulnerable to pressure from a variety of local elites, the resources are inefficiently used and wasted. There is also non-participation of local level institutions in programme implementation.

Government policies have also failed to address the vast majority of vulnerable people who are living on

or just above the poverty line. It also reveals that high growth alone is not sufficient to reduce poverty. Without the active participation of the poor, successful implementation of any programme is not possible. Poverty can effectively be eradicated only when the poor start contributing to growth by their active involvement in the growth process. This is possible through a process of social mobilisation, encouraging poor people to participate and get them empowered. This will also help create employment opportunities which may lead to increase in levels of income, skill development, health and literacy. Moreover, it is necessary to identify poverty stricken areas and provide infrastructure such as schools, roads, power, telecom, IT services, training institutions etc.

4.8 CONCLUSION

We have travelled about six decades since independence. The objective of all our policies had been stated as promoting rapid and balanced economic development with equality and social justice. Poverty alleviation has always been accepted as one of India's main challenges by the policy makers, regardless of which government was in power. The absolute number of poor in the country has gone down and some states have less proportion of poor than even the national average. Yet, critics point out that even though vast resources have been allocated and spent, we are still far from reaching the goal.



There is improvement in terms of per capita income and average standard of living; some progress towards meeting the basic needs has been made. But when compared to the progress made by many other countries, our performance has not been impressive. Moreover, the fruits of development have not reached all

sections of the population. Some sections of people, some sectors of the economy, some regions of the country can compete even with developed countries in terms of social and economic development, yet, there are many others who have not been able to come out of the vicious circle of poverty.



Recap

- Reducing poverty has been one of the major objectives of India's developmental strategies.
- The per capita consumption expenditure level which meets the average per capita daily requirement of 2,400 calories in rural areas and 2,100 calories in urban areas, along with a minimum of non-food expenditure, is called poverty line or absolute poverty.
- When the number of poor and their proportion is compared, we will have an idea of different levels of poverty of people and their distribution between states and over time.
- The number of poor in India and their proportion to total population has declined substantially. For the first time in the 1990s, the absolute number of poor has declined.
- Majority of poor are residing in rural areas and engage themselves in casual and unskilled jobs.
- Income and expenditure oriented approaches do not take into account many other attributes of the poor people.
- Over the years, the government has been following three approaches to reduce poverty in India: growth oriented development, specific poverty alleviation programmes and meeting the minimum needs of the poor.
- Government initiatives are yet to transform the ownership of assets, processes of production and meet the basic amenities of the poor.





EXERCISES

1. Define poverty.
2. What is meant by 'Food for Work' programme?
3. State an example each of self employment in rural and urban areas.
4. How can creation of income earning assets address the problem of poverty?
5. Briefly explain the three dimensional attack on poverty adopted by the government.
6. What programmes has the government adopted to help the elderly people and poor and destitute women?
7. Is there any relationship between unemployment and poverty? Explain.
8. What is the difference between relative and absolute poverty?
9. Suppose you are from a poor family and you wish to get help from the government to set up a petty shop. Under which scheme will you apply for assistance and why?
10. Illustrate the difference between rural and urban poverty. Is it correct to say that poverty has shifted from rural to urban areas? Use the trends in poverty ratio to support your answer.
11. Explain the concept of relative poverty with the help of the population below poverty line in some states of India.
12. Suppose you are a resident of a village, suggest a few measures to tackle the problem of poverty.



SUGGESTED ADDITIONAL ACTIVITIES

1. Collect data from 30 persons of your locality regarding their daily consumption of various commodities. Then rank the persons on the basis of relatively better off and worse, to get the degree of relative poverty.





2. Collect information and fill in the following table with the amount of money spent in terms of rupees by four low income families on various commodities. Analyse the research and find out which family is relatively poor in comparison to the other families. Also find out who are absolutely poor if the poverty line is fixed at an expenditure of Rs 500 per month per person.

<i>Commodities</i>	<i>Family A</i>	<i>Family B</i>	<i>Family C</i>	<i>Family D</i>
Wheat/Rice				
Vegetable Oil				
Sugar				
Electricity/ Lighting				
Ghee				
Clothes				
House Rent				

2. The following table shows the average monthly expenditure per person on items of consumption in India and Delhi slums in terms of percentage. 'Rice and wheat' in rural areas at 25 per cent means that for every 100 rupees spent, Rs 25 goes towards the purchase of rice and wheat alone. Read the table further and answer the questions that follow.

<i>Items</i>	<i>Rural</i>	<i>Urban</i>	<i>Delhi Slums</i>
Rice and wheat	25.0	35.9	28.7
Pulses and their products	5.7	6.1	9.9
Milk and milk products	17.4	14.1	10.3
Vegetables and fruits	15.1	12.7	19.6
Meat, fish and eggs	6.3	5.3	13.1
Sugar	3.3	3.8	4.0
Salt and spices	10.8	10.8	8.1
Other food items	16.5	11.3	6.4
Total: All food	100	100	100
Expenditure on food items as a % of all items	62.9	72.2	72.8

- Compare the percentage of expenditure on food items among different groups and their priorities.
- Do you think households in slums are depending more on cereals and pulses?
- On which item do people living in different areas spend the least? Compare them.
- Do you think that slum dwellers have given more emphasis to meat, fish and eggs?





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5

HUMAN CAPITAL FORMATION IN INDIA

After studying this chapter, the learners will

- understand the concepts of Human Resources, Human Capital Formation and Human Development
- have understood the links between investment in human capital, economic growth and human development
- have understood the need for government spending on education and health
- have learnt about the state of India's educational attainment.

“... the wisdom of expending public and private funds on education is not to be measured by its direct fruits alone. It will be profitable as a mere investment, to give the masses of people much greater opportunities than they can generally avail themselves of. For by this means many, who would have died unknown, are enabled to get the start needed for bringing out their latent abilities”.

Alfred Marshall

5.1 INTRODUCTION

Think of one factor that has made a great difference in the evolution of mankind. Perhaps it is man's capacity to store and transmit knowledge which he has been doing through conversation, through songs and through elaborate lectures. But man soon found out that we need a good deal of training and skill to do things efficiently. We know that the labour skill of an educated person is more than that of an uneducated person and hence the former is able to generate

more income than the latter and his contribution to economic growth is, consequently, more.

Education is sought not only as it confers higher earning capacity on people but also for its other highly valued benefits: it gives one a better social standing and pride; it enables one to make better choices in life; it provides knowledge to understand the changes taking place in society; it also stimulates innovations. Moreover, the availability of educated labour force facilitates adaptation of new



Fig. 5.1 Adequate education and training to farmers can raise productivity in farms



technologies. Economists have stressed the need for expanding educational opportunities in a nation as it accelerates the development process.

5.2 WHAT IS HUMAN CAPITAL?

Just as a country can turn physical resources like land into physical capital like factories, similarly, it can also turn human resources like students into human capital like engineers and doctors. Societies need sufficient human capital in the first place—in the form of competent people who have themselves been educated and trained as professors and other professionals. In other words, we need good human capital to produce other human capital (say, doctors, engineers...). This means that we need investment in human capital to produce more human capital out of human resources.

Let us understand a little more of what human capital means by posing the following questions :

- (i) What are the sources of human capital?
- (ii) Is there any relation between human capital and economic growth of a country?
- (iii) Is the formation of human capital linked to man's all-round development or, as it is now called, human development?
- (iv) What role can the government play in human capital formation in India?

5.3 SOURCES OF HUMAN CAPITAL

Investment in education is considered as one of the main sources of human capital. There are several other sources as well. Investments in health, on-the-job training, migration and information are the other sources of human capital formation.

Why do your parents spend money on education? Spending on education



Work This Out

- Take three families from different strata (i) very poor (ii) middle class and (iii) affluent. Study the expenditure pattern of the families on education of male and female children.

by individuals is similar to spending on capital goods by companies with the objective of increasing future profits over a period of time. Likewise, individuals invest in education with the objective of increasing their future income.

Like education, health is also considered as an important input for the development of a nation as much as it is important for the development of an individual.

Who can work better—a sick person or a person with sound health? A sick labourer without access to medical facilities is compelled to abstain from work and there is loss of productivity. Hence, expenditure on health is an important source of human capital formation.





Preventive medicine (vaccination), **curative medicine** (medical intervention during illness), **social medicine** (spread of health literacy) and provision of clean drinking water and good sanitation

are the various forms of health expenditures. Health expenditure directly increases the supply of healthy labour force and is, thus, a source of human capital formation.



in the firm itself under the supervision of a skilled worker; two, the workers may be sent for off-campus training. In both these cases firms incur some expenses. Firms will, thus, insist that the workers should work for a specific period of time, after their on-the-job training, during which it can recover the benefits of the enhanced productivity owing to the training. Expenditure regarding on-the-job training is a source of human capital formation as the return of such expenditure in the form of enhanced labour productivity is more than the cost of it.

People **migrate** in search of jobs that fetch them higher salaries than what they may get in their native



places. Unemployment is the reason for the rural-urban migration in India. Technically qualified persons, like engineers and doctors, migrate to other countries because of higher salaries that they may get in such countries. Migration in both these cases involves cost of transport, higher cost of living in the migrated places and psychic costs of living in a strange socio-cultural setup. The enhanced earnings in the new place outweigh the costs of migration; hence, expenditure on migration is also a source of human capital formation.

People spend to acquire **information** relating to the labour market and other markets like education and health. For example, people want to know the level of salaries associated with various types of jobs, whether the educational institutions provide the right type of employable skills and at what cost. This information is necessary to make decisions regarding investments in human capital as well as for efficient utilisation of the acquired human capital stock. Expenditure incurred for acquiring information relating to the labour market and other markets is also a source of human capital formation.



Box 5.1: Physical and Human Capital

Both the forms of capital formation are outcomes of conscious investment decisions. Decision regarding investment in physical capital is taken on the basis of one's knowledge in this regard. The entrepreneur possesses knowledge to calculate the expected rates of return to a range of investments and then rationally decides which one of the investments should be made. The ownership of physical capital is the outcome of the conscious decision of the owner — the physical capital formation is mainly an economic and technical process. A substantial part of the human capital formation takes place in one's life when she/he is unable to decide whether it would maximise her/his earnings. Children are given different types of school education and health care facilities by their parents and the society. The peers, educators and society influence the decisions regarding human capital investments even at the tertiary level, that is, at the college level. Moreover, the human capital formation at this stage is dependent upon the already formed human capital at the school level. Human capital formation is partly a social process and partly a conscious decision of the possessor of the human capital.

You know that the owner of a physical capital, says a bus, need not be present in the place where it is used; whereas, a bus-driver, who possesses the knowledge and ability to drive the bus, should be present when the bus is used for transportation of men and materials. Physical capital is tangible and can be easily sold in the market like any other commodity. Human capital is intangible; it is endogenously built in the body and mind of its owner. Human capital is not sold in the market; only the services of human capital are sold and hence the necessity of the owner of the human capital to be present in the place of production. The physical capital is separable from its owner, whereas, human capital is inseparable from its owner.

The two forms of capital differ in terms of mobility across space. Physical capital is completely mobile between countries except for some artificial trade restrictions. Human capital is not perfectly mobile between countries as movement is restricted by nationality and culture. Therefore, physical capital formation can be built even through imports, whereas human capital formation is to be done through conscious policy formulations in consonance with the nature of the society and economy and expenditure by the state and the individuals.

Both forms of capital depreciate with time but the nature of depreciation differs between the two. Continuous use of machine leads to depreciation and change of technology makes a machine obsolete. In the case of human capital, depreciation takes place with ageing but can be reduced, to a large extent, through continuous investment in education, health, etc. This investment also facilitates the human capital to cope with change in technology which is not the case with physical capital.

Nature of benefits flowing from human capital are different from that of physical capital. Human capital benefits not only the owner but also the society in general. This is called external benefit. An educated person can effectively take part in a democratic process and contribute to the socio-economic progress of a nation. A healthy person, by maintaining personal hygiene and sanitation, stops the spread of contagious diseases and epidemics. Human capital creates both private and social benefits, whereas physical capital creates only private benefit. That is, benefits from a capital good flow to those who pay the price for the product and services produced by it.



The concept of physical capital is the base for conceptualising human capital. There are some similarities between the two forms of capital; there are some striking dissimilarities as well. See Box 5.1.

Human Capital and Economic Growth: Who contributes more to national income — a worker in a factory or a software professional? We know that the labour skill of an educated person is more than that of an uneducated person and that the former generates more income than the latter. Economic growth means the increase in real national income of a country; naturally, the contribution of the educated person to economic growth is more than that of an illiterate person. If a healthy person could provide uninterrupted labour supply for a longer period of time, then health is also



Work These Out

➤ ‘An educated person contributes more to the income stream’. Find out the monthly salary earned by

- a mason
- watchman in your apartment/school
- maid servant/*dhobi*
- teacher/clerk in an office
- professor
- doctor/engineer/an executive

an important factor for economic growth. Thus, both education and health, along with many other factors like on-the-job training, job market information and migration, increase an



Fig. 5.2 Creating human capital: a school being run in make shift premises in a village

individual's income generating capacity.

This enhanced productivity of human beings or human capital contributes substantially not only towards increasing labour productivity but also stimulates innovations and creates ability to absorb new technologies. Education provides knowledge to understand changes in society and scientific advancements, thus, facilitate inventions and innovations. Similarly, the availability of educated labour force facilitates adaptation to new technologies.

Empirical evidence to prove that increase in human capital causes economic growth is rather nebulous. This may be because of measurement problems. For example, education measured in terms of years of schooling, teacher-pupil ratio and enrolment rates may not reflect the quality of education; health services measured in monetary terms, life expectancy and mortality rates may not reflect the true health status of the people in a country. Using the indicators mentioned above, an analysis of improvement in education and health sectors and growth in real per capita income in both developing and developed countries shows that there is convergence in the measures of human capital but no sign of convergence of per capita real income. In other words, the human capital growth in developing countries has been faster but the growth of per capita real income has not been that fast. There are reasons to believe that the



Fig. 5.3 Scientific and technical manpower: a rich ingredient of human capital

causality between human capital and economic growth flows in either directions. That is, higher income causes building of high level of human capital and vice versa, that is, high level of human capital causes growth of income.

India recognised the importance of human capital in economic growth long ago. The Seventh Five Year Plan says, "Human resources development (read human capital) has necessarily to be assigned a key role in any development strategy, particularly in a country with a large population. Trained and educated on sound lines, a large population can itself become an asset in accelerating economic growth and in ensuring social change in desired directions."

It is difficult to establish a relation of cause and effect from the growth of human capital (education and health) to economic growth but we can see in

TABLE 5.1
Select Indicators of Development in Education and Health Sectors

<i>Particulars</i>		<i>1951</i>	<i>1981</i>	<i>1991</i>	<i>2001</i>
Real Per Capita Income (in Rs)		3,687	5,353	7,321	10,306
Crude Death Rate (Per 1,000 Population)		25.1	12.5	9.8	8.1
Infant Mortality Rate		146	110	80	63
Life Expectancy at Birth (in Years)	Male	37.2	54.1	59.7	63.9
	Female	36.2	54.7	60.9	66.9
Literacy Rate (%)		16.67	43.57	52.21	65.20

Table 5.1 that these sectors have grown simultaneously. Growth in each sector probably has reinforced the growth of every other sector.

Two independent reports on the Indian economy, in recent times, have identified that India would grow faster due to its strength in human capital formation. Deutsche Bank, a German bank, in its report on 'Global Growth Centres' (published on 1.7.05) identified that India will emerge as one

among four major growth centres in the world by the year 2020. It further states, "Our empirical investigation supports the view that human capital is the most important factor of production in today's economies. Increases in human capital are crucial to achieving increases in GDP." With reference to India it states, "Between 2005 and 2020 we expect a 40 per cent rise in the average years of education in India, to just above 7 years..."

World Bank, in its recent report, 'India and the Knowledge Economy—Leveraging Strengths and Opportunities', states that India should make a transition to the knowledge economy and if it uses its knowledge as much as Ireland does (it is judged that Ireland uses its knowledge economy very effectively), then the per capita income of India will increase from a little over US \$1000 in



Fig. 5.4 Job on hand: transforming India into a knowledge economy



Box 5.2: India as a Knowledge Economy

The Indian software industry has been showing an impressive record over the past decade. Entrepreneurs, bureaucrats and politicians are now advancing views about how India can transform itself into a knowledge-based economy by using information technology (IT). There have been some instances of villagers using e-mail which are cited as examples of such transformation. Likewise, e-governance is being projected as the way of the future. The value of IT depends greatly on the existing level of economic development. IT can make existing assets and processes more effective and efficient but, first of all, a basic infrastructure needs to be developed.

2002 to US \$ 3000 in 2020. It further states that the Indian economy has all the key ingredients for making this transition, such as, a critical mass of skilled workers, a well-functioning democracy and a diversified science and technology infrastructure. Thus the two reports point out the fact that further human capital formation in India will move its economy to a higher growth trajectory.

5.4 HUMAN CAPITAL AND HUMAN DEVELOPMENT

The two terms sound similar but there is a clear distinction between them. Human capital considers education and health as a means to increase labour productivity. Human development is based on the idea that education and health are integral to human well-being because only when people have the ability to read and write and the ability to lead a long and healthy life, they will be able to make other choices which they value. Human capital treats human beings as a means to an end; the end being the increase in productivity. In this view, any

investment in education and health is unproductive if it does not enhance output of goods and services. In the human development perspective, human beings are ends in themselves. Human welfare should be increased through investments in education and health even if such investments do not result in higher labour productivity. Therefore, basic education and basic health are important in themselves, irrespective of their contribution to labour productivity. In such a view,



Work This Out

- If a construction worker, maid-servant, *dhobi* or a peon in school has absented herself/himself for long due to ill health, find out how it has affected her/his
 - (i) job security
 - (ii) wage/salary

What could be the possible reasons?



every individual has a right to get basic education and basic health care, that is, every individual has a right to be literate and lead a healthy life.

5.5 HUMAN CAPITAL FORMATION IN INDIA: GREAT PROSPECTS

In this section we are going to analyse human capital formation in India. We have already learnt that human capital formation is the outcome of investments in education, health, on-the-job training, migration and information: of these education and health are very important sources of human capital formation. We know that ours is a federal country with a union government, state governments and local governments (Municipal Corporations, Municipalities and Village Panchayats). The Constitution of India mentions the functions to be carried out by each level of government. Accordingly, expenditures on both education and health are to be carried out simultaneously by all the three tiers of the government. Analysis of health sector is taken up in the Chapter on infrastructure; hence, we will analyse only the education sector here.

Do you know who takes care of education and health in India? Before we take up the analysis of the education sector in India, we will look into the need for government intervention in education and health sectors. We do understand that education and health care services create both private and social benefits and this is the reason for the existence of both private and public

institutions in the education and health service markets. Expenditures on education and health make substantial long-term impact and they cannot be easily reversed; hence, government intervention is essential. For instance, once a child is admitted to a school or health care centre where the required services are not provided, before the decision is taken to shift the child to another institution, substantial amount of damage would have been done. Moreover, individual consumers of these services do not have complete information about the quality of services and their costs. In this situation, the providers of education and health services acquire monopoly power and are involved in exploitation. The role of government in this situation is to ensure that the private providers of these services adhere to the standards stipulated by the government and charge the correct price.

In India, the ministries of education at the union and state level, departments of education and various organisations like National Council of Educational Research and Training (NCERT), University Grants Commission (UGC) and All India Council of Technical Education (AICTE) regulate the education sector. Similarly, the ministries of health at the union and state level, departments of health and various organisations like Indian Council for Medical Research (ICMR) regulate the health sector.

In a developing country like ours, with a large section of the population living below the poverty line, many of



us cannot afford to access basic education and health care facilities. Moreover, a substantial section of our people cannot afford to reach super specialty health care and higher education. Furthermore, when basic education and health care is considered as a right of the citizens, then it is essential that the government should provide education and health services free of cost for the deserving citizens and those from the socially oppressed classes. Both, the union and state governments, have been stepping up expenditures in the education sector over the years in order to fulfil the objective of attaining cent per cent literacy and considerably increase the average educational attainment of Indians.



Work This Out

- Identify the objectives and functions of NCERT, UGC, AICTE and ICMR.

5.6 EDUCATION SECTOR IN INDIA

Growth in Government Expenditure on Education: Do you know how much the government spends on education? This expenditure by the government is expressed in two ways (i) as a percentage of 'total government expenditure' (ii) as a percentage of Gross Domestic Product (GDP).

The percentage of 'education expenditure of total government expenditure' indicates the importance of education in the scheme of

things before the government. The percentage of 'education expenditure of GDP' expresses how much of our income is being committed to the development of education in the country. During 1952-2002, education expenditure as percentage of total government expenditure increased from 7.92 to 13.17 and as percentage of GDP increased from 0.64 to 4.02. Throughout this period the increase in education expenditure has not been uniform and there has been irregular rise and fall. To this if we include the private expenditure incurred by individuals and by philanthropic institutions, the total education expenditure should be much higher.

Elementary education takes a major share of total education expenditure and the share of the higher/tertiary education (institutions of higher learning like colleges, polytechnics and universities) is the least. Though, on an average, the government spends less on tertiary education, 'expenditure per student' in tertiary education is higher than that of elementary. This does not mean that financial resources should be transferred from tertiary education to elementary education. As we expand school education, we need more teachers who are trained in the higher educational institutions; therefore, expenditure on all levels of education should be increased.

The per capita education expenditure differs considerably across states from as high as Rs 3,440 in Lakshadweep





Fig. 5.5 Investment in educational infrastructure is inevitable

to as low as Rs 386 in Bihar. This leads to differences in educational opportunities and attainments across states.

One can understand the inadequacy of the expenditure on education if we compare it with the desired level of education expenditure as recommended by the various commissions. More than 40 years ago, the Education Commission (1964–66) had recommended that at least 6 per cent of GDP be spent on education so as to make a noticeable rate of growth in educational achievements.

In December 2002, the Government of India, through the 86th Amendment of the Constitution of India, made free and compulsory education a fundamental right of all children in the age group of 6–14 years. The Tapas Majumdar Committee, appointed by the Government of India in 1998, estimated an expenditure of around Rs 1.37 lakh crore over 10 years (1998–99 to 2006–07) to bring all Indian children in the age group of 6–14 years under the purview of school education. Compared to this desired level of education expenditure of around 6 per cent of GDP, the current level of a little over 4 per cent has been quite inadequate. In principle, a goal of 6 per cent needs to be reached—this has been accepted as a must for the coming years.

In the Union Budget 2000–05, the Government of India levied a 2 per cent ‘education cess’ on all union taxes. The government estimated to get a revenue of Rs 4,000–5,000 crore and the entire



Work These Out

➤ Prepare case studies of dropouts at different levels of schooling, say

- Primary dropouts
- Class VIII dropouts
- Class X dropouts

Find out the causes and discuss in the class.

➤ ‘School dropouts are giving way to child labour’. Discuss how this is a loss to human capital.



TABLE 5.2

Educational Attainment in India

Sl.No.	Particulars	1990	2000
1.	Adult Literacy Rate (per cent of people aged 15+)		
	1.1 Male	61.9	68.4
	1.2 Female	37.9	45.4
2.	Primary completion rate (per cent of relevant age group)		
	2.1 Male	78	85
	2.2 Female	61	69
3.	Youth literacy rate (per cent of people aged 15+ to 24)		
	3.1 Male	76.6	79.7
	3.2 Female	54.2	64.8

amount was earmarked for spending on elementary education. In addition to this, the government sanctioned a large outlay for the promotion of higher education and new loan schemes for students to pursue higher education.

Educational Achievements in India: Generally, educational achievements in a country are indicated in terms of adult literacy level, primary education

completion rate and youth literacy rate. These statistics for the years 1990 and 2000 are given above in Table 5.2.

5.7 FUTURE PROSPECTS

Education for All — Still a Distant Dream:

Though literacy rates for both — adults as well as youth — have increased, still the absolute number of illiterates in India is as much as India's



Fig. 5.6 School dropouts give way to child labour: a loss to human capital



population was at the time of independence. In 1950, when the Constitution of India was passed by the Constituent Assembly, it was noted in the Directives of the Constitution that the government should provide free and compulsory education for all children up to the age of 14 years within 10 years from the commencement of the Constitution. Had we achieved this, we would have cent per cent literacy by now.

Gender Equity — Better than Before: The differences in literacy rates between males and females are narrowing signifying a positive development in gender equity; still the need to promote education for women in India is imminent for various reasons such as improving economic independence and social status of women and also because women education makes a favourable impact on fertility rate and health care of women and children. Therefore, we cannot be complacent about the



Fig. 5.7 Higher Education: few takers

upward movement in the literacy rates and we have miles to go in achieving cent per cent adult literacy.

Higher Education — a Few Takers:

The Indian education pyramid is steep indicating lesser and lesser number of people reaching the higher education level. Moreover, the level of unemployment among educated youth is the highest. As per NSSO data, in 2000, the unemployment rate of educated youth (Secondary Education and above) was 7.1 per cent and unemployment of people with up to primary education was only 1.2 per cent. Therefore, the government should increase allocation for higher education and also improve the standard of higher education institutions, so that students are imparted employable skills in such institutions.

5.8 CONCLUSION

The economic and social benefits of human capital formation and human development are well known. The union and state governments in India have been earmarking substantial financial outlays for development of education and health sectors. The spread of education and health services across different sectors of society should be ensured so as to simultaneously attain economic growth and equity. India has a rich stock of scientific and technical manpower in the world. The need of the hour is to better it qualitatively and provide such conditions so that they are utilised in our own country.



Recap

- Investments in education convert human beings into human capital; human capital represents enhanced labour productivity, which is an acquired ability and an outcome of deliberate investment decisions with an expectation that it will increase future income sources.
- Investments in education, on-the-job training, health, migration and information are the sources of human capital formation.
- The concept of physical capital is the base for conceptualising human capital. There are some similarities as well as dissimilarities between the two forms of capital formation.
- Investment in human capital formation is considered as efficient and growth enhancing.
- Human development is based on the idea that education and health are integral to human well-being because only when people have the ability to read and write and the ability to lead a long and healthy life, will they be able to make other choices which they value.
- The percentage of 'education expenditure of total government expenditure' indicates the importance of education in the scheme of things before the government.



EXERCISES

1. What are the two major sources of human capital in a country?
2. What are the indicators of educational achievement in a country?
3. Why do we observe regional differences in educational attainment in India?
4. Bring out the differences between human capital and human development.
5. How is human development a broader term as compared to human capital?
6. What factors contribute to human capital formation?





7. Mention two government organisations each that regulate the health and education sectors.
8. Education is considered an important input for the development of a nation. How?
9. Discuss the following as sources of human capital formation
 - (i) Health infrastructure
 - (ii) Expenditure on migration.
10. Establish the need for acquiring information relating to health and education expenditure for the effective utilisation of human resources.
11. How does investment in human capital contribute to growth?
12. 'There is a downward trend in inequality world-wide with a rise in the average education levels'. Comment.
13. Examine the role of education in the economic development of a nation.
14. Explain how investment in education stimulates economic growth.
15. Bring out the need for on-the-job-training for a person.
16. Trace the relationship between human capital and economic growth.
17. Discuss the need for promoting women's education in India.
18. Argue in favour of the need for different forms of government intervention in education and health sectors.
19. What are the main problems of human capital formation in India?
20. In your view, is it essential for the government to regulate the fee structure in education and health care institutions? If so, why?



SUGGESTED ADDITIONAL ACTIVITIES

1. Identify how Human Development Index is calculated. What is the position of India in the World Human Development Index?
2. Is India going to be a knowledge based economy in the near future? Discuss in the classroom.
3. Interpret the data given in Table 5.2.
4. As an educated person, what will be your contribution to the cause of education? (Example 'Each one—teach one').





5. Enlist the various sources that provide information regarding education, health and labour.
6. Read the annual reports of Union Ministries of Human Resource Development and Health and make summaries. Read the chapter on social sector in the *Economic Survey* .



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RURAL DEVELOPMENT

After studying this chapter, the learners will

- understand rural development and the major issues associated with it
- appreciate how crucial the development of rural areas is for India's overall development
- understand the critical role of credit and marketing systems in rural development
- learn about the importance of diversification of productive activities to sustain livelihoods
- understand the significance of organic farming in sustainable development.



"Only the tillers of the soil live by the right. The rest form their train and eat only the bread of dependence".

Thiruvalluvar

6.1 INTRODUCTION

In Chapter 4, we studied how poverty was a major challenge facing India. We also came to know that the majority of the poor live in rural areas where they do not have access to the basic necessities of life.

Agriculture is the major source of livelihood in the rural sector. Mahatma Gandhi once said that the real progress of India did not mean simply the growth and expansion of industrial urban centres but mainly the development of the villages. This idea of village development being at the centre of the overall development of the nation is relevant even today. Why is this so? Why should we attach such significance to rural development when we see around us fast growing cities with large industries and modern information technology hubs? It is because more than two-third of India's population depends on agriculture that is not productive enough to provide for them; one-third of rural India still lives in abject poverty. That is the reason why we have to see a developed rural India if our nation has to realise real progress. What, then, does rural development imply?

6.2 WHAT IS RURAL DEVELOPMENT?

Rural development is a comprehensive term. It essentially focuses on action for the development of areas that are lagging

behind in the overall development of the village economy. Some of the areas which are challenging and need fresh initiatives for development in India include

- Development of human resources including
 - literacy, more specifically, female literacy, education and skill development
 - health, addressing both sanitation and public health
- Land reforms
- Development of the productive resources of each locality
- Infrastructure development like electricity, irrigation, credit, marketing, transport facilities including construction of village roads and feeder roads to nearby highways, facilities for agriculture research and extension, and information dissemination
- Special measures for alleviation of poverty and bringing about significant improvement in the living conditions of the weaker sections of the population emphasising access to productive employment opportunities.

All this means that farming communities have to be provided with various means that help them increase the productivity of grains, cereals, vegetables and fruits. They also need to be given opportunities to diversify into various non-farm productive activities such as food processing.



Giving them better and more affordable access to healthcare, sanitation facilities at workplaces and homes and education for all would also need to be given top priority for rapid rural development.

It was observed in an earlier chapter that although the share of agriculture sector's contribution to GDP was on a decline, the population dependent on this sector did not show any significant change. Further, after the initiation of reforms, the growth rate of agriculture sector decelerated to 2.3 per cent per annum during the 1990s, which was lower than the earlier years. Scholars identify decline in public investment since 1991 as the major reason for this. They also argue that inadequate infrastructure, lack of alternate employment opportunities in the industry or service sector, increasing casualisation of employment etc. further impede rural development. The

impact of this phenomenon can be seen from the growing distress witnessed among farmers across different parts of India. Against this background, we will critically look at some of the crucial aspects of rural India like credit and marketing systems, agricultural diversification and the role of organic farming in promoting sustainable development.

6.3 CREDIT AND MARKETING IN RURAL AREAS

Credit: Growth of rural economy depends primarily on infusion of capital, from time to time, to realise higher productivity in agriculture and non-agriculture sectors. As the time gestation between crop sowing and realisation of income after production is quite long, farmers borrow from various sources to meet their initial investment on seeds, fertilisers, implements and other family expenses of marriage, death, religious ceremonies etc.

At the time of independence, moneylenders and traders exploited small and marginal farmers and landless labourers by lending to them on high interest rates and by manipulating the accounts to keep them in a debt-trap. A major change occurred after 1969 when India adopted social banking and multi-agency approach to adequately meet the needs of rural credit. Later, the National Bank for Agriculture and Rural Development (NBARD) was set up in 1982 as an apex body to coordinate the activities of all institutions involved in the rural financing system. The Green



Work These Out

- On a monthly basis, go through the newspapers of your region and identify the problems raised by them in relation to rural areas and the solutions offered. You could also visit a nearby village and identify the problems faced by people there.
- Prepare a list of recent schemes and their objectives from the government website <http://www.rural.nic.in>



Box 6.1: The Poor Women's Bank

'Kudumbashree' is a women-oriented community-based poverty reduction programme being implemented in Kerala. In 1995, a thrift and credit society was started as a small savings bank for poor women with the objective to encourage savings. The thrift and credit society mobilised Rs 1 crore as thrift savings. These societies have been acclaimed as the largest informal banks in Asia in terms of participation and savings mobilised.

Source: *www. kudumbashree.com. Visit this website and explore various other initiatives undertaken by this organisation. Can you identify some factors which contributed to their successes?*

Revolution was a harbinger of major changes in the credit system as it led to the diversification of the portfolio of rural credit towards production-oriented lending.

The institutional structure of rural banking today consists of a set of multi-agency institutions, namely, commercial banks, regional rural banks (RRBs), cooperatives and land development banks. The major aim of designing this multi-agency system is to dispense adequate credit at cheaper rates. Recently, Self-Help Groups (henceforth SHGs) have emerged to fill the gap in the formal credit system because the formal credit delivery mechanism has not only proven

inadequate but has also not been fully integrated into the overall rural social and community development. Since some kind of collateral is required, vast proportion of poor rural households were automatically out of the credit network. The SHGs promote thrift in small proportions by a minimum contribution from each member. From the pooled money, credit is given to the needy members to be repayable in small instalments at reasonable interest rates. By March end 2003, more than seven lakh SHGs had reportedly been credit linked. Such credit provisions are generally referred to as **micro-credit programmes**. SHGs have helped in the



Work These Out

- In your locality/neighbourhood, you might notice self-help groups providing credit. Attend few meetings of such self-help groups. Write a report on the profile of a self-help group. The profile may include — when it was started, the number of members, amount of savings and type of credit they provide and how borrowers use the loan.
- You might also find that those who take a loan for starting self-employment activities use it for other purposes. Interact with few such borrowers and explore the possibilities of encouraging them to start self-employment activities.





empowerment of women but the borrowings are mainly confined to consumption purposes and negligible proportion is borrowed for agricultural purposes.

Rural Banking — a Critical Appraisal:

Rapid expansion of the banking system had a positive effect on rural farm and non-farm output, income and employment, especially after the green revolution — it helped farmers to avail services and credit facilities and a variety of loans for meeting their production needs. Famines became events of the past; we have now achieved food security which is reflected in the abundant buffer stocks of grains. However, all is not well with our banking system. This is largely because of the chronic underperformance of formal credit institutions and high incidence of overdue instalments by the farmers.

With the possible exception of the commercial banks, other formal institutions have failed to develop a culture of deposit mobilisation — lending to worthwhile borrowers and effective loan recovery. Agriculture loan default rates have been chronically high and many studies reveal that about 50 per cent of the defaulters were categorised as 'wilful defaulters' which is a threat to the smooth functioning of the banking system and needs to be controlled.

Thus, the expansion and promotion of the rural banking sector has taken a backseat after reforms. To improve the situation, banks need to change their approach from just being lenders to building up relationship banking with the borrowers. Inculcating the habit of thrift and efficient utilisation of financial resources needs to be enhanced among the farmers too.



Work These Out

- In the last few years, you might have taken note — in your neighbourhood if you are living in rural areas or read in the newspapers or seen on TV — of farmers committing suicides. Many such farmers had borrowed money for farming and other purposes. It was found that when they were unable to pay back due to crop failure, insufficient income and employment opportunities, they took such steps. Collect information relating to such cases and discuss in the classroom.
- Visit banks that cater to rural areas. They may be primary agricultural cooperative banks, land development banks, regional rural banks or district cooperative banks. Collect details such as how many rural households borrowed from them, amount generally borrowed, kinds of collateral used, interest rates and dues.
- If farmers who borrowed from cooperative banks could not pay back due to crop failure and other reasons, their loans should be waived otherwise they may take drastic decisions like committing suicides. Do you agree?





6.4 AGRICULTURAL MARKET SYSTEM

Have you ever asked yourself how food grains, vegetables and fruits that we consume daily come from different parts of the country? The mechanism through which these goods reach different places depends on the market channels. Agricultural marketing is a process that involves the assembling, storage, processing, transportation, packaging, grading and distribution of different agricultural commodities across the country.

Prior to independence, farmers, while selling their produce to traders, suffered from faulty weighing and manipulation of accounts. Farmers who did not have the required information on prices prevailing in markets were often forced to sell at low prices. They also did not have proper storage facilities to keep back their produce for selling later at a better price. Do you know that even today, more than 10 per cent of goods produced in farms are wasted due to

lack of storage? Therefore, state intervention became necessary to regulate the activities of the private traders.

Let us discuss four such measures that were initiated to improve the marketing aspect. The first step was regulation of markets to create orderly and transparent marketing conditions. By and large, this policy benefited farmers as well as consumers. However, there is still a need to develop about 27,000 rural periodic markets as regulated market places to realise the full potential of rural markets. Second component is provision of physical infrastructure facilities like roads, railways, warehouses, godowns, cold storages and processing units. The current infrastructure facilities are quite inadequate to meet the growing demand and need to be improved. Cooperative marketing, in realising fair prices for farmers' products, is the third aspect of government initiative. The success of milk cooperatives in transforming the



Fig. 6.1 Regulated market yards benefit farmers as well as consumers





Work These Out

- Visit a nearby vegetable and fruit market. Observe and identify different characteristics of the market. Identify the place of origin of at least ten different fruits and vegetables and distance travelled to reach the market. Further, look at the modes of transport and its implication on prices.
- Most small towns have regulated market yards. Farmers can go to these markets and sell their produce. They can also store their goods in the yard. Visit one regulated market yard; collect the details of its functioning, kind of goods coming to the yard and how prices are fixed.

social and economic landscape of Gujarat and some other parts of the country is testimony to the role of cooperatives. However cooperatives have received a setback during the recent past due to inadequate coverage of farmer members, lack of appropriate link between marketing and processing cooperatives and inefficient financial management. The fourth element is the policy instruments like (i) assurance of minimum support prices (MSP) for 24 agricultural products (ii) maintenance of buffer stocks of wheat and rice by Food Corporation of India and (iii) distribution of food grains and sugar through PDS. These instruments are aimed at protecting the income of the farmers and providing foodgrains at a subsidised rate to the poor. However, despite government intervention, private trade (by moneylenders, rural political elites, big merchants and rich farmers) predominates agricultural markets. The quantity of agricultural products, handled by the government agencies and consumer cooperatives, constitutes only 10 per cent while the rest is handled by the private sector.

Agricultural marketing has come a long way with the intervention of the government in various forms. The rapid commercialisation of agriculture in the era of globalisation offers tremendous opportunities for value addition of agro-based products through processing and this needs to be encouraged apart from awareness and training of the farmers to improve their marketing ability.

Emerging Alternate Marketing Channels:

It has been realised that if farmers directly sell their produce to consumers, it increases their share in the price paid by the consumers. Some examples of these channels are *Apni Mandi* (Punjab, Haryana, Rajasthan); *Hadaspar Mandi* (Pune); *Rythu Bazars* (vegetable and fruit market in Andhra Pradesh) and *Uzhavar Sandies* (farmers markets in Tamil Nadu). Further, several national and multinational fast food chains are increasingly entering into contracts/alliances with farmers to encourage them to cultivate farm products (vegetables, fruits, etc.) of the desired quality by providing them with



not only seeds and other inputs but also assured procurement of the produce at pre-decided prices. Such arrangements will help in reducing the price risks of farmers and would also expand the markets for farm products.



Work This Out

- Visit one such alternative marketing system which farmers in your locality, or in the neighbourhood rural areas, use. How are they different from regulated market yards? Should they be encouraged and supported by the government? Why and how? Discuss.

6.5 DIVERSIFICATION INTO PRODUCTIVE ACTIVITIES

Diversification includes two aspects: one relates to diversification of crop production and the other relates to a shift of workforce from agriculture to other allied activities (livestock, poultry, fisheries etc.) and non-agriculture sector. The need for diversification arises from the fact that there is greater risk in depending exclusively on farming for livelihood. Diversification towards new areas is necessary not only to reduce the risk from agriculture sector but also to provide productive sustainable livelihood options to rural people. Much of the agricultural employment activities are concentrated in the Kharif season. But during the Rabi season, in areas where there are

inadequate irrigation facilities, it becomes difficult to find gainful employment. Therefore expansion into other sectors is essential to provide supplementary gainful employment and in realising higher levels of income for rural people to overcome poverty and other tribulations. Here the focus will be only on allied activities, non-farm employment and other emerging alternatives of livelihood, though there are many other options available for providing sustainable livelihoods in rural areas.

As agriculture is already overcrowded, a major proportion of the increasing labour force needs to find alternate employment opportunities in other non-farm sectors. Non-farm economy has several segments in it; some possess dynamic linkages that permit healthy growth while others are



Fig. 6.2 Jaggery making is an allied activity of the farming sector



Box 6.2: Tamil Nadu Women in Agriculture (TANWA)

Tamil Nadu Women in Agriculture (TANWA) is a project initiated in Tamil Nadu to train women in latest agricultural techniques. It induces women to actively participate in raising agricultural productivity and family income. At a Farm Women's Group in Thiruchirapalli, run by Anthoniammal, trained women are successfully making and selling vermicompost and earning money from this venture. Many other Farm Women's Groups are creating savings in their group by functioning like mini banks through a micro-credit system. With the accumulated savings, they promote small-scale household activities like mushroom cultivation, soap manufacture, doll making or other income-generating activities.

in subsistence, low productivity propositions. The dynamic sub-sectors include **agro-processing industries**, food processing industries, leather industry, tourism, etc. Those sectors which have the potential but seriously lack infrastructure and other support include traditional household-based industries like pottery, crafts, handlooms etc. Though majority of rural women find employment in agriculture with men looking for non-farm employment, in recent times, women have also begun to look for non-farm jobs (see Box 6.2).

Animal Husbandry:

In India, the farming community uses the mixed crop-livestock farming system — cattle, goats, fowl are the widely held species. Livestock production provides increased stability in income, food security, transport, fuel and

nutrition for the family without disrupting other food-producing activities. Today, livestock sector alone provides alternate livelihood options to over 70 million small and marginal farmers including landless labourers. A significant number of women also find employment in the livestock sector.

Chart 6.1 shows the distribution of livestock in India. Poultry accounts for the largest share with 42 per cent followed by others. Other animals which include camels, asses, horses, ponies

Chart 6.1: Distribution of Livestock in India, 1997

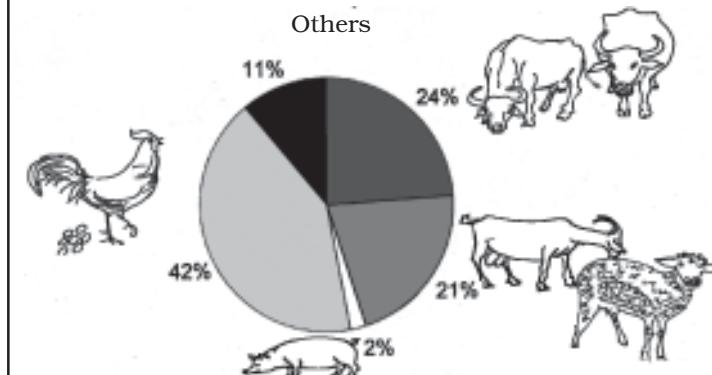




Fig. 6.3 Sheep rearing — an important income augmenting activity in rural areas

and mules are in the lowest rung. India had about 287 million cattle, including 90 million buffaloes, in 1997. Performance of the Indian dairy sector over the last three decades has been quite impressive. Milk production in the country has increased by more than four times between 1960-2002. This can be attributed mainly to the successful implementation of 'Operation Flood' from 1966 onwards; it is a system whereby all the farmers can pool their milk produce according to different grading (based on quality) and the same is processed and marketed to urban centres through cooperatives. In this system the farmers are assured of a fair price and income from the supply of milk to urban markets. Gujarat state is held as a success story in the efficient implementation of milk cooperatives which has been emulated by many states. Meat, eggs, wool and other by-products are also emerging as important productive sectors for diversification.

Fisheries: The fishing community regards the water body as 'mother' or 'provider'. The water bodies consisting of sea, oceans, rivers, lakes, natural aquatic ponds, streams etc. are, therefore, an integral and life-giving source for the fishing community. In India, after progressive increase in budgetary allocations and introduction of new technologies in fisheries and aquaculture, the development of fisheries has come a long way. Presently, fish production from inland sources contributes about 49 per cent to the total fish production and the balance 51 per cent comes from the marine sector (sea and oceans). Today total fish production accounts for 1.4 per cent of the total GDP. Among states, Kerala, Gujarat, Maharashtra and Tamil Nadu are the major producers of marine products. The overall socio-economic status of fishermen is comparatively lower than that of other backward sectors of our economy. Rampant underemployment, low per capita earnings, absence of mobility of labour to other sectors and a high rate of illiteracy and indebtedness are some of the major problems faced by these communities. Even though women are not involved in active fishing, about 60 per cent of the workforce in export marketing and 40 per cent in internal marketing are women. There is a need to increase credit facilities—cooperatives and SHGs — for fisherwomen to meet the working capital requirements for marketing.

Horticulture: Blessed with a varying climate and soil conditions, India has



adopted growing of diverse horticultural crops such as fruits, vegetables, tuber crops, flowers, medicinal and aromatic plants, spices and plantation crops. These crops play a vital role in providing food and nutrition, besides addressing employment concerns. The period between 1991-2003 is also called an effort to heralding a 'Golden Revolution' because during this period, the planned investment in horticulture became highly productive and the sector emerged as a sustainable livelihood option. India has emerged as a world leader in producing a variety of fruits like mangoes, bananas, coconuts, cashew nuts and a number of spices and is the second largest producer of fruits and vegetables. Economic condition of many farmers engaged in horticulture has improved and it has become a means of improving livelihood for many unprivileged classes too. Flower harvesting, nursery maintenance, hybrid seed production



Fig. 6.5 Women in rural households take up bee-keeping as an entrepreneurial activity

and tissue culture, propagation of fruits and flowers and food processing are highly remunerative employment options for women in rural areas. It has been estimated that this sector provides employment to around 19 per cent of the total labour force.

Though, in terms of numbers, our livestock population is quite impressive but its productivity is quite low as compared to other countries. It requires improved technology and promotion of good breeds of animals to enhance productivity. Improved veterinary care and credit facilities to small and marginal farmers and landless labourers would enhance sustainable livelihood options through livestock production. Production of fisheries has already increased substantially.



Fig. 6.4 Poultry has the largest share of total livestock in India



However problems related to over-fishing and pollution need to be regulated and controlled. Welfare programmes for the fishing community have to be reoriented in a manner which can provide long-term gains and sustenance of livelihoods. Horticulture has emerged as a successful sustainable livelihood option and needs to be encouraged significantly. Enhancing its role requires investment in infrastructure like electricity, cold storage systems, marketing linkages, small-scale processing units and technology improvement and dissemination.

Other Alternate Livelihood Options: We know that IT has revolutionised many sectors in the Indian economy. There is broad consensus that IT will play a critical role in achieving sustainable development and food security in the twenty-first century. Many examples justify this observation, such as the ability of governments to predict areas of food insecurity and vulnerability using appropriate information and software tools so that action can be taken to prevent or reduce the likelihood of an

emergency. It also has a positive impact on the agriculture sector as it disseminates information regarding emerging technologies and its applications, prices, weather and soil conditions for growing different crops etc. Most importantly, it has ushered in a knowledge economy that is a thousand times more powerful than the industrial revolution. Though IT is, by itself, no catalyst of change but it can act as a tool for releasing the creative potential and knowledge embedded in our people. It also has potential of employment generation in rural areas. Experiments with IT and its application to rural development are carried out in different parts of India (see Box 6.3).

6.6 SUSTAINABLE DEVELOPMENT AND ORGANIC FARMING

In recent years, awareness of the harmful effect of chemical-based fertilisers and pesticides on our health is on a rise. Conventional agriculture relies heavily on chemical fertilisers and toxic pesticides etc., which enter the food supply, penetrate the water

Box 6.3: Every Village — a Knowledge Centre

M.S. Swaminathan Research Foundation, an institution located in Chennai, Tamil Nadu, with support from Sri Ratan Tata Trust, Mumbai, has established the Jamshedji Tata National Virtual Academy for Rural Prosperity. The Academy envisaged to identify a million grassroot knowledge workers who will be enlisted as Fellows of the Academy. The programme provides an info-kiosk (PC with Internet and video conferencing facility, scanner, photocopier, etc.) at a low cost and trains the kiosk owner; the owner then provides different services and tries to earn a reasonable income. The Government of India has decided to join the alliance by providing financial support of Rs 100 crore.



Box 6.4: Organic Food

Organic food is growing in popularity across the world. Many countries have around 10 per cent of their food system under organic farming. There are many retail chains and supermarkets which are accorded with **green status** to sell organic food. Moreover, organic foods command higher prices of around 10-100 per cent than conventional ones.

sources, harm the livestock, deplete the soil and devastate natural eco-systems. Efforts in evolving technologies which are eco-friendly are essential for sustainable development and one such technology which is eco-friendly is organic farming. In short, organic agriculture is a whole system of farming that restores, maintains and enhances the ecological balance. There is an increasing demand for organically grown food to enhance food safety throughout the world (see Box 6.4).

Benefits of Organic Farming: Organic agriculture offers a means to substitute costlier agricultural inputs (such as HYV seeds, chemical fertilisers,

pesticides etc.) with locally produced organic inputs that are cheaper and thereby generate good returns on investment. Organic agriculture also generates incomes through international exports as the demand for organically grown crops is on a rise. Studies across countries have shown that organically grown food has more nutritional value than chemical farming thus providing us with healthy foods. Since organic farming requires more labour input than conventional farming, India will find organic farming an attractive proposition. Finally, the produce is pesticide-free and produced in an environmentally sustainable way (see Box 6.5).

Box 6.5: Organically Produced Cotton in Maharashtra

In 1995, when Kisan Mehta of *Prakruti* (an NGO) first suggested that cotton, the biggest user of chemical pesticides, could be grown organically, the then Director of the Central Institute for Cotton Research, Nagpur, famously remarked, "Do you want India to go naked?" At present, as many as 130 farmers have committed 1,200 hectares of land to grow cotton organically on the International Federation of Organic Agriculture Movement's standards. The produce was later tested by the German Accredited Agency, AGRECO, and found to be of high quality. Kisan Mehta feels that about 78 per cent of Indian farmers are marginal farmers owning about less than 0.8 hectare but accounting for 20 per cent of India's cultivable land. Therefore, organic agriculture is more profitable in terms of money and soil conservation in the long run.

Source: *Lyla Bavaram, A Green Alternative, Frontline, 29 July 2005.*



Popularising organic farming requires awareness and willingness on the part of farmers to adapt to new technology. Inadequate infrastructure and the problem of marketing the products are major concerns which need to be addressed apart from an appropriate agriculture policy to promote organic farming. It has been observed that the yields from organic farming are less than modern agricultural farming in the initial years. Therefore, small and marginal farmers may find it difficult to adapt to large-scale production. Organic produce may also have more blemishes and a shorter shelf life than sprayed produce. Moreover choice in production of off-season crops is quite limited in organic farming. Nevertheless, organic farming helps in sustainable development of agriculture and India has a clear advantage in producing organic products for both domestic and international markets.

6.7 CONCLUSION

It is clear that until and unless some spectacular changes occur, the rural sector might continue to remain backward. There is a greater need today to make rural areas more vibrant through diversification into dairying, poultry, fisheries, vegetables and fruits and linking up the rural production centres with the urban and foreign (export) markets to realise higher returns on the investments for the products. Moreover, infrastructure elements like credit and marketing, farmer-friendly agricultural policies and a constant appraisal and dialogue between farmers' groups and state agricultural departments are essential to realise the full potential of the sector.

Today we cannot look at the environment and rural development as two distinct subjects. There is need to invent or procure alternate sets of eco-friendly technologies that lead to sustainable development in different



Work These Out

- Make a list of five popular items that are organically produced in India.
- Visit a nearby super market, vegetable shop and/or a departmental shop. Identify a few products. Prepare a chart comparing a few goods that are produced organically and in the normal way on the basis of their prices, shelf life, quality and the kind of advertisement through which they are popularised.
- Visit a horticultural farm in the nearby locality. Collect the details of goods that they cultivate on the farm. They could have diversified their cropping patterns. Discuss with them the merits and demerits of the diversification.



circumstances. From these, each rural community can choose whatever will suit its purpose. First of all, then, we need to learn from, and also try out when found relevant, practices from the available set of 'best practice'

illustrations (which means success stories of rural development experiments that have already been carried out in similar conditions in different parts of India), to speed up this process of 'learning by doing'.



Recap

- Rural development is quite a comprehensive term but it essentially means a plan of action for the development of areas which are lagging behind in socio-economic development.
- There is a need for improving the quantity and quality of infrastructure in rural areas such as banking, marketing, storage, transport and communications etc. to realise its true potential.
- Diversification towards new areas such as livestock, fisheries and other non-agricultural activities is necessary not only to reduce the risk from agriculture sector but also to provide productive sustainable livelihood options to our rural people.
- The importance of organic farming as an environmentally sustainable production process is on a rise and needs to be promoted.



EXERCISES

1. What do you mean by rural development? Bring out the key issues in rural development.
2. Discuss the importance of credit in rural development.
3. Explain the role of micro-credit in meeting credit requirements of the poor.
4. Explain the steps taken by the government in developing rural markets.
5. Why is agricultural diversification essential for sustainable livelihoods?



6. Critically evaluate the role of the rural banking system in the process of rural development in India.
7. What do you mean by agricultural marketing?
8. Mention some obstacles that hinder the mechanism of agricultural marketing.
9. What are the alternative channels available for agricultural marketing? Give some examples.
10. Explain the term 'Golden Revolution'.
11. Explain four measures taken by the government to improve agricultural marketing.
12. Explain the role of non-farm employment in promoting rural diversification.
13. Bring out the importance of animal husbandry, fisheries and horticulture as a source of diversification.
14. 'Information technology plays a very significant role in achieving sustainable development and food security' — comment.
15. What is organic farming and how does it promote sustainable development?
16. Identify the benefits and limitations of organic farming.
17. Enlist some problems faced by farmers during the initial years of organic farming.



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7

EMPLOYMENT : GROWTH, INFORMALISATION AND OTHER ISSUES

After studying this chapter, the learners will

- understand a few basic concepts relating to employment such as economic activity, worker, workforce and unemployment
- understand the nature of participation of men and women in various economic activities in various sectors
- know the nature and extent of unemployment
- assess the initiatives taken by the government in generating employment opportunities in various sectors and regions.

What I object to, is the 'craze' for machinery, not machinery as such. The craze is for what they call labour-saving machinery. Men go on 'saving labour' till thousands are without work and thrown on the open streets to die of starvation...

Mahatma Gandhi

7.1 INTRODUCTION

People do a variety of work. Some work on farms, in factories, banks, shops and many other workplaces; yet a few others work at home. Work at home includes not only traditional work like weaving, lace making or variety of handicrafts but also modern jobs like programming work in the IT industry. Earlier factory work meant working in factories located in cities whereas now technology has enabled people to produce those factory-based goods at home in villages.

Why do people work? Work plays an important role in our lives as individuals and as members of society. People work for 'earning' a living. Some people get, or have, money by inheriting it, not working for it. This does not completely satisfy anybody. Being employed in work gives us a sense of self-worth and enables us to relate ourselves meaningfully with others. Every working person is actively contributing to national income and hence, the development of the country by engaging in various economic activities – that is the real meaning of 'earning' a living. We do not work only



Fig. 7.1 Multinational companies sell footballs made in the houses of Jalandhar, Punjab

for ourselves; we also have a sense of accomplishment when we work to meet the requirements of those who are dependent on us. Having recognised the importance of work, Mahatma Gandhi insisted upon education and training through a variety of works including craft.

Studying about working people gives us insights into the quality and nature of employment in our country and helps in understanding and planning our human resources. It helps us to analyse the contribution made by different industries and sectors towards national income. It also helps us to address many social issues such as exploitation of marginalised sections of the society, child labour etc.



7.2 WORKERS AND EMPLOYMENT

What is employment? Who is a worker? When a farmer works on fields, he or she produces food grains and raw materials for industries. Cotton becomes cloth in textile mills and in powerlooms. Lorries transport goods from one place to another. We know that the total money value of all such goods and services produced in a country in a year is called its gross domestic product for that year. When we also consider what we pay for our imports and get from our exports we find that there is a net earning for the country which may be positive (if we have exported more in value terms than imported) or negative (if imports exceeded exports in value terms) or zero (if exports and imports were of the same value). When we add this earning (plus or minus) from foreign transactions, what we get is called the country's gross national product for that year.

Those activities which contribute to the gross national product are called economic activities. All those who are engaged in economic activities, in whatever capacity – high or low, are workers. Even if some of them temporarily abstain from work due to illness, injury or other physical disability, bad weather, festivals, social or religious functions, they are also workers. Workers also include all those who help the main workers in these activities. We generally think of only those who are paid by an employer for their work as workers. This is not so. Those who are self-employed are also workers.

The nature of employment in India is multifaceted. Some get employment throughout the year; some others get employed for only a few months in a year. Many workers do not get fair wages for their work. While estimating the number of workers, all those who are engaged in economic activities are included as employed. You might be interested in knowing the number of people actively engaged in various economic activities. During 1999–2000, India had about a 400 million strong workforce. Since majority of our people reside in rural areas, the proportion of workforce residing there



Work This Out

In your house or neighbourhood, you might come across many women who, even though they have technical degrees and diplomas and also free time to go to work, do not go to work. Ask them the reasons for not going to work. List all of them and discuss in the classroom whether they should go for work and why, and also ways by which they could be sent for work. Some social scientists argue that housewives working at home without getting paid for that work must also be regarded as contributing to the gross national product and therefore, as engaged in an economic activity. Would you agree?





is higher. The rural workers constitute about three-fourth of this 400 million. Men form the majority of workforce in India. About 70 per cent of the workers are men and the rest are women (men and women include child labourers in respective sexes). Women workers account for one-third of the rural workforce whereas in urban areas, they are just one-fifth of the workforce. Women carry out works like cooking, fetching water and fuelwood and participate in farm labour. They are not paid wages in cash or in the form of grains; at times they are not paid at all. For this reason, these women are not categorised as workers. Economists have argued that these women should also be called workers.

7.3 PARTICIPATION OF PEOPLE IN EMPLOYMENT

Worker-population ratio is an indicator which is used for analysing the employment situation in the country. This ratio is useful in knowing the proportion of population that is actively contributing to the production of goods and services of a country. If the ratio is higher, it means that the engagement of people is greater; if the ratio for a country is medium, or low, it means that a very high proportion of its population is not involved directly in economic activities.

You might have already studied, in lower classes, the meaning of the term 'population'. Population is defined as the total number of people who reside in a particular locality at a particular point of time. If you want

to know the worker-population ratio for India, divide the total number of workers in India by the population in India and multiply it by 100, you will get the worker-population ratio for India.

If you look at Table 7.1, it shows the different levels of participation of people in economic activities. For every 100 persons, about 40 (by rounding off 39.5) are workers in India. In urban areas, the proportion is about 34 whereas in rural India, the ratio is about 42. Why is there such a difference? People in rural areas have limited resources to earn a higher income and participate more in the employment market. Many do not go to schools, colleges and other training institutions. Even if some go, they discontinue in the middle to join the workforce; whereas, in urban areas, a considerable section is able to study in various educational institutions. Urban people have a variety of employment opportunities. They look for the appropriate job to suit their qualifications and skills. In rural areas, people cannot stay at home as their economic condition may not allow them to do so.

TABLE 7.1
**Worker-Population Ratio in India,
1999-2000**

Sex	Worker Population Ratio		
	Total	Rural	Urban
Men	52.7	53.1	51.8
Women	25.4	29.9	13.9
Total	39.5	41.7	33.7





Work These Out

- Any study of employment must start with a review of the worker-population ratios – why?
- In some communities, you might have noticed that even if the males do not earn a high income, they do not send women to work. Why?

Compared to females, more males are found to be working. The difference in participation rates is very large in urban areas: for every 100 urban females, only about 14 are engaged in some economic activities. In rural areas, for every 100 rural women about 30 participate in the employment market. Why are women, in general, and urban women, in particular, not working? It is common to find that where men are able to earn high incomes, families discourage female members from taking up jobs.

Going back to what has already been mentioned above, many activities for the household engaged in by women are not recognised as productive work. This narrow definition of work leads to non-recognition of

women's work and, therefore, to the underestimation of the number of women workers in the country. Think of the women actively engaged in many activities within the house and at family farms who are not paid for such work. As they certainly contribute to the maintenance of the household and farms, do you think that their number should be added to the number of women workers?

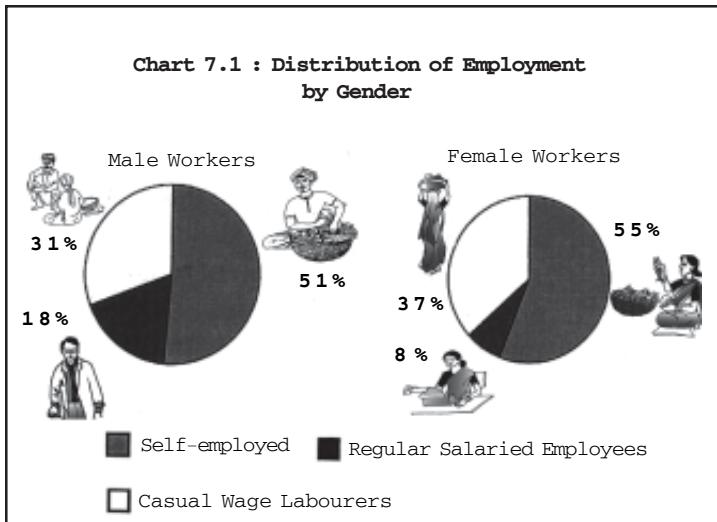
7.4 SELF-EMPLOYED AND HIRED WORKERS

Does the worker-population ratio say anything about workers' status in society or about the working conditions? By knowing the status with which a worker is placed in an enterprise, it may be possible to know one dimension – quality of employment in a country. It also enables us to know the attachment a worker has with his



Fig. 7.2 Brick-making: a form of casual work





Such labourers are casually engaged in others' farms and, in return, get a remuneration for the work done. Workers like the civil engineer working in the construction company account for 15 per cent of India's workforce. When a worker is engaged by someone or an enterprise and paid his or her wages on a regular basis, they are known as **regular salaried employees**.

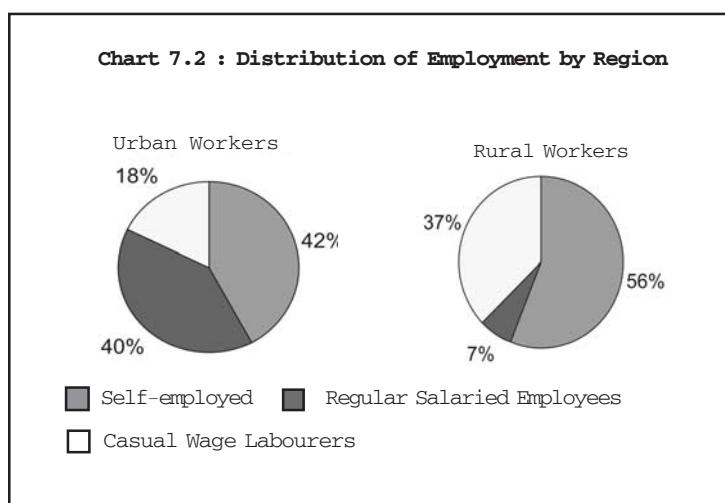
Look at Chart 7.1: you will notice that self-

employment is a major source of livelihood for both men and women as this category accounts for more than 50 per cent of the workforce in both diagrams. Casual wage work is the second major source for both men and women, more so for the latter (37 per cent). When it comes to regular

or her job and the authority she or he has over the enterprise and over other co-workers.

Let us take three workers from the construction industry – a cement shop owner, a construction worker and a civil engineer of a construction company. Since the status of each one of them is different from another, they are also called differently.

Workers who own and operate an enterprise to earn their livelihood are known as **self-employed**. Thus the cement shop owner is self-employed. More than half the workforce in India belongs to this category. The construction workers are known as **casual wage labourers**; they account for 33 per cent of India's workforce.





salaried employment, men are found to be so engaged in greater proportion. They form 18 per cent whereas women form only 8 per cent. One of the reasons could be skill requirement. Since regular salaried jobs require skills and a higher level of literacy, women might not have been engaged to a great extent.

When we compare the distribution of workforce in rural and urban areas in Chart 7.2 you will notice that the self-employed and casual wage labourers are found more in rural areas than in

urban areas. In the latter, both self-employed and regular wage salaried jobs are greater. In the former, since majority of those depending on farming own plots of land and cultivate independently, the share of self-employed is greater.

The nature of work in urban areas is different. Obviously everyone cannot run factories, shops and offices of various types. Moreover enterprises in urban areas require workers on a regular basis.



Work These Out

- We generally think that only those who are doing paid work regularly or casually such as agricultural labourers, factory workers, those who work in banks and other offices as assistants and clerks are workers. From the above discussion, you must have understood that those who are self-employed such as pavement vegetable vendors, professionals such as lawyers, doctors and engineers are also workers. Mark (a), (b) and (c) against self-employed, regular salaried employees and casual wage labourers respectively:
 1. Owner of a saloon
 2. Worker in a rice mill who is paid on daily basis but employed regularly
 3. Cashier in State Bank of India
 4. Typist working in a state government office on a daily wage basis but paid monthly
 5. A handloom weaver
 6. Loading worker in wholesale vegetable shop
 7. Owner of a cool drinks shop which sells Pepsi, Coca Cola and Mirinda
 8. Nurse in a private hospital who gets monthly salary and has been working regularly for the past 5 years.
- Economists point out that casual wage labourers are the most vulnerable among the three categories. Could you locate who these workers are and where they are found and why?
- Can we say that the self-employed earn more than the casual wage labourers or regular salaried employees? Identify a few other indicators of quality of employment.



7.5 EMPLOYMENT IN FIRMS, FACTORIES AND OFFICES

In the course of economic development of a country, labour flows from agriculture and other related activities to industry and services. In this process, workers migrate from rural to urban areas. Eventually, at a much later stage, the industrial sector begins to lose its share of total employment as the service sector enters a period of rapid expansion. This shift can be understood by looking at the distribution of workers by industry. Generally, we divide all economic activities into eight different industrial divisions. They are (i) Agriculture (ii) Mining and Quarrying (iii) Manufacturing (iv) Electricity, Gas and Water Supply (v) Construction (vi) Trade (vii) Transport and Storage and (viii) Services. For simplicity, all the



Fig. 7.3 Garment workers: upcoming factory employment for women

working persons engaged in these divisions can be clubbed into three major sectors viz. (a) primary sector which includes (i) and (ii) (b) secondary sector which includes (iii), (iv) and (v) and (c) service sector which includes divisions (vi), (vii) and (viii). Table 7.2 shows the distribution of working persons in different industries during the year 1999-2000.

Primary sector is the main source of employment for majority of workers

TABLE 7.2

Distribution of Workforce by Industry, 1999-2000 (in %)

<i>Industrial Category</i>	<i>Place of Residence</i>		<i>Sex</i>		<i>Total</i>
	<i>Rural</i>	<i>Urban</i>	<i>Male</i>	<i>Female</i>	
Primary Sector	76.7	9.6	53.8	75.1	60.4
Secondary Sector	10.8	31.3	17.6	11.8	15.8
Tertiary / Service Sector	12.5	59.1	28.6	13.1	23.8
Total	100.0	100.0	100.0	100.0	100.0



Work This Out

➤ All newspapers have one section meant for job opportunities. Some also devote an entire supplement in a day or every week like **Opportunities** in *The Hindu* or **Ascent** in *The Times of India*. Many companies advertise vacancies for various positions. Cut those sections. Develop a table which contains four columns: whether the company is private or public, name of the post, number of posts, sector – primary, secondary or tertiary – and qualification required. Analyse the table in the classroom about jobs advertised in the newspapers.

in India. Secondary sector provides employment to only about 16 per cent of workforce. About 24 per cent of workers are in the service sector. Table 7.2 also shows that more than three-fourth of the workforce in rural India depends on agriculture and mining and quarrying. About 10 per cent of rural workers are working in manufacturing industries, construction and other divisions. Service sector provides employment to only about 13 per cent of rural workers. Agriculture and mining is not a major source of employment in urban areas where people are mainly engaged in the service sector. About 60 per cent of urban workers are in the service sector. The secondary sector gives employment to about 30 per cent of urban workforce.

Though both men and women workers are concentrated in the primary sector, women workers' concentration is very high there. More than three-fourth of the female workforce is employed in the primary sector whereas only half of males work in that sector. Men get opportunities in both secondary and service sectors.

7.6 GROWTH AND CHANGING STRUCTURE OF EMPLOYMENT

In Chapters 2 and 3, you might have studied about the planning strategies in detail. Here we will look at two developmental indicators – growth of employment and GDP. Fifty years of planned development have been aimed at expansion of the economy through increase in national product and employment.

During the period 1960–2000, Gross Domestic Product (GDP) of India grew positively and was higher than the employment growth. However, there was always fluctuation in the growth of GDP. During this period, employment grew at a stable rate of about 2 per cent.

Chart 7.3 also points at another disheartening development in the late 1990s: employment growth started declining and reached the level of growth that India had in the early stages of planning. During these years, we also find a widening gap between the growth of GDP and employment. This means that in the Indian economy, without generating employment, we have been able to produce more goods



and services. Scholars refer to this phenomenon as jobless growth.

So far we have seen how employment has grown in comparison to GDP. Now it is necessary to know how the growth pattern of employment and GDP affected different sections of workforce. From this we will also be able to understand what types of employment are generated in our country.

Let us look at two indicators that we have seen in the preceding sections – employment of people in various industries and their status. We know that India is an agrarian nation; a major section of population lives in rural areas and is dependent on agriculture as their main livelihood.

Developmental strategies in many countries, including India, have aimed at reducing the proportion of people depending on agriculture.

Distribution of workforce by industrial sectors shows substantial shift from farm work to non-farm work (see Table 7.3). In 1972–73, about 74 per cent of workforce was engaged in primary sector and in 1999–2000, this proportion has declined to 60 per cent. Secondary and service sectors are showing promising future for the Indian workforce. You may notice that the shares of these sectors have increased from 11 to 16 per cent and 15 to 24 per cent respectively.

The distribution of workforce in different status indicates that over the

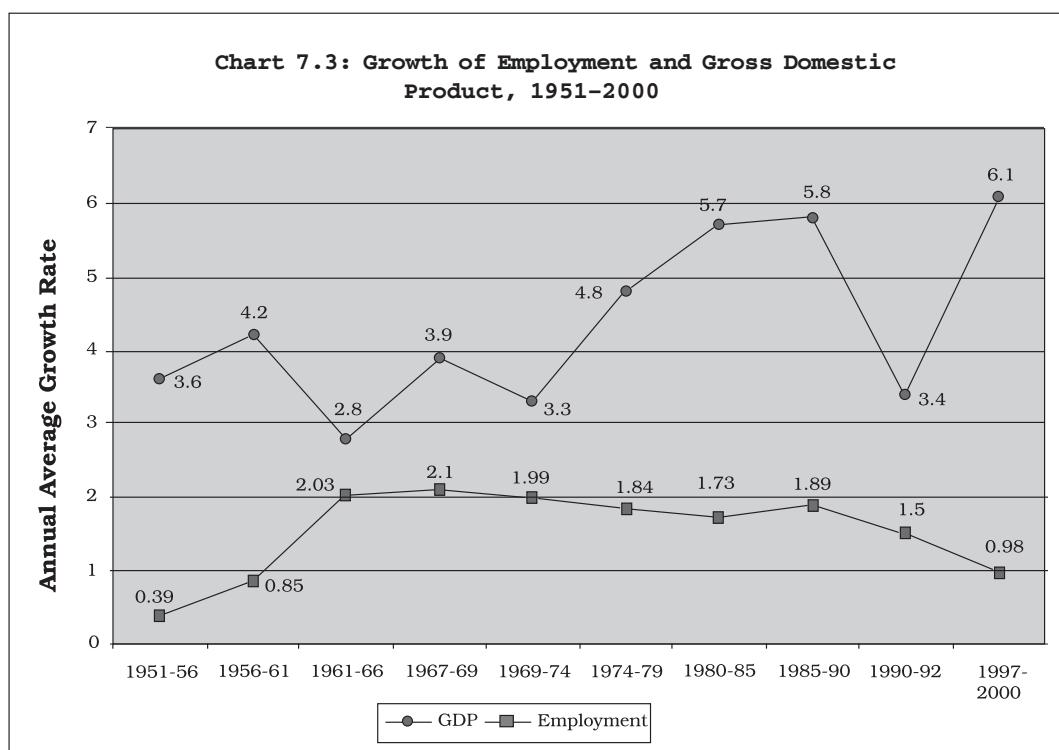


TABLE 7.3

Trends in Employment Pattern (Sector-wise and Status-wise), 1972-2000 (in %)

Item	1972-73	1983	1993-94	1999-2000
Sector				
Primary	74.3	68.6	64	60.4
Secondary	10.9	11.5	16	15.8
Services	14.8	16.9	20	23.8
Total	100.0	100.0	100.0	100.0
Status				
Self-employed	61.4	57.3	54.6	52.6
Regular Salaried Employees	15.4	13.8	13.6	14.6
Casual Wage Labourers	23.2	28.9	31.8	32.8
Total	100.0	100.0	100.0	100.0

last three decades (1972-2000), people have moved from self-employment and regular salaried employment to casual wage work. Yet self-employment continues to be the major employment provider. Scholars call this process of moving from self-employment and regular salaried employment to casual wage work as **casualisation of workforce**. This makes the workers highly vulnerable. How? Look at the case study of Ahmedabad in the preceding section.

**Work These Out**

- Do you know that maintaining employment growth at 2 per cent for a country like India is not an easy thing? Why?
- What will happen if there is no additional employment generated in the economy even though we are able to produce goods and services in the economy? How could jobless growth happen?
- Economists say that if casualisation increases the earning of the people, such phenomenon should be welcomed. Suppose a marginal farmer becomes a full-time agricultural labourer, do you think he will be happy even if he earns more in his daily wage work? Or will a permanent and regular worker of the pharmaceutical industry be happy if he becomes a daily wage labourer, even if his or her overall earnings increase? Discuss in the classroom.



7.7 INFORMALISATION OF INDIAN WORKFORCE

In the previous section we have found that the proportion of casual labourers has been increasing. One of the objectives of development planning in India, since India's independence, has been to provide decent livelihood to its people. It has been envisaged that the industrialisation strategy would bring surplus workers from agriculture to industry with better standard of living as in developed countries. We have seen in the preceding section, that even after 55 years of planned development, three-fifth of Indian workforce depends on farming as the major source of livelihood.

Economists argue that, over the years, the quality of employment has been deteriorating. Even after working for more than 10-20 years, why do some workers not get maternity benefit, provident fund, gratuity and pension? Why does a person working in the private sector get a lower salary as compared to another person doing the same work but in the public sector?

You may find that a small section of Indian workforce is getting regular income. The government, through its **labour laws**, protects them in various ways. This section of the workforce forms **trade unions**, bargains with employers for better wages and other **social security** measures. Who are they? To know this we classify workforce into two categories: workers in formal and informal sectors, which are also referred to as organised and unorganised sectors. All the **public sector establishments** and those **private sector establishments** which employ 10 hired workers or more are called formal sector establishments and those who work in such establishments are formal sector workers. All other enterprises and workers working in those enterprises form the informal sector. Thus, informal sector includes millions of farmers, agricultural labourers, owners of small enterprises and people working in those enterprises as also the self-employed who do not have any hired workers.

Those who are working in the formal sector enjoy social security benefits.

Box 7.1: Formal Sector Employment

The information relating to employment in the formal sector is collected by the Union Ministry of Labour through employment exchanges located in different parts of the country. Do you know who is the major employer in the formal sector in India? In 2001, out of about 28 million formal sector workers, about 20 million workers were employed by the public sector. Here also men form the majority, as women constitute only about one-sixth of the formal sector workforce. Economists point out that the reform process initiated in the early 1990s resulted in a decline in the number of workers employed in the formal sector. What do you think?



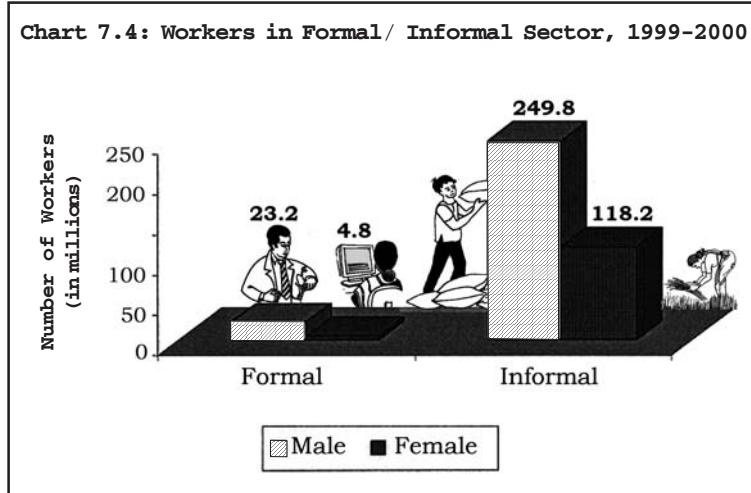


Fig. 7.4 Road side vending: an increasing variety of informal sector employment

They earn more than those in the informal sector. Developmental planning envisaged that as the economy grows, more and more workers would become formal sector workers and the proportion of workers engaged in the informal sector would dwindle. But what has happened in India? Look at the following chart which gives the distribution of workforce in formal and informal sectors.

In Section 7.2, we learnt that there are about 400 million workers in the country. Look at Chart 7.4. There are about 28 million workers in the formal sector. Can you estimate the percentage of people employed in

the formal sectors in the country? About seven per cent ($28/400 \times 100$)! Thus, the rest 93 per cent are in the informal sector. Out of 28 million formal sector workers, only 4.8 million, that is, only 17 per cent ($4.8/28 \times 100$) are women. In the informal sector, male workers account for 69 per cent of the workforce.



Box 7.2: Informalisation in Ahmedabad

Ahmedabad is a prosperous city with its wealth based on the produce of more than 60 textile mills with a labour force of 1,50,000 workers employed in them. These workers had, over the course of the century, acquired a certain degree of income security. They had secure jobs with a living wage; they were covered by social security schemes protecting their health and old age. They had a strong trade union which not only represented them in disputes but also ran activities for the welfare of workers and their families. In the early 1980s, textile mills all over the country began to close down. In some places, such as Mumbai, the mills closed rapidly. In Ahmedabad, the process of closure was long drawn out and spread over 10 years.



Change in the balance of power in a house: an unemployed mill worker peeling garlic whereas his wife has a new job of beedi rolling.

Over this period, approximately over 80,000 permanent workers and over 50,000 non-permanent workers lost their jobs and were driven to the informal sector. The city experienced an economic recession and public disturbances, especially communal riots. A whole class of workers was thrown back from the middle class into the informal sector, into poverty. There was widespread alcoholism and suicides, children were withdrawn from school and sent to work.

Source: Renana Jhabvala, Ratna M. Sudarshan and Jeemol Unni (Ed.) *Informal Economy at Centre Stage: New Structures of Employment*, Sage Publications, New Delhi, 2003, pp.265.

Since the late 1970s, many developing countries, including India, started paying attention to enterprises and workers in the informal sector as employment in the formal sector is not growing. Workers and enterprises in the informal sector do not get regular income; they do not have any protection or

regulation from the government. Workers are dismissed without any compensation. Technology used in the informal sector enterprises is outdated; they also do not maintain any accounts. Workers of this sector live in slums and are squatters. Of late, owing to the efforts of the International Labour Organisation (ILO),



Work These Out

Tick (✓) mark against those which are in the informal sector

- Worker in a hotel which has seven hired workers and three family workers
- A private school teacher in a school which has 25 teachers
- A police constable
- Nurse in a government hospital
- Cycle-rickshaw puller
- The owner of a textile shop employing nine workers
- Driver of a bus company which has more than 10 buses with 20 drivers, conductors and other workers
- Civil engineer working in a construction company which has 10 workers
- Computer operator in the state government office working on a temporary basis
- A clerk in the electricity office.

the Indian government has initiated the modernisation of informal sector enterprises and provision of social security measures to informal sector workers.

7.8 UNEMPLOYMENT

You might have seen people looking for jobs in newspapers. Some look for a job through friends and relatives. In many cities, you might find people standing in some select areas looking for people to employ them for that day's work. Some go to factories and offices and give their bio-data

and ask whether there is any vacancy in their factory or office. Many in the rural areas do not go out and



Fig. 7.5 Unemployed mill workers waiting for casual jobs





Fig. 7.6 Sugar cane cutters: disguised unemployment is common in farm works

ask for a job but stay home when there is no work. Some go to employment exchanges and register themselves for vacancies notified through employment exchanges. NSSO defines unemployment as a situation in which all those who, owing to lack of work, are not working but either seek work through employment exchanges, intermediaries, friends or relatives or by making applications to prospective employers or express their willingness or availability for work under the prevailing condition of work and remunerations. There are a variety of ways by which an unemployed person is identified. Economists define unemployed person as one who is not able to get employment of even one hour in half a day.

There are three sources of data on unemployment : Reports of Census of India, National Sample Survey Organisation's Reports of Employment and Unemployment Situation and

Directorate General of Employment and Training Data of Registration with Employment Exchanges. Though they provide different estimates of unemployment, they do provide us with the attributes of the unemployed and the variety of unemployment prevailing in our country.

Do we have different types of unemployment in our economy? The situation described in the

first paragraph of this section is called open unemployment. Economists call unemployment prevailing in Indian farms as disguised unemployment. What is disguised unemployment? Suppose a farmer has four acres of land and he actually needs only two workers and himself to carry out various operations on his farm in a year, but if he employs five workers and his family members such as his wife and children, this situation is known as disguised unemployment. One study conducted in the late 1950s showed about one-third of agriculture workers in India as disguisedly unemployed.

You may have noticed that many people migrate to an urban area, pick up a job and stay there for some time, but come back to their home villages as soon as the rainy season begins. Why do they do so? This is because work in agriculture is seasonal; there are no employment opportunities in the village for all months in the year. When



Fig. 7.7 Dam construction work is a direct way of employment generation by the government

there is no work to do on farms, men go to urban areas and look for jobs. This kind of unemployment is known as seasonal unemployment. This is also a common form of unemployment prevailing in India.

Though we have witnessed slow growth of employment, have you seen people being unemployed over a very long time? Scholars say that in India, people cannot remain completely unemployed for very long because their desperate economic condition would not allow them to be so. You will rather find them being forced to accept jobs that nobody else would do, unpleasant or even dangerous jobs in unclean, unhealthy surroundings. The government has taken many initiatives to generate acceptable

employment, ensuring at least minimal safety and job satisfaction, through various measures. These will be discussed in the following section.

7.9 GOVERNMENT AND EMPLOYMENT GENERATION

Recently the government passed an Act in Parliament known as the National Rural Employment Guarantee Act 2005. It promises 100 days of guaranteed wage employment to all adult members of rural households who volunteer

to do unskilled manual work. The families, which are living below poverty line, will be covered under the scheme. This scheme is one of the many measures that the government implements to generate employment for those who are in need of jobs in rural areas.

Since independence, the Union and state governments have played an important role in generating employment or creating opportunities for employment generation. Their efforts can be broadly categorised into two – direct and indirect. In the first category, as you have seen in the preceding section, government employs people in various departments for administrative purposes. It also runs industries, hotels and transport companies and hence provides employment directly to workers.



When output of goods and services from government enterprises increases, then private enterprises that supply materials to government enterprises will also raise their output and hence increase the number of employment opportunities in the economy. For example, when a government owned steel company increases its output, it will result in direct increase in employment in that government company. Simultaneously, private companies, which supply inputs to the government steel company and purchase steel from it, will also increase their output and thus employment. This is the indirect generation of employment opportunities in the economy.

In Chapter 4, you would have noticed that many programmes that the government implements, aimed at alleviating poverty, are through employment generation. They are also known as employment generation programmes. All these programmes aim at providing not only employment but also services in areas such as primary health, primary education, rural shelter, rural drinking water, nutrition, assistance for people to buy income and employment generating assets, development of community assets by generating wage employment, construction of houses and sanitation, assistance for constructing houses, laying of rural roads, development of wastelands/degraded lands.

7.10 CONCLUSION

There has been a change in the structure of workforce in India. Newly

emerging jobs are found mostly in the service sector. The expansion of the service sector and the advent of high technology now frequently permit a highly competitive existence for efficient small scale and often individual enterprises or specialist workers side by side with the multinationals. Outsourcing of work is becoming a common practice. It means that a big firm finds it profitable to close down some of its specialist departments (for example, legal or computer programming or customer service sections) and hand over a large number of small piecemeal jobs to very small enterprises or specialist individuals, sometimes situated even in other countries. The traditional notion of the modern factory or office, as a result, has been altering in such a manner that for many the home is becoming the workplace. All of this change has not gone in favour of the individual worker. The nature of employment has become more informal with only limited availability of social security measures to the workers. Moreover, in the last two decades, there has been rapid growth in the gross domestic product, but without simultaneous increase in employment opportunities. This has forced the government to take up initiatives in generating employment opportunities particularly in the rural areas.



Recap

- All those persons who are engaged in various economic activities and hence contribute to national product are workers.
- About two-fifth of the total population in the country is engaged in various economic activities.
- Men particularly rural men, form the major section of workforce in India.
- Majority of workers in India are self-employed. Casual wage labourers and regular salaried employees together account for less than half the proportion of India's workforce.
- About three-fifth of India's workforce depends on agriculture and other allied activities as the major source of livelihood.
- In recent years, the growth of employment has decelerated.
- Post reforms, India has been witness to employment opportunities in the service sector. These new jobs are found mostly in the informal sector and the nature of jobs is also mostly casual.
- Government is the major formal sector employer in the country.
- Acquiring skills and undergoing training are important for getting employment.
- Disguised unemployment is a common form of unemployment in rural India.
- There has been a change in the structure of the workforce in India.
- Through various schemes and policies, the government takes initiatives to generate employment directly and indirectly.



EXERCISES

1. Who is a worker?
2. Define worker-population ratio.
3. Are the following workers – a beggar, a thief, a smuggler, a gambler? Why?





4. Find the odd man out (i) owner of a saloon (ii) a cobbler (iii) a cashier in Mother Dairy (iv) a tuition master (v) transport operator (vi) construction worker.
5. The newly emerging jobs are found mostly in the _____ sector (service/manufacturing).
6. An establishment with four hired workers is known as _____ (formal/informal) sector establishment.
7. Raj is going to school. When he is not in school, you will find him working in his farm. Can you consider him as a worker? Why?
8. Compared to urban women, more rural women are found working. Why?
9. Meena is a housewife. Besides taking care of household chores, she works in the cloth shop which is owned and operated by her husband. Can she be considered as a worker? Why?
10. Find the odd man out (i) rickshaw puller who works under a rickshaw owner (ii) mason (iii) mechanic shop worker (iv) shoeshine boy.
11. The following table shows distribution of workforce in India for the year 1972-73. Analyse it and give reasons for the nature of workforce distribution. You will notice that the data is pertaining to the situation in India 30 years ago!

Place of Residence	Workforce (in millions)		
	Male	Female	Total
Rural	125	69	195
Urban	32	7	39

12. The following table shows the population and worker population ratio for India in 1999-2000. Can you estimate the workforce (urban and total) for India?

Region	Estimates of Population (in crores)	Worker Population Ratio	Estimated No. of Workers (in crores)
Rural	71.88	41.9	$\frac{71.88}{100} \times 41.9 = 30.12$
Urban	28.52	33.7	?
Total	100.40	39.5	?





13. Why are regular salaried employees more in urban areas than in rural areas?
14. Why are less women found in regular salaried employment?
15. Analyse the recent trends in sectoral distribution of workforce in India.
16. Compared to the 1970s, there has hardly been any change in the distribution of workforce across various industries. Comment.
17. Do you think that in the last 50 years, employment generated in the country is commensurate with the growth of GDP in India? How?
18. Is it necessary to generate employment in the formal sector rather than in the informal sector? Why?
19. Victor is able to get work only for two hours in a day. Rest of the day, he is looking for work. Is he unemployed? Why? What kind of jobs could persons like Victor be doing?
20. You are residing in a village. If you are asked to advice the village panchayat, what kinds of activities would you suggest for the improvement of your village which would also generate employment.
21. Who is a casual wage labourer?
22. How will you know whether a worker is working in the informal sector?



SUGGESTED ADDITIONAL ACTIVITIES

1. Select a region, say a street or colony, and divide it into 3-4 sub-regions. Conduct a survey by which you can collect the details of activity each person living there is engaged in. Derive the worker-population ratio for all the regions. Interpret the results for differences in worker-population ratio for the different sub-regions.
2. Suppose 3-4 groups of students are given different regions of a state. One region is mainly engaged in cultivation of paddy. In another region, coconut is the main plantation. The third region is a coastal region where fishing is the main activity. The fourth region has a river nearby with a lot of livestock rearing activities. Ask all the four groups to develop a report on what kind of employment could be generated in the four regions.
3. Visit the local library and ask for *Employment News*, a weekly published by the Government of India. Go through each issue for the last two months. There will be seven issues. Select 25 advertisements and





fill in the following table (expand the table as needed) . Discuss the nature of jobs in the classroom.

<i>Items</i>	<i>Advertisement 1</i>	<i>Advertisement 2</i>
<ol style="list-style-type: none"> 1. Name of Office 2. Department/company 3. Private/public/joint venture 4. Name of the post 5. Sector-primary/secondary/ service 6. Number of posts/vacancies 7. Qualification required 		

4. You might notice, in your locality, a variety of works being done by the government, for example laying of roads, desilting of tanks, construction of school buildings, hospital and other government offices, construction of check dams and houses for the poor etc. Prepare a critical assessment report on one such activity. The issues covered could be the following (i) how the work was identified (ii) amount sanctioned (iii) contribution of local people, if any (iv) number of persons involved – both men and women (v) wages paid (vi) is it really required in that area and other critical comments on the implementation of the scheme under which the work is being carried out.
5. In recent years, you may have noticed that many voluntary organisations also take initiatives to generate employment in hilly and dry land regions. If you find such initiatives in your locality, visit and prepare a report.



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INFRASTRUCTURE

After studying this chapter, the learners will

- understand the main challenges India faces in the areas of social and economic infrastructure
- know the role of infrastructure in economic development
- understand the role of energy as a critical component of infrastructure
- understand the problems and prospects of the energy and health sectors
- understand the health infrastructure of India.



"Many things we need can wait, the child cannot. To him, we cannot say, 'tomorrow'. His name is today."

Gabriella Mistral—Chilean poet

So is the Infrastructure.

8.1 INTRODUCTION

Have you ever thought of why some states in India are performing much better than others in certain areas? Why do Punjab, Haryana and Himachal Pradesh prosper in agriculture and horticulture? Why are Maharashtra and Gujarat industrially more advanced than others? How come Kerala, popularly known as 'God's own country', has excelled in literacy, health care and sanitation and also attracts tourists in such large numbers? Why does Karnataka's information technology industry attract world attention?

It is all because these states have better infrastructure in the areas they excel than other states of India. Some have better irrigation facilities. Others have better transportation facilities, or are located near ports which makes raw materials required for various manufacturing industries easily

accessible. Cities like Bangalore in Karnataka attract many multinational companies because they provide world-class communication facilities. All these support structures, which facilitate development of a country, constitute its infrastructure. How then does infrastructure facilitate development?

8.2 WHAT IS INFRASTRUCTURE?

Infrastructure provides supporting services in the main areas of industrial and agricultural production, domestic and foreign trade and commerce. These services include roads, railways, ports, airports, dams, power stations, oil and gas pipelines, telecommunication facilities, the country's educational system including schools and colleges, health system including hospitals, sanitary system including clean drinking water facilities and the monetary system including banks, insurance and other financial institutions. Some of these facilities have a direct impact on the working of the system of production while others give indirect support by building the social sector of the economy.



Fig. 8.1 Roads are the missing link with growth





Fig. 8.2 Schools: an important infrastructure for a nation

Some divide infrastructure into two categories — economic and social. Infrastructure associated with energy, transportation and communication are included in the former category whereas those related to education, health and housing are included in the latter.

Work This Out

➤ In your locality or neighbourhood you might be using a variety of infrastructure. List all of them. Your locality may also be requiring a few more. List them separately.

speedy and large-scale transport of seeds, pesticides, fertilisers and the produce by making use of modern roadways, railways and shipping facilities. Modern agriculture also has to depend on insurance and banking facilities because of its need to operate on a very large scale.

Infrastructure contributes to economic development of a country both by increasing the productivity of the factors of production and improving the quality of life of its people. Inadequate infrastructure can have multiple adverse effects on health. Improvements in water supply and sanitation have a large impact by reducing **morbidity** (meaning proneness to fall ill) from major waterborne diseases and reducing the severity of disease when it occurs. In addition to the obvious linkage between water and sanitation and health, the quality of transport and communication infrastructure can affect access to health care. Air pollution and safety hazards connected to transportation also affect morbidity, particularly in densely populated areas.

8.3 RELEVANCE OF INFRASTRUCTURE

Infrastructure is the support system on which depends the efficient working of a modern industrial economy. Modern agriculture also largely depends on it for

8.4 THE STATE OF INFRASTRUCTURE IN INDIA

Traditionally, the government has been solely responsible for developing the

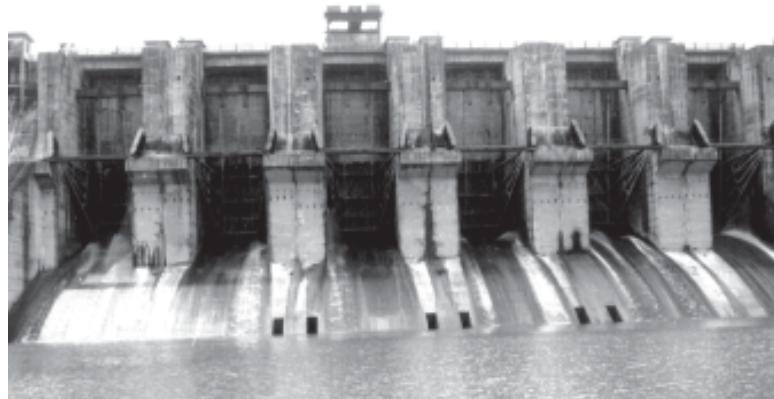


Fig. 8.3 Dams: temples of development

country's infrastructure. But it was found that the government's investment in infrastructure was inadequate. Today, the private sector by itself and also in joint partnership with the public sector, has started playing a very important role in infrastructure development.

A majority of our people live in rural areas. Despite so much technical progress in the world, rural women are still using bio-fuels such as crop residues, dung and fuel wood to meet their energy requirement. They walk long distances to fetch fuel, water and other basic needs. The census 2001 shows that in rural India only 56 per cent households have an electricity connection and 43 per cent still use kerosene. About 90 per cent of the

rural households use bio-fuels for cooking. Tap water availability is limited to only 24 per cent rural households. About 76 per cent of the population drinks water from open sources such as wells, tanks, ponds, lakes, rivers, canals, etc. Another

study conducted by the National Sample Survey Organisation noted that by 1996, access to improved sanitation in rural areas was only six per cent.

Look at Table 8.1 which shows the state of some infrastructure in India in comparison to a few other countries. Though it is widely understood that infrastructure is the foundation of development, India is yet to wake up to the call. India invests only 5 per cent



Fig. 8.4 Safe drinking water with pucca house: still a dream



TABLE 8.1

Some Infrastructure in India and other Countries, 2003

Country	Investment in Infrastructure as a % GDP	Access to Safe Drinking Water (%)	Access to Improved Sanitation (%)	Mobile Users/ 1000 People	Phone Lines/ 1000 People	Power Generation (kw 1000)
China	20	75	38	66	113	230
Hong Kong	4	100	100	817	560	1630
India	5	84	28	4	33	107
Korea	7	92	63	583	449	1067
Pakistan	2	90	62	2	20	109
Singapore	5	100	100	684	528	1887
Indonesia	14	76	66	18	28	97

Source: World Development Report 2005, The World Bank, Washington DC, 2004.

**Work These Out**

- While reading newspapers you will come across terms like *Bharat nirman*, Special Purpose Vehicle (SPV), Special Economic Zones (SEZ), Build Operate Transfer (BOT), Private Public Partnership (PPP) etc. Make a scrapbook of news items containing these terms. How are these terms related to infrastructure?
- Using the references at the end of the chapter, collect the details of other infrastructure.

of its GDP on infrastructure, which is far below that of China and Indonesia.

Some economists have projected that India will become the third biggest economy in the world a few decades from now. For that to happen, India will

have to boost its infrastructure investment. In any country, as the income rises, the composition of infrastructure requirements changes significantly. For low-income countries, basic infrastructure services like irrigation, transport and power are more important. As economies mature and most of their basic consumption demands are met, the share of agriculture in the economy shrinks and more service related infrastructure is required. This is why the share of power and telecommunication infrastructure is greater in high-income countries.

Thus, development of infrastructure and economic development go hand in hand. Agriculture depends, to a considerable extent, on the adequate expansion and development of irrigation facilities. Industrial progress depends on the development of power and electricity generation, transport and communications. Obviously, if proper attention is not paid to the development of infrastructure, it is likely to act as a



severe constraint on economic development. In this chapter the focus will be on only two kinds of infrastructure—those associated with energy and health.

8.5 ENERGY

Why do we need energy? In what forms is it available? Energy is a critical aspect of the development process of a nation. It is, of course, essential for industries. Now it is used on a large scale in agriculture and related areas like production and transportation of fertilisers, pesticides and farm equipment. It is required in houses for cooking, household lighting and heating. Can you think of producing a commodity or service without using energy?

Sources of Energy: There are commercial and non-commercial



Fig. 8.6 Bullock carts still play a crucial role in rural transportation market

sources of energy. Commercial sources are coal, petroleum and electricity as they are bought and sold. They account for over 50 per cent of all energy sources consumed in India. Non-commercial sources of energy are firewood, agricultural waste and dried dung. These are non-commercial as they are found in nature/forests.

While commercial sources of energy are generally exhaustible (with the exception of hydropower), non-commercial sources are generally renewable. More than 60 per cent of Indian households depend on traditional sources of energy for meeting their regular cooking and heating needs.



Fig.8.5 Fuel wood is the major source of energy

Non-conventional Sources of Energy: Both commercial and non-commercial sources of energy are known as



conventional sources of energy. There are three other sources of energy which are commonly termed as non-conventional sources — solar energy, wind energy and tidal power. Being a tropical country, India has almost unlimited potential for producing all three types of energy if some appropriate cost effective technologies that are already available are used. Even cheaper technologies can be developed.

Consumption Pattern of Commercial Energy:

At present, commercial energy consumption makes up about 65 per



Fig. 8.8 Solar energy has great prospects

cent of the total energy consumed in India. This includes coal with the largest share of 55 per cent, followed by oil at 31 per cent, natural gas at 11 per cent and hydro energy at 3 per cent. Non-commercial energy sources consisting of firewood, cow dung and agricultural wastes account for over 30 per cent of the total energy consumption. The critical feature of India's energy sector, and its linkages to the economy, is the import-dependence on crude and petroleum products, which is likely to grow to more than 100 per cent in the near future.

The sectoral pattern of consumption of commercial energy is given in Table 8.2. The transport sector was the largest consumer of commercial energy in 1953-54. However, there has been continuous fall in the share of the transport sector while the share of the industrial sector has been increasing. The share of oil and gas is highest among all commercial energy consumption. With the rapid rate of



Fig. 8.7 Wind mill : another source of generating power

TABLE 8.2

Trends in Sectoral Share of Commercial Energy Consumption (in %)

Sector	1953-54	1970-71	1990-91	1996-97
Household	10	12	12	12
Agriculture	01	03	08	09
Industries	40	50	45	42
Transport	28	22	22	22
Others	5	07	13	15
Total	100	100	100	100

Source: Ninth Five year Plan, Vol. II Chapter 6, Planning Commission, Government of India, New Delhi.

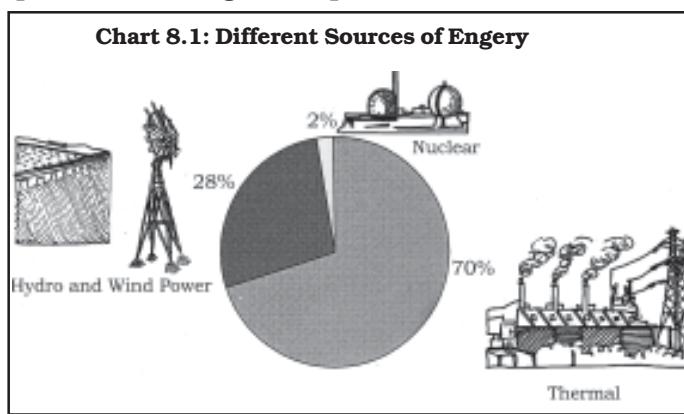
economic growth, there has been a corresponding increase in the use of energy.

Power/Electricity: The most visible form of energy, which is often identified with progress in modern civilization, is power, commonly called electricity; it is one of the most critical components of infrastructure that determines the economic development of a country. The growth rate of demand for power is generally higher than the GDP growth rate. Studies point that in order to have 8 per cent GDP growth per annum,

power supply needs to grow around 12 per cent annually.

Electricity is a secondary form of energy produced from primary energy resources including coal, hydrocarbons, hydro energy, nuclear energy, renewable energy etc. Primary energy consumption takes into account the direct and indirect consumption of fuels. It cannot give a complete picture in respect of the ultimate consumption of energy by consumers. The secondary sources in India consist of coal, oil, electricity and natural gas.

In India, in 2003-04, thermal sources accounted for almost 70 per cent of the power generation capacity. Hydro, wind and nuclear sources accounted for 28 and 2.4 per cent respectively. India's energy policy encourages two energy sources — hydel and wind—as they do not rely on fossil fuel and, hence,





Work These Out

- Among other sources of energy, you would have noticed that a marginal share of energy comes from nuclear power. Why? Scholars point out that with rising oil and coal costs, nuclear power is the best option. Discuss or debate in your class.
- Solar energy, wind power and power produced from tides are going to be future sources of energy. What are their comparative merits and demerits? Discuss in the class.

avoid carbon emissions. This has resulted in faster growth of electricity produced from these two sources.

Atomic energy is an important source of electric power; it has environmental advantages and is also likely to be economical in the long run. At present, nuclear energy accounts for only 2.4 per cent of total primary

energy consumption, against a global average of 13 per cent. This is far too low.

Some Challenges in the Power Sector:

Electricity generated by various power stations is not consumed entirely by ultimate consumers; a part is consumed by power station auxiliaries. Also, while transmitting power, a portion is lost in transmission. What we get in our houses, offices and factories is the net availability.

Some of the challenges that India's power sector faces today are (i) India's installed capacity to generate electricity is not sufficient to feed an annual economic growth of 7 per cent. In order to meet the growing demand for electricity, between 2000 and 2012, India needs to add 1,00,000 MW of new capacity, whereas, at present, India is able to add only 20,000 MW a year. Even the installed capacity is under-utilised because plants are not run properly (ii) State Electricity Boards (SEBs), which distribute electricity, incur losses which exceed Rs 500

Box 8.1: Making a Difference

Thane city is acquiring a brand new image — an environment friendly make over. Large-scale use of solar energy, which was considered a somewhat far-fetched concept, has brought in real benefits and results in cost and energy saving. It is being applied to heat water, power traffic lights and advertising hoardings. And leading this unique experiment is the Thane Municipal Corporation. It has made compulsory for all new buildings in the city to install solar water heating system. (Appeared in the column, Making a Difference, *Outlook*, 01 August 2005).

- Can you suggest such other ideas to use non-conventional energy in a better way?



Box 8.2: Power Distribution: The Case of Delhi

Since independence, power management in the capital has changed hands four times. **The Delhi State Electricity Board (DSEB)** was set up in 1951. This was succeeded by the **Delhi Electric Supply Undertaking (DESU)** in 1958. **The Delhi Vidyut Board (DVB)** came into existence as SEB in February 1997. Now it rests with two leading power majors of the country following the privatisation of the DVB. Reliance Energy Ltd owned **BSES** manages power distribution in two-thirds of Delhi through its two companies (known as **DISCOMS**): south and west areas are handled by **BSES Rajdhani Power Limited** whereas **BSES Yamuna Power Limited** looks after central and east areas. **The Tata Power-owned NDPL** distributes power to the north and the north-west of the capital. Both the discoms further have 23 (220 KV) grids between them to supply power to the approximately 28 lakh consumers in the capital area. The tariff structure and other regulatory issues are monitored by the **Delhi Electricity Regulatory Commission (DERC)**. Though it was expected that there will be greater improvement in power distribution and the consumers will benefit in a major way, experience shows unsatisfactory results.

billion. This is due to transmission and distribution losses, wrong pricing of electricity and other inefficiencies. Some scholars also say that distribution of electricity to farmers is the main reason for the losses; electricity is also stolen in different areas which also adds to the woes of SEBs (iii) private sector power generators are yet to play their role in a major way; same is the case with

foreign investors (iv) there is general public unrest due to high power tariffs and prolonged power cuts in different parts of the country (v) thermal power plants which are the mainstay of India's power sector are facing shortage of raw material and coal supplies.

Thus, continued economic development and population growth are driving the demand for energy faster than what India is producing currently.

Box 8.3: Saving Energy : Promoting the Case of Compact Fluorescent Lamps (CFL)

According to the Bureau of Energy Efficiency (BEE), CFLs consume 80 per cent less power as compared to ordinary bulbs. As put by a CFL manufacturer, Indo-Asian, replacement of one million 100-watt bulbs with 20 watt CFLs can save 80 megawatt in power generation. This amounts to saving Rs 400 crore at the rate of institution cost of Rs 5 crore per megawatt.

Source: *Use Common Sense to Solve Power Crisis*, by Naresh Minocha in Tehelka, 01 October 2005.





Work These Out

- What kind of energy do you use in your house? Find out from your parents the amount they spend in a month on different types of energy.
- Who supplies power to you and where is it generated? Can you think of other cheaper alternative sources which could help in lighting your house or cooking food or for travelling to far away places?
- Look at the following table. Do you think energy consumption is an effective indicator of development?

<i>Country</i>	<i>Per Capita Income (in US dollars) in 2003 (ppp)</i>	<i>Per Capita Consumption of Energy (kg of oil equivalent) in 2001</i>
India	2,880	515
Indonesia	3,210	729
Egypt	3,940	737
U.K.	27,650	3982
Japan	28,620	4099
U.S.A.	37,500	7996

Source: *World Development Report 2005 and World Development Indicators 2004.*

- Find out how power is distributed in your area/state. Also find out the total electricity demand of your city and how it is being met.
- You might notice people using variety of methods to save electricity and other energy. For instance, while using the gas stove, some suggestions are made by gas agencies for using the gas efficiently and economically. Discuss them with your parents and the elderly, note down the points and discuss them in class.

More public investment, better research and development efforts, exploration, technological innovation and use of renewable energy sources can ensure additional supply of electricity. Though the private sector has made some progress, it is necessary to tap this sector to come forward and produce power on a large scale. One also has to appreciate the efforts made in this regard. For example, India is already

the world's fifth largest producer of wind power, with more than 95 per cent investments coming from the private sector. Greater reliance on renewable energy resources offers enormous economic, social and environmental benefits.

8.6 HEALTH

Health is not only absence of disease but also the ability to realise one's





potential. It is a yardstick of one's well being. Health is the holistic process related to the overall growth and development of the nation. Though the twentieth century has seen a global transformation in human health unmatched in history, it may be difficult to define the health status of a nation in terms of a single set of measures. Generally scholars assess people's health by taking into account indicators like infant mortality and maternal mortality rates, life expectancy and nutrition levels, along with the incidence of communicable and non-communicable diseases.

Development of health infrastructure ensures a country of healthy manpower for production of goods and services. In recent times, scholars argue that people are entitled to health care facilities. It is the responsibility of the government to

ensure the right to healthy living. Health infrastructure includes hospitals, doctors, nurses and other para-medical professionals, beds, equipment required in hospitals and a well-developed pharmaceutical industry. It is also true that mere presence of health infrastructure is not sufficient to have healthy people: the same should be accessible to all the people. Since, the initial stages of planned development, policy-makers envisaged that no individual should fail to secure medical care, curative and preventive, because of the inability to pay for it. But are we able to achieve this vision? Before we discuss various health infrastructure, let us discuss the status of health in India.

State of Health Infrastructure: The government has the constitutional obligation to guide and regulate all



Fig. 8.9 Health infrastructure is still lacking in large parts of the country





health related issues such as medical education, adulteration of food, drugs and poisons, medical profession, vital statistics, mental deficiency and lunacy. The Union Government evolves broad policies and plans through the Central Council of Health and Family Welfare. It collects information and renders financial and technical assistance to state governments, union territories and other bodies for implementation of important health programmes in the country.

Over the years, India has built up a vast health infrastructure and manpower at different levels. At the village level, a variety of hospitals have been set up by the government. India also has a large number of hospitals run by voluntary agencies and the private sector. These hospitals are manned by professionals and para-medical professionals trained in medical, pharmacy and nursing colleges.

Since independence, there has been a significant expansion in the physical provision of health services. During 1951-2000, the number of hospitals and dispensaries increased from 9,300 to 43,300 and hospital beds from 1.2 to 7.2 million (see Table 8.3); during 1951-99, nursing personnel increased from 0.18 to 8.7 lakh and allopathic doctors from 0.62 to 5.0 lakh. Expansion of health infrastructure has resulted in the eradication of smallpox, guinea worms and the near eradication of polio and leprosy.

Private Sector Health Infrastructure: In recent times, while the public health sector has not been so successful in

TABLE 8.3

**Public Health Infrastructure in India,
1951-2000**

Item	1951	1981	2000
Hospitals	2694	6805	15888
Hospital/ dispensary beds	117000	504538	719861
Dispensaries	6600	16745	23065
PHCs	725	9115	22842
Subcentres	-	84736	137311
CHCs	-	761	3043

Source: *National Commission on Macroeconomics and Health, Ministry of Health and Family Welfare, Government of India, New Delhi, 2005.*

delivering the goods about which we will study more in the next section, private sector has grown by leaps and bounds. More than 70 per cent of the hospitals in India are run by the private sector; they control nearly two-fifth of beds available in the hospitals. Nearly 60 per cent of dispensaries are run by the same private sector. They provide healthcare for 80 per cent of outpatients and 46 per cent of in-patients.

In recent times, private sector has been playing a dominant role in medical education and training, medical technology and diagnostics, manufacture and sale of pharmaceuticals, hospital construction and the provision of medical services. In 2001-02, there were more than 13 lakh medical enterprises employing 22 lakh people; more than 80 per cent of them are single person owned, and operated by one

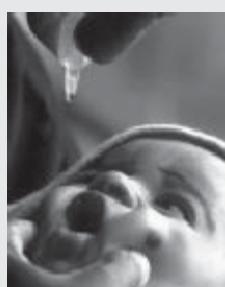




Box 8.5: Health System in India

India's health infrastructure and health care is made up of a three-tier system —primary, secondary and tertiary. Primary health care includes education concerning prevailing health problems and methods of identifying, preventing and controlling them; promotion of food supply and proper nutrition and adequate supply of water and basic sanitation; maternal and child health care; immunisation against major infectious diseases and injuries; promotion of mental health and provision of essential drugs.

Auxiliary Nursing Midwife (ANM) is the first person who provides primary healthcare in rural areas. In order to provide primary health care, hospitals have been set up in villages and small towns which are generally manned by a single doctor, a nurse and a limited quantity of medicines. They are known as Primary Health Centres (PHC), Community Health Centres (CHC) and sub-centres. When the condition of a patient is not managed by PHCs, they are referred to secondary or tertiary hospitals. Hospitals which have better facilities for surgery, X-ray, Electro Cardio Gram (ECG) are called secondary health care institutions. They function both as primary health care provider and also provide better healthcare facilities. They are mostly located in district headquarters and in big towns. All those hospitals which have advanced level equipment and medicines and undertake all the complicated health problems, which could not be managed by primary and secondary hospitals, come under the tertiary sector.



Polio drops being given to an infant



A health awareness meeting in progress

The tertiary sector also includes many premier institutes which not only impart quality medical education and conduct research but also provide specialised health care. Some of them are — All India Institute of Medical Science, New Delhi; Post Graduate Institute, Chandigarh; Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry; National Institute of Mental Health and Neuro Sciences, Bangalore and All India Institute of Hygiene and Public Health, Kolkata.

Source: *Report of the National Commission on Macroeconomics and Health, 2005.*





Box 8.6: Medical Tourism — A great opportunity

You might have seen and heard on TV news or read in newspapers about foreigners flocking to India for surgeries, liver transplants, dental and even cosmetic care. Why? Because our health services combine latest medical technologies with qualified professionals and is cheaper for foreigners as compared to costs of similar health care services in their own countries. In the year 2004-05, as many as 1,50,000 foreigners visited India for medical treatment. And this figure is likely to increase by 15 per cent each year. Experts predict that by 2012 India could earn more than 100 billion rupees through such 'medical tourism'. **Health infrastructure** can be upgraded to attract more foreigners to India.

person occasionally employing a hired worker. Scholars point out that the private sector in India has grown independently without any major regulation; some private practitioners are not even registered doctors and are known as quacks.

Since the 1990s, owing to liberalisation measures, many non-resident Indians and industrial and pharmaceutical companies have set up state-of-the-art super-specialty hospitals to attract India's rich and medical tourists

(see Box 8.6). But since the poor can depend only on government hospitals, the role of government in providing healthcare remains important.

Indian Systems of Medicine (ISM): It includes six systems: Ayurveda, Yoga, Unani, Siddha, Naturopathy and Homeopathy (AYUSH). At present there are 3,004 ISM hospitals, 23,028 dispensaries and as many as 6,11,431 registered practitioners in India. But little has been done to set up a

Box 8.7: Community and Non-Profit Organisations in Healthcare

One of the important aspects of a good healthcare system is community participation. It functions with the idea that the people can be trained and involved in primary healthcare system. This method is already being used in some parts of our country. SEWA in Ahmedabad and ACCORD in Nilgiris could be the examples of some such NGOs working in India. Trade unions have built alternative health care services for their members and also to give low-cost and rational care to people from nearby villages. The most well-known and pioneering initiative in this regard has been Shahid Hospital, built in 1983 and sustained by the workers of CMS (Chhattisgarh Mines Shramik Sangh) in Durg, Madhya Pradesh. A few attempts have also been made by rural organisations to build alternative healthcare initiatives. One example is in Thane, Maharashtra, where in the context of a tribal people's organisation, *Kashthakari Sangathan*, trains women health workers at the village level to treat simple illnesses at minimal cost.



TABLE 8.4

Indicators of Health in India in Comparison with other Countries

<i>Indicator</i>	<i>India</i>	<i>China</i>	<i>USA</i>	<i>Sri Lanka</i>
Infant Mortality Rate/1,000 live births	68	30	2	8
Under-5 mortality /1,000 live-births	87	37	8	15
Birth by skilled attendants	43	97	99	97
Fully immunised	67	84	93	99
Health expenditure as % of GDP	4.8	5.8	14.6	3.7
Government share of total expenditure (%)	21.3	33.7	44.9	48.7
Government health spending to total government spending (%)	4.4	10	23.1	6
Per capita spending in international dollars	96	261	5274	131

Source: *World Health Report 2005*

framework to standardise education or to promote research. ISM has huge potential and can solve a large part of our health care problems because they are effective, safe and inexpensive.

Indicators of Health and Health Infrastructure—A Critical Appraisal:

As pointed out earlier, the health status of a country can be assessed through indicators such as infant mortality and maternal mortality rates, life expectancy and nutrition levels, along with the incidence of communicable and non-communicable diseases. Some of the health indicators, and India's position, are given in Table 8.4. Scholars argue that there is greater scope for the role of government in the health sector. For instance, the table shows expenditure on health sector as five per cent of total GDP. This is abysmally low as compared to other countries, both developed and developing.

One study points out that India has about 17 per cent of the world's population but it bears a frightening 20 per cent of the global burden of diseases (GBD). GBD is an indicator used by experts to gauge the number of people dying prematurely due to a particular disease as well as the number of years spent by them in a state of 'disability' owing to the disease.

In India, more than half of GBD is accounted for by communicable diseases such as diarrhoea, malaria and tuberculosis. Every year around five lakh children die of water-borne diseases. The danger of AIDS is also looming large. Malnutrition and inadequate supply of vaccines lead to the death of 2.2 million children every year.

At present, less than 20 per cent of the population utilises public health facilities. One study has pointed out that only 38 per cent of the PHCs have the required number of doctors and



Work These Out

- Visit the primary hospitals located in your area or neighbourhood. Also collect the details of the number of private hospitals, medical laboratories, scan centres, medical shops and other such facilities in your locality.
- Debate in the class on the topic — ‘Should we build an army of *tais* (midwives) to take care of the poor, who cannot afford the services of the thousands of medical graduates who pass out of our medical colleges every year?’
- A study estimates that medical costs alone push down 2.2 per cent of the population below the poverty line each year. How?
- Visit a few hospitals in your locality. Find out the number of children receiving immunisation from them. Ask the hospital staff about the number of children immunised 5 years ago. Discuss the details in class.
- Two students — Leena Talukdar (16) and Sushanta Mahanta (16) of Assam — have developed a herbal mosquito repellent ‘jag’ using a few locally available medicinal plants — paddy straw, husk and dried garbage. Their experiment has been successful (*Shodh Yatra* (innovation), *Yojana*, September 2005). If you know anyone whose innovative methods improve the health status of people or if you know someone who has a knowledge of medicinal plants and heals the ailments of people, speak to them and bring them to class or collect information about why and how they treat ailments. Share this with your class. You can also write to local newspapers or magazines.
- Do you think Indian cities could be provided with world-class health infrastructure so that they will become attractive for medical tourists? Or should the government concentrate on providing health infrastructure for people in rural areas? What should be the priority of the government? Debate.
- Find out NGOs working in your area in the field of healthcare. Collect information about their activities and discuss in the classroom.

only 30 per cent of the PHCs have sufficient stock of medicines.

Urban-Rural and Poor-Rich Divide: Though 70 per cent of India’s population lives in rural areas, only one-fifth of its hospitals are located in rural areas. Rural India has only about half the number of dispensaries. Out

of about 7 lakh beds, roughly 11 per cent are available in rural areas. Thus, people living in rural areas do not have sufficient medical infrastructure. This has led to differences in the health status of people. As far as hospitals are concerned, there are only 0.36 hospitals for every one lakh people in rural areas while urban areas have 3.6



Work These Out

- The overall health status of the country has certainly improved through the years. Life expectancy has gone up, infant mortality rate has come down. Small pox has been eradicated and the goal to eradicate leprosy and polio looks achievable. But these statistics seem good only when you look at them in isolation. Compare these with the rest of the world. What do you find?
- Observe your class for a month and find out why some students remain absent. If it is due to health problems then find out what kind of medical problem they had. Collect the details of the problem, the nature of treatment they took and the amount of money their parents spent on their treatment. Discuss the information in class.

hospitals for the same number of people. The PHCs located in rural areas do not offer even X-ray or blood testing facilities which, for a city dweller, constitutes basic healthcare. States like Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh are relatively lagging behind in health care facilities. In the rural areas, the percentage of people who have no access to proper care has risen from 15 in 1986 to 24 in 2003.

Villagers have no access to any specialised medical care like paediatrics, gynaecology, anaesthesia and obstetrics. Even though 165 recognised medical colleges produce

12,000 medical graduates every year, the shortage of doctors in rural areas persists. While one-fifth of these doctor graduates leave the country for better monetary prospects, many others opt for private hospitals which are mostly located in urban areas.

The poorest 20 per cent of Indians living in both urban and rural areas spend 12 per cent of their income on healthcare while the rich spend only 2 per cent. What happens when the poor fall sick? Many have to sell their land or even pledge their children to afford treatment. Since government-run hospitals do not provide sufficient



Fig.8.10 Despite availing of various healthcare measures, maternal health is cause for concern



facilities, the poor are driven to private hospitals which makes them indebted forever. Or else they opt to die.

Women's Health: Women constitute about half the total population in India. They suffer many disadvantages as compared to men in the areas of education, participation in economic activities and health care. The deterioration in the child sex ratio in the country from 945 in 1991 to 927, as revealed by the census of 2001, points to the growing incidence of female foeticide in the country. Close to 3,00,000 girls under the age of 15 are not only married but have already borne children at least once. More than 50 per cent of married women between the age group of 15 and 49 have anaemia and nutritional anaemia caused by iron deficiency, which has contributed to 19 per cent of maternal deaths. Abortions are also a major cause of maternal morbidity and mortality in India.

Health is a vital public good and a basic human right. All citizens can get better health facilities if public health services are decentralised. Success in the long-term battle against diseases depends on education and efficient health infrastructure. It is, therefore, critical to create awareness on health and hygiene and provide efficient systems. The role of telecom and IT sectors cannot be neglected in this process. The effectiveness of healthcare programmes also rests on primary healthcare. The ultimate goal should be to help people move towards a

better quality of life. Private-public partnership can effectively ensure reliability, quality and affordability of both drugs and medicare. There is a sharp divide between the urban and rural healthcare in India. If we continue to ignore this deepening divide, we run the risk of destabilising the socio-economic fabric of our country. In order to provide basic healthcare to all, accessibility and affordability need to be integrated in our basic health infrastructure.

8.7 CONCLUSION

Infrastructure, both economic and social, is essential for the development of a country. As a support system, it directly influences all economic activities by increasing the productivity of the factors of production and improving the quality of life. In the last six decades of independence, India has made considerable progress in building infrastructure, nevertheless, its distribution is uneven. Many parts of rural India are yet to get good roads, telecommunication facilities, electricity, schools and hospitals. As India moves towards modernisation, the increase in demand for quality infrastructure, keeping in view their environmental impact, will have to be addressed. The reform policies by providing various concessions and incentives, aim at attracting the private sector in general and foreign investors in particular. While assessing the two infrastructure—energy and health—it is clear that there is scope for equal access to infrastructure for all.



Recap

- Infrastructure is a network of physical facilities and public services and with this social infrastructure is equally important to support it. It is an important base for economic development of the country.
- Infrastructure needs to be upgraded from time to time to maintain high economic growth rate. Better infrastructural facilities have attracted more foreign investments and tourists to India recently.
- It is important to develop rural infrastructural facilities.
- Public and private partnership is required to bring in huge funds for infrastructural development.
- Energy is very vital for rapid economic growth. There is a big gap between consumer demand and supply of electricity in India.
- Non-conventional sources of energy can be of great support to meet shortage of energy.
- The power sector is facing a number of problems at generation, transmission and distribution levels.
- Health is a yardstick of human well-being, physical as well as mental.
- There has been significant expansion in physical provision of health services and improvements in health indicators since independence.
- Public health system and facilities are not sufficient for the bulk of the population.
- There is a wide gap between rural-urban areas and between poor and rich in utilising health care facilities.
- Women's health across the country has become a matter of great concern with reports of increasing cases of female foeticide and mortality.
- Regulated private sector health services can improve the situation and, at the same time, NGOs and community participation are very important in providing health care facilities and spreading health awareness.
- Natural systems of medicine have to be explored and used to support public health. There is a great scope of advancement of medical tourism in India.





EXERCISES

1. Explain the term 'infrastructure'.
2. Explain the two categories into which infrastructure is divided. How are both interdependent?
3. How do infrastructure facilities boost production?
4. Infrastructure contributes to the economic development of a country. Do you agree? Explain.
5. What is the state of rural infrastructure in India?
6. What is the significance of 'energy'? Differentiate between commercial and non-commercial sources of energy.
7. What are the three basic sources of generating power?
8. What do you mean by transmission and distribution losses? How can they be reduced?
9. What are the various non-commercial sources of energy?
10. Justify that energy crisis can be overcome with the use of renewable sources of energy.
11. How has the consumption pattern of energy changed over the years?
12. How are the rates of consumption of energy and economic growth connected?
13. What problems are being faced by the power sector in India?
14. Discuss the reforms which have been initiated recently to meet the energy crisis in India.
15. What are the main characteristics of health of the people of our country?
16. What is a 'global burden of disease'?
17. Discuss the main drawbacks of our health care system.
18. How has women's health become a matter of great concern?
19. Describe the meaning of public health. Discuss the major public health measures undertaken by the state in recent years to control diseases.
20. List out the six systems of Indian medicine.
21. How can we increase the effectiveness of health care programmes?



SUGGESTED ADDITIONAL ACTIVITIES

1. Did you know that to bring a megawatt of electricity to your homes, 30-40 million rupees are spent? Building a new power plant would cost millions. Isn't this reason enough for you to begin conserving energy in your house? Electricity saved is money saved; in fact, it is worth much more than electricity generated. Every time your electricity bill reaches home, you realise there is no need for so many lights and fans around you. All you have to do is be slightly more alert and careful. And the best thing is, you can start right away. Involve the rest of your family in this effort and see the difference. Note down the monthly consumption of electricity in your house. See the difference in the bill amount after you apply energy saving tactics.
2. Find out what infrastructure projects are in progress in your area. Then, find out
 - (i) The budget allotted for the project.
 - (ii) The sources of its financing.
 - (iii) How much employment will it generate?
 - (iv) What will be the overall benefits after its completion?
 - (v) How long will it take to be completed?
 - (vi) Company/companies engaged in the project.
3. Visit any nearby thermal power station/hydro-power station/nuclear power plant. Observe how these plants work.
4. The class can be divided into groups to make a survey of energy use in their neighbourhood. The aim of the survey should be to find out which particular fuel is most used in the neighbourhood and the quantity in which it is used. Graphs can be made by the different groups and compared to find out possible reason for preference of one particular fuel.
5. Study the life and work of Dr Homi Bhabha, the architect of modern India's energy establishments.
6. Hold a classroom discussion or debate on — 'warring nations make for an unhealthy world, so do warped attitudes and closed minds make for mental ill-health'.



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UNIT IV

DEVELOPMENT EXPERIENCES OF INDIA: A COMPARISON
WITH NEIGHBOURS

In today's globalised world, where geographical boundaries are slowly becoming meaningless, it is important for neighbouring countries in the developing world to understand the development strategies being pursued by their neighbours. This is more so because they share the relatively limited economic space in world markets. In this unit, we will compare India's developmental experiences with two of its important and strategic neighbours – Pakistan and China.

COMPARATIVE DEVELOPMENT EXPERIENCES OF INDIA AND ITS NEIGHBOURS

After studying this chapter, the learners will

- figure out comparative trends in various economic and human development indicators of India and its neighbours, China and Pakistan
- assess the strategies that these countries have adopted to reach their present state of development.



Geography has made us neighbours. History has made us friends. Economics has made us partners, and necessity has made us allies. Those whom God has so joined together, let no man put asunder.

John F. Kennedy

10.1 INTRODUCTION

In the preceding units we studied the developmental experience of India in detail. We also studied the kind of policies India adopted, which had varying impacts in different sectors. Over the last two decades or so, the economic transformation that is taking place in different countries across the world, partly because of the process of globalisation, has both short as well as long-term implications for each country, including India. In the post-Cold War world, nations have been primarily trying to adopt various means which will strengthen their own domestic economies. To this effect, they are forming regional and global economic groupings such as the **SAARC, European Union, ASEAN, G-8, G-20** etc. In addition, there is also an increasing eagerness on the parts of various nations to try and understand the developmental processes pursued by their neighbouring nations as it allows them to better comprehend their own strengths and weaknesses vis-à-vis their neighbours. In the unfolding process of globalisation, this is particularly considered essential by developing countries as they face competition not only from developed nations but also amongst themselves in the relatively limited economic space enjoyed by the developing world.

Besides, an understanding of the other economies in our neighbourhood is also required as all major common economic activities in the region impinge on overall human development in a shared environment.

In this chapter we will compare the developmental strategies pursued by India and the largest two of its neighbouring economies—Pakistan and China. It has to be remembered, however, that apart from the similarities in their physical endowments, there is little in common between the political power setup of India, the largest democracy of the world which is wedded to a secular and deeply liberal Constitution for over half a century, and the authoritarian militarist political power structure of Pakistan or the command economy of China that has only recently started moving towards a more liberal restructuring.

10.2 DEVELOPMENTAL PATH—A SNAPSHOT VIEW

Do you know that India, Pakistan and China have many similarities in their developmental strategies? All the three nations have started towards their developmental path at the same time. While India and Pakistan became independent nations in 1947, People's Republic of China was established in 1949. In a speech at that time,



Jawaharlal Nehru had said, "these new and revolutionary changes in China and India, even though they differ in content, symbolise the new spirit of Asia and new vitality which is finding expression in the countries in Asia."

All the three countries had started planning their development strategies in similar ways. While India announced its first Five Year Plan for 1951–56, Pakistan announced its first five year plan, called, the Medium Term Plan, in 1956. China announced its First Five Year Plan in 1953. Till 1998, Pakistan had eight five year plans whereas China's tenth five year period is 2001–06. The current planning in India is based on Tenth Five Year Plan (2002–07). India and Pakistan adopted similar strategies such as creating a large public sector and raising public expenditure on social development. Till the 1980s, all the three countries had similar growth rates and per capita incomes. Where do they stand today in comparison to one another? Before we answer this question let us trace the historical path of developmental policies in China and Pakistan. After studying the last three units, we already know what policies India has been adopting since its independence.

China: After the establishment of People's Republic of China under one-party rule, all the critical sectors of the economy, enterprises and lands owned and operated by individuals were brought under government control. The **Great Leap Forward (GLF)**

campaign initiated in 1958 aimed at industrialising the country on a massive scale. People were encouraged to set up industries in their backyards. In rural areas, communes were started. Under the **Commune** system, people collectively cultivated lands. In 1958, there were 26,000 communes covering almost all the farm population.

GLF campaign met with many problems. A severe drought caused havoc in China killing about 30 million people. When Russia had conflicts with China, it withdrew its professionals who had earlier been sent to China to help in the industrialisation process. In 1965, Mao introduced the **Great Proletarian Cultural Revolution** (1966–76) under which students and professionals were sent to work and learn from the countryside.

The present-day fast industrial growth in China can be traced back to the reforms introduced in 1978. China introduced reforms in phases. In the initial phase, reforms were initiated in agriculture, foreign trade and investment sectors. In agriculture, for instance, commune lands were divided into small plots which were allocated (for use not ownership) to individual households. They were allowed to keep all income from the land after paying stipulated taxes. In the later phase, reforms were initiated in the industrial sector. Private sector firms, in general, and township and village enterprises, i.e. those enterprises which were owned and operated by local collectives, in particular, were allowed to produce



Fig. 10.1 Wagah Border is not only a tourist place but also used for trade between India and Pakistan

goods. At this stage, enterprises owned by government (known as State Owned Enterprises—SOEs), which we, in India, call public sector enterprises, were made to face competition. The reform process also involved dual pricing. This means fixing the prices in two ways; farmers and industrial units were required to buy and sell fixed quantities of inputs and outputs on the basis of prices fixed by the government and the rest were purchased and sold at market prices. Over the years, as production increased, the proportion of goods or inputs transacted in the market was also increased. In order to attract foreign investors, **special economic zones** were set up.

Pakistan: While looking at various economic policies that Pakistan adopted, you will notice many similarities with India. Pakistan also follows the mixed economy model with

co-existence of public and private sectors. In the late 1950s and 1960s, Pakistan introduced a variety of regulated policy framework (for import substitution industrialisation). The policy combined tariff protection for manufacturing of consumer goods together with direct import controls on competing imports. The introduction of Green Revolution led to mechanisation and increase in public investment in infrastructure in select areas, which finally led to a rise in the production of foodgrains. This changed the agrarian structure dramatically. In the 1970s, nationalisation of capital goods industries took place. Pakistan then shifted its policy orientation in the late 1970s and 1980s when the major thrust areas were denationalisation and encouragement to private sector. During this period, Pakistan also received financial support from western nations and remittances from



continuously increasing outflow of emigrants to the Middle-east. This helped the country in stimulating economic growth. The then government also offered incentives to the private sector. All this created a conducive climate for new investments. In 1988, reforms were initiated in the country.

Having studied a brief outline of the developmental strategies of China and Pakistan, let us now compare some of the developmental indicators of India, China and Pakistan.

10.3 DEMOGRAPHIC INDICATORS

If we look at the global population, out of every six persons living in this world, one is an Indian and another Chinese. We shall compare some demographic indicators of India, China and Pakistan. The population of Pakistan is very small and accounts for roughly about one-tenth of China or India.

Though China is the largest nation among the three, its density is the lowest though geographically it occupies the largest area. Table 10.1 also shows the population growth as

being highest in Pakistan, followed by India and China. Scholars point out the one-child norm introduced in China in the late 1970s as the major reason for low population growth. They also state that this measure led to a decline in the sex ratio, the proportion of females per 1000 males. However, from the table, you will notice that the sex ratio is low and biased against females in all the three countries. Scholars cite son-preference prevailing in all these countries as the reason. In recent times, all the three countries are adopting various measures to improve the situation. One-child norm and the resultant arrest in the growth of population also have other implications. For instance, after a few decades, in China, there will be more elderly people in proportion to young people. This will force China to take steps to provide social security measures with fewer workers.

The fertility rate is also low in China and very high in Pakistan. Urbanisation is high in both Pakistan and China with India having 28 per cent of its people living in urban areas.

TABLE 10.1

Select Demographic Indicators, 2000-01

Country	Estimated Population (in millions)	Annual Growth of Population (1990-2003)	Density (per sq. km)	Sex Ratio	Fertility Rate	Urbanisation
India	1103.6	1.7	358	933	3.0	27.8
China	1303.7	1.0	138	937(*)	1.8	36.1
Pakistan	162.4	2.5	193	922	5.1	33.4

Note: (*) data exclude population of Hong Kong, Macao and Taiwan Provinces.

10.4 GROSS DOMESTIC PRODUCT AND SECTORS

One of the much-talked issues around the world about China is its growth of Gross Domestic Product. China has the second largest GDP (PPP) of \$7.2 trillion whereas India's GDP (PPP) is \$3.3 trillion and Pakistan's GDP is roughly about 10 per cent of India's GDP.

When many developed countries were finding it difficult to maintain a growth rate of even 5 per cent, China was able to maintain near double-digit growth for more than two decades as can be seen from Table 10.2. Also notice that in the 1980s Pakistan was ahead of India; China was having double-digit growth and India was at the bottom. In the 1990s, there is a marginal



Fig. 10.2 Land use and agriculture in India, China and Pakistan

TABLE 10.2

Growth of Gross Domestic Product (%),
1980–2003

Country	1980–90	1990–2002/3
India	5.7	5.8
China	10.3	9.7
Pakistan	6.3	3.6



Work These Out

- Does India follow any population stabilisation measures? If so, collect the details and discuss in the classroom. You may refer to the latest Economic Survey, annual reports or websites of Ministry of Health and Family Welfare (<http://mohfw.nic.in>).
- Scholars find son-preference as a common phenomenon in many developing countries including India, China and Pakistan. Do you find this phenomenon in your family or neighbourhood? Why do people practice discrimination between male and female children? What do you think about it? Discuss in the classroom.



Fig. 10.3 Industry in India, China and Pakistan.

decline in India and China's growth rates whereas Pakistan met with drastic decline at 3.6 per cent. Some scholars hold the reform processes introduced in 1988 in Pakistan and political instability as the reason behind this trend. We will study in a later section which sector contributed to this trend in these countries.

First, look at how people engaged in different sectors contribute to Gross Domestic Product. It was pointed out in the previous section that China and Pakistan have more proportion of urban people than India. In China,

due to topographic and climatic conditions, the area suitable for cultivation is relatively small – only about 10 per cent of its total land area. The total cultivable area in China accounts for 40 per cent of the cultivable area in India. Until the 1980s, more than 80 per cent of the people in China were dependent on farming as their sole source of livelihood. Since then, the government encouraged people to leave their fields and pursue other activities such as handicrafts, commerce and transport. In 2000, with 54 per cent of its workforce engaged in agriculture, its

contribution to GDP in China is 15 per cent (see Table 10.3).

In both India and Pakistan, the contribution of agriculture to GDP is the same, at 23 per cent, but the proportion of workforce that works in this sector is more in India. In Pakistan, about 49 per cent of people work in agriculture whereas in India it is 60 per cent. The sectoral share of output and employment also shows that in all the three economies, the industry and service sectors have less proportion of workforce but contribute more in terms of output. In China,



TABLE 10.3

Sectoral Share of Employment and GDP (%)

Sector	Contribution to GDP (2003)			Distribution of Workforce		
	India	China	Pakistan	India (2000)	China (1997)	Pakistan (2000)
Agriculture	23	15	23	60	54	49
Industry	26	53	23	16	27	18
Service	51	32	54	24	19	37
Total	100	100	100	100	100	100

manufacturing contributes the highest to GDP at 53 per cent whereas in India and Pakistan, it is the service sector which contributes the highest. In both these countries, service sector accounts for more than 50 per cent of GDP.

In the normal course of development, countries first shift their employment and output from agriculture to manufacturing and then to services. This is what is happening in China as can be seen from Table 10.4. The proportion of workforce engaged in manufacturing in India and Pakistan were low at 16 and 18 per cent respectively. The contribution of industries to GDP is also just equal to or marginally higher than the output from agriculture. In India and Pakistan, the shift is taking place directly to the service sector.

Thus, in both India and Pakistan, the service sector is emerging as a major player of development. It contributes more to GDP and, at the same time, emerges as a prospective employer. If we look at the proportion of workforce in the 1980s, Pakistan was faster in shifting its workforce to service sector than India and China.

In the 1980s, India, China and Pakistan employed 17, 12 and 27 per cent of its workforce in the service sector respectively. In 2000, it has reached the level of 24, 19 and 37 per cent respectively.

In the last two decades, the growth of agriculture sector, which employs the largest proportion of workforce in all the three countries, has declined. In the industrial sector, China has maintained a double-digit growth rate

**Work These Out**

- Do you think it is necessary for India and Pakistan to concentrate on the manufacturing sector as China does? Why?
- Scholars argue that the service sector should not be considered as an engine of growth whereas India and Pakistan have raised their share of output mainly in this sector only. What do you think?



TABLE 10.4

Trends in Output Growth in Different Sectors, 1980-2003

Country	1980-90			1990-2002/03		
	Agriculture	Industry	Service	Agriculture	Industry	Service
India	3.1	7.4	6.9	2.7	6.6	7.9
China	5.9	10.8	13.5	3.9	11.8	8.8
Pakistan	4	7.7	6.8	3.7	3.9	4.3

whereas for India and Pakistan growth rate has declined. In the case of service sector, India has been able to raise its rate of growth in the 1990s while China and Pakistan reduced their service sector growth. Thus, China's growth is mainly contributed by the manufacturing sector and India's growth by service sector. During this period, Pakistan has shown deceleration in all the three sectors.

10.5 INDICATORS OF HUMAN DEVELOPMENT

You might have studied about the importance of human development indicators in the lower classes and the position of many developed and developing countries. Let us look how India, China and Pakistan have performed in some of the select indicators of human development. Look at Table 10.5.

TABLE 10.5

Some Select Indicators of Human Development, 2003

Items	India	China	Pakistan
Human Development Index (Value)	0.602	0.755	0.527
Rank	127	85	135
Life expectancy at birth (Years)	63.3	71.6	63.0
Adult literacy rate (% aged 15 and above)	61.0	90.9	48.7
GDP per capita (PPP US\$)	2,892	5,003	2,097
People below poverty line	34.7	16.6	13.4
Infant Mortality Rate	63	30	81
Maternal Mortality Rate	540	56	500
Population with sustainable access to improved sanitation (%)	30	44	54
Population with sustainable access to an improved water source (%)	86	77	90
Population undernourished (% of total)	21	11	20

Source: *Human Development Report 2005*



If we compare the indices given in the Table, you will find that China is moving ahead of India and Pakistan. This is true for many indicators – income indicator such as GDP per capita, or proportion of population below poverty line or health indicators such as mortality rates, access to sanitation, literacy, life expectancy or malnourishment. Pakistan is ahead of India in reducing proportion of people below the poverty line and also its performance in education, sanitation and access to water is better than India. But neither of these two countries have been able to save women from maternal mortality. In China, for one lakh births, only 50 women die whereas in India and Pakistan, more than 500 women die. Surprisingly India and Pakistan are ahead of China in providing improved water sources. You will notice that for the proportion of people below the international poverty rate of \$1 a day, both China and Pakistan are in similar positions whereas the proportion is almost two times higher for India. Find out for yourself how these differences occur.

In dealing with or making judgements on such questions, however, we should also note a problem with using the human development indicators given above with conviction. This occurs because these are all extremely important indicators; but these are not sufficient. Along with these, we also need what may be called 'liberty indicators'. One such indicator has actually been added as a measure of

'the extent of democratic participation in social and political decision-making' but it has not been given any extra weight. Some obvious 'liberty indicators' like measures of 'the extent of Constitutional protection given to rights of citizens' or 'the extent of constitutional protection of the Independence of the Judiciary and the Rule of Law' have not even been introduced so far. Without including these (and perhaps some more) and giving them overriding importance in the list, the construction of a human development index may be said to be incomplete and its usefulness limited.

10.6 DEVELOPMENT STRATEGIES — AN APPRAISAL

It is common to find developmental strategies of a country as a model to others for lessons and guidance for their own development. It is particularly evident after the introduction of the reform process in different parts of the world. In order to learn from economic performance of our neighbouring countries, it is necessary to have an understanding of the roots of their successes and failures. It is also necessary to distinguish between, and contrast, the different phases of their strategies. Though different countries go through their development phases differently, let us take the initiation of reforms as a point of reference. We know that reforms were initiated in China in 1978, Pakistan in 1988 and India in 1991. Let us briefly assess their



achievements and failures in pre and post reform periods.

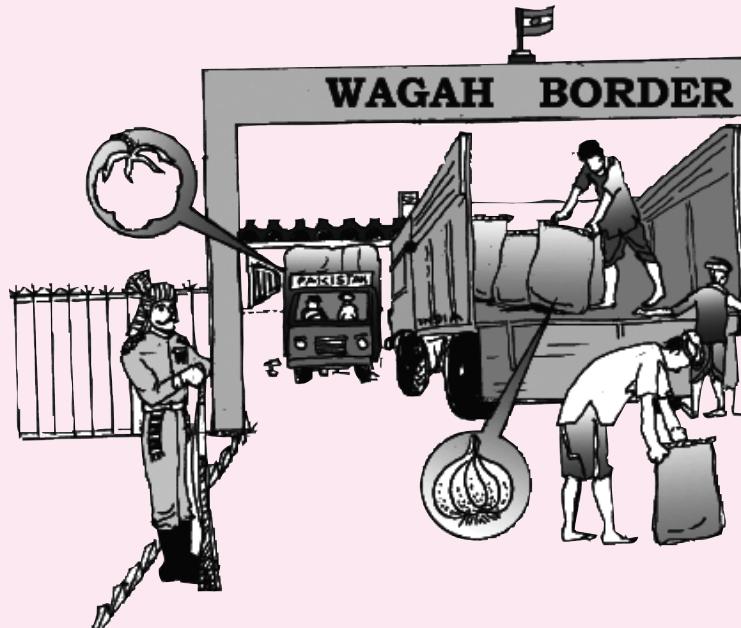
Why did China introduce structural reforms in 1978? China did not have any compulsion to introduce reforms as dictated by the World Bank and International Monetary Fund to India and Pakistan. The new leadership at that time in China was not happy with the slow pace of growth and lack of modernisation in the Chinese economy under the Maoist rule. They felt that Maoist vision of economic development based on decentralisation, self sufficiency and shunning of foreign technology, goods and capital had failed. Despite extensive land reforms, collectivisation, the Great Leap Forward and other initiatives, the per capita grain output in 1978 was the same as it was in the mid-1950s.

It was found that establishment of infrastructure in the areas of education and health, land reforms, long existence of decentralised planning and existence of small enterprises had helped positively in improving the social and income indicators in the post reform period. Before the introduction of reforms, there had already been massive extension of basic health services in rural areas. Through the commune system, there was more equitable distribution of food grains. Experts also point out that each reform measure was first implemented at a smaller level and then extended on a massive scale. The experimentation under decentralised government enabled to assess the economic, social

and political costs of success or failure. For instance, when reforms were made in agriculture, as pointed out earlier by handing over plots of land to individuals for cultivation, it brought prosperity to a vast number of poor people. It created conditions for the subsequent phenomenal growth in rural industries and built up a strong support base for more reforms. Scholars quote many such examples on how reform measures led to rapid growth in China.

Scholars argue that in Pakistan the reform process led to worsening of all the economic indicators. We have seen in an earlier section that compared to 1980s, the growth rate of GDP and its sectoral constituents have fallen in the 1990s.

Though the data on international poverty line for Pakistan is quite healthy, scholars using the official data of Pakistan indicate rising poverty there. The proportion of poor in 1960s was more than 40 per cent which declined to 25 per cent in 1980s and started rising again in 1990s. The reasons for the slow-down of growth and re-emergence of poverty in Pakistan's economy, as scholars put it, are (i) agricultural growth and food supply situation were based not on an institutionalised process of technical change but on good harvest. When there was a good harvest, the economy was in good condition, when it was not, the economic indicators showed stagnation or negative trends (ii) you will recall that India had to borrow from the IMF and World Bank to set right its balance of payments

**Work This Out**

➤ There is a general perception going around in India that there is sudden increase in dumping of Chinese goods into India which will have implications for manufacturing sector in India and also that we do not engage ourselves in trading with our neighbouring nations. Look at the following table, which shows exports from India to, and imports from, Pakistan and China. Interpret the results and discuss in the classroom. From newspapers and websites and listening to news, collect the details of goods and services transacted in trading with our neighbours. In order to get detailed information relating to international trade, you can log on to the website: <http://dgft.delhi.nic.in>.

Country	Exports (Rs. in crores)			Imports (Rs. in crores)		
	2003-2004	2004-2005	Rate of Growth (%)	2003-2004	2004-2005	Rate of Growth (%)
Pakistan	1320	2270	72	265	430	60
China	13600	20600	52	18600	30300	60



crisis; foreign exchange is an essential component for any country and it is important to know how it can be earned. If a country is able to build up its foreign exchange earnings by sustainable export of manufactured goods, it need not worry. In Pakistan most foreign exchange earnings came from remittances from Pakistani workers in the Middle-east and the exports of highly volatile agricultural products; there was also growing dependence on foreign loans on the one hand and increasing difficulty in paying back the loans on the other.

However, as stated in the 'One Year Performance of the (Pakistan) Government' for the year August 2004–2005, the Pakistan economy has been witnessing GDP growth at about 8 per cent for three consecutive years (2002–2005). All the three sectors, agriculture, manufacturing and service, have contributed to this trend. Besides facing high rates of inflation and rapid privatisation, the government is increasing the expenditure on various areas that can reduce poverty.

10.7 CONCLUSION

What are we learning from the developmental experiences of our neighbours? India, China and Pakistan have travelled more than five decades of developmental path with varied results. Till the late 1970s, all of them were maintaining the same level of low development. The last three decades have taken these countries to different levels. India, with democratic institutions,

performed moderately, but a majority of its people still depend on agriculture. Infrastructure is lacking in many parts of the country. It is yet to raise the level of living of more than one-fourth of its population that lives below the poverty line. Scholars are of the opinion that political instability, over-dependence on remittances and foreign aid along with volatile performance of agriculture sector are the reasons for the slowdown of the Pakistan economy. Yet, in the recent past, it is hoping to improve the situation by maintaining high rates of GDP growth. It is also a great challenge for Pakistan to recover from the devastating earthquake in 2005, which took the lives of nearly 75,000 people and also resulted in enormous loss to property. In China, the lack of political freedom and its implications for human rights are major concerns; yet, in the last three decades, it used the 'market system without losing political commitment' and succeeded in raising the level of growth alongwith alleviation of poverty. You will also notice that unlike India and Pakistan, which are attempting to privatise their public sector enterprises, China has used the market mechanism to 'create additional social and economic opportunities'. By retaining collective ownership of land and allowing individuals to cultivate lands, China has ensured social security in rural areas. Public intervention in providing social infrastructure even prior to reforms has brought about positive results in human development indicators in China.



Recap

- With the unfolding of the globalisation process, developing countries are keen to understand the developmental processes pursued by their neighbours as they face competition from developed nations as also amongst themselves.
- India, Pakistan and China have similar physical endowments but totally different political systems.
- All the three countries follow the five-year plan pattern of development. However, the structures established to implement developmental policies are quite different.
- Till the early 1980s, the developmental indicators of all the three countries, such as growth rates and sectoral contribution towards national income, were similar.
- Reforms were introduced in 1978 in China, in 1988 in Pakistan and in 1991 in India.
- China introduced structural reforms on its own initiative while they were forced upon India and Pakistan by international agencies.
- The impact of policy measures were different in these countries – for instance, one-child norm has arrested the population growth in China whereas in India and Pakistan, a major change is yet to take place.
- Even after fifty years of planned development, majority of the workforce in all the countries depends on agriculture. The dependency is greater in India.
- Though China has followed the classical development pattern of gradual shift from agriculture to manufacturing and then to services, India and Pakistan's shift has been directly from agriculture to service sector.
- China's industrial sector has maintained a high growth rate while it is not so in both India and Pakistan.
- China is ahead of India and Pakistan on many human development indicators. However these improvements were attributed not to the reform process but the strategies that China adopted in the pre-reform period.
- While assessing the developmental indicators, one also has to consider the liberty indicators.





EXERCISES

1. Mention some examples of regional and economic groupings.
2. What are the various means by which countries are trying to strengthen their own domestic economies?
3. What similar developmental strategies have India and Pakistan followed for their respective developmental paths?
4. Explain the Great Leap Forward campaign of China as initiated in 1958.
5. China's rapid industrial growth can be traced back to its reforms in 1978. Do you agree? Elucidate.
6. Describe the path of developmental initiatives taken by Pakistan for its economic development.
7. What is the important implication of the 'one child norm' in China?
8. Mention the salient demographic indicators of China, Pakistan and India.
9. Compare and contrast India and China's sectoral contribution towards GDP in 2003. What does it indicate?
10. Mention the various indicators of human development.
11. Define the liberty indicator. Give some examples of liberty indicators.
12. Evaluate the various factors that led to the rapid growth in economic development in China.
13. Group the following features pertaining to the economies of India, China and Pakistan under three heads
 - One-child norm
 - Low fertility rate
 - High degree of urbanisation
 - Mixed economy
 - Very high fertility rate
 - Large population
 - High density of population
 - Growth due to manufacturing sector
 - Growth due to service sector.



14. Give reasons for the slow growth and re-emergence of poverty in Pakistan.
15. Compare and contrast the development of India, China and Pakistan with respect to some salient human development indicators.
16. Comment on the growth rate trends witnessed in China and India in the last two decades.
17. Fill in the blanks
 - (a) First Five Year Plan of _____ commenced in the year 1956. (Pakistan/China)
 - (b) Maternal mortality rate is high in _____. (China/Pakistan)
 - (c) Proportion of people below poverty line is more in _____. (India/Pakistan)
 - (d) Reforms in _____ were introduced in 1978. (China/Pakistan)



SUGGESTED ADDITIONAL ACTIVITIES

1. Organise a class debate on the issue of free trade between India and China and India and Pakistan.
2. You are aware that cheap Chinese goods are available in the market, for example, toys, electronic goods, clothes, batteries etc. Do you think that these products are comparable in quality and price with their Indian counterparts? Do they create a threat to our domestic producers? Discuss.
3. Do you think India can introduce the one-child norm like China to reduce population growth? Organise a debate on the policies that India can follow to reduce population growth.
4. China's growth is mainly contributed by the manufacturing sector and India's growth by the service sector—prepare a chart showing the relevance of this statement with respect to the structural changes in the last decade in the respective countries.
5. How is China able to lead in all the Human Development Indicators? Discuss in the classroom. Use Human Development Report of the latest year.





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Introduction

You must have already been introduced to a study of basic microeconomics. This chapter begins by giving you a simplified account of how macroeconomics differs from the microeconomics that you have known.

Those of you who will choose later to specialise in economics, for your higher studies, will know about the more complex analyses that are used by economists to study macroeconomics today. But the basic questions of the study of macroeconomics would remain the same and you will find that these are actually the broad economic questions that concern all citizens – Will the prices as a whole rise or come down? Is the employment condition of the country as a whole, or of some sectors of the economy, getting better or is it worsening? What would be reasonable indicators to show that the economy is better or worse? What steps, if any, can the State take, or the people ask for, in order to improve the state of the economy? These are the kind of questions that make us think about the health of the country's economy as a whole. These questions are dealt with in macroeconomics at different levels of complexity.

In this book you will be introduced to some of the basic principles of macroeconomic analysis. The principles will be stated, as far as possible, in simple language. Sometimes elementary algebra will be used in the treatment for introducing the reader to some rigour.

If we observe the economy of a country as a whole it will appear that the output levels of all the goods and services in the economy have a tendency to move together. For example, if output of food grain is experiencing a growth, it is generally accompanied by a rise in the output level of industrial goods. Within the category of industrial goods also output of different kinds of goods tend to rise or fall simultaneously. Similarly, prices of different goods and services generally have a tendency to rise or fall simultaneously. We can also observe that the employment level in different production units also goes up or down together.

If aggregate output level, price level, or employment level, in the different production units of an economy, bear close relationship to each other then the task of analysing the entire economy becomes relatively easy. Instead of dealing with the above mentioned variables at individual (disaggregated) levels, we can think of a single good as the representative of all the



goods and services produced within the economy. This representative good will have a level of production which will correspond to the average production level of all the goods and services. Similarly, the price or employment level of this representative good will reflect the general price and employment level of the economy.

In macroeconomics we usually simplify the analysis of how the country's total production and the level of employment are related to attributes (called 'variables') like prices, rate of interest, wage rates, profits and so on, by focusing on a single imaginary commodity and what happens to it. We are able to afford this simplification and thus usefully abstain from studying what happens to the many real commodities that actually are bought and sold in the market because we generally see that what happens to the prices, interests, wages and profits etc. for one commodity more or less also happens for the others. Particularly, when these attributes start changing fast, like when prices are going up (in what is called an inflation), or employment and production levels are going down (heading for a depression), the general directions of the movements of these variables for all the individual commodities are usually of the same kind as are seen for the aggregates for the economy as a whole.

We will see below why, sometimes, we also depart from this useful simplification when we realise that the country's economy as a whole may best be seen as composed of distinct sectors. For certain purposes the interdependence of (or even rivalry between) two sectors of the economy (agriculture and industry, for example) or the relationships between sectors (like the household sector, the business sector and government in a democratic set-up) help us understand some things happening to the country's economy much better, than by only looking at the economy as a whole.

While moving away from different goods and focusing on a representative good may be convenient, in the process, we may be overlooking some vital distinctive characteristics of individual goods. For example, production conditions of agricultural and industrial commodities are of a different nature. Or, if we treat a single category of labour as a representative of all kinds of labours, we may be unable to distinguish the labour of the manager of a firm from the labour of the accountant of the firm. So, in many cases, instead of a single representative category of good (or labour, or production technology), we may take a handful of different kinds of goods. For example, three general kinds of commodities may be taken as a representative of all commodities being produced within the economy: agricultural goods, industrial goods and services. These goods may have different production technology and different prices. Macroeconomics also tries to analyse how the individual output levels, prices, and employment levels of these different goods gets determined.

From this discussion here, and your earlier reading of microeconomics, you may have already begun to understand in what way macroeconomics differs from microeconomics. To recapitulate briefly, in microeconomics, you came across individual 'economic agents' (see box) and the nature of the motivations that drive them. They were 'micro' (meaning 'small') agents – consumers choosing their respective optimum combinations of goods to buy, given their tastes and incomes; and producers trying to make maximum profit out of producing their goods keeping their costs as low as possible and selling at a price as high as they could get in the markets. In other words, microeconomics was a study of individual markets of demand and supply and the 'players', or the decision-makers, were also individuals (buyers or sellers, even companies) who were seen

as trying to maximise their profits (as producers or sellers) and their personal satisfaction or welfare levels (as consumers). Even a large company was 'micro' in the sense that it had to act in the interest of its own shareholders which was not necessarily the interest of the country as a whole. For microeconomics the 'macro' (meaning 'large') phenomena affecting the economy as a whole, like inflation or unemployment, were either not mentioned or were taken as given. These were not variables that individual buyers or sellers could change. The nearest that microeconomics got to macroeconomics was when it looked at General Equilibrium, meaning the equilibrium of supply and demand in each market in the economy.

Economic Agents

By economic units or economic agents, we mean those individuals or institutions which take economic decisions. They can be consumers who decide what and how much to consume. They may be producers of goods and services who decide what and how much to produce. They may be entities like the government, corporation, banks which also take different economic decisions like how much to spend, what interest rate to charge on the credits, how much to tax, etc.

Macroeconomics tries to address situations facing the economy as a whole. **Adam Smith**, the founding father of modern economics, had suggested that if the buyers and sellers in each market take their decisions following only their own self-interest, economists will not need to think of the wealth and welfare of the country as a whole separately. But economists gradually discovered that they had to look further.

Economists found that first, in some cases, the markets did not or could not exist. Secondly, in some other cases, the markets existed but failed to produce equilibrium of demand and supply. Thirdly, and most importantly, in a large number of situations society (or the State, or the people as a whole) had decided to pursue certain important social goals unselfishly (in areas like employment, administration, defence, education and health) for which some of the aggregate effects of the microeconomic decisions made by the individual economic agents needed to be modified. For these purposes macroeconomists had to study the effects in the markets of taxation and other budgetary policies, and policies for bringing about changes in money supply, the rate of interest, wages, employment, and output. Macroeconomics has, therefore, deep roots in microeconomics because it has to study the aggregate effects of the forces of demand and supply in the markets. However, in addition, it has to deal with policies aimed at also modifying these forces, if necessary, to follow choices made by society outside the markets. In a developing country like India such choices have to be made to remove or reduce unemployment, to improve access to education and primary health care for all, to provide for good administration, to provide sufficiently for the defence of the country and so on. Macroeconomics shows two simple characteristics that are evident in dealing with the situations we have just listed. These are briefly mentioned below.

First, who are the macroeconomic decision makers (or 'players')? Macroeconomic policies are pursued by the State itself or statutory bodies like the Reserve Bank of India (RBI), Securities and Exchange Board of India (SEBI) and similar institutions. Typically, each such body will have one or more public goals to pursue as defined by law or the Constitution of India itself. These goals

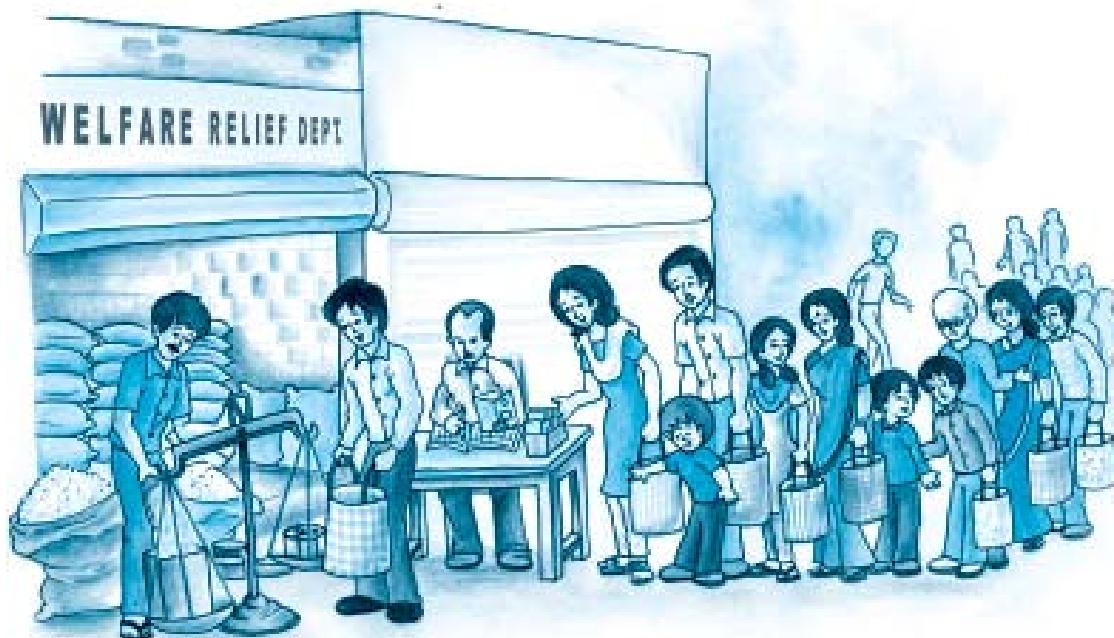


are not those of individual economic agents maximising their private profit or welfare. Thus the macroeconomic agents are basically different from the individual decision-makers.

Secondly, what do the macroeconomic decision-makers try to do? Obviously they often have to go beyond economic objectives and try to direct the deployment of economic resources for such public needs as we have listed above. Such activities are not aimed at serving individual self-interests. They are pursued for the welfare of the country and its people as a whole.

1.1 EMERGENCE OF MACROECONOMICS

Macroeconomics, as a separate branch of economics, emerged after the British economist **John Maynard Keynes** published his celebrated book *The General Theory of Employment, Interest and Money* in 1936. The dominant thinking in economics before Keynes was that all the labourers who are ready to work will find employment and all the factories will be working at their full capacity. This school of thought is known as the classical tradition. However, the **Great Depression** of 1929 and the subsequent years saw the output and employment levels in the countries of Europe and North America fall by huge amounts. It affected other countries of the world as well. Demand for goods in the market was low, many factories were lying idle, workers were thrown out of jobs. In USA, from 1929 to 1933, **unemployment rate** rose from 3 per cent to 25 per cent (unemployment rate may be defined as the number of people who are not working and are looking for jobs divided by the total number of people who are working or looking for jobs). Over the same period aggregate output in USA fell by about 33 per cent. These events made economists think about the functioning of the economy in a new way. The fact that the economy may have long lasting unemployment had to be theorised about and explained. Keynes' book was an attempt in this direction. Unlike his predecessors, his approach was to examine the working of the economy in its entirety and examine the interdependence of the different sectors. The subject of macroeconomics was born.



1.2 CONTEXT OF THE PRESENT BOOK OF MACROECONOMICS

We must remember that the subject under study has a particular historical context. We shall examine the working of the economy of a capitalist country in this book. In a **capitalist country** production activities are mainly carried out by capitalist enterprises. A typical capitalist enterprise has one or several **entrepreneurs** (people who exercise control over major decisions and bear a large part of the risk associated with the firm/enterprise). They may themselves supply the **capital** needed to run the enterprise, or they may borrow the capital. To carry out production they also need **natural resources** – a part consumed in the process of production (e.g. raw materials) and a part fixed (e.g. plots of land). And they need the most important element of human labour to carry out production. This we shall refer to as **labour**. After producing output with the help of these three factors of production, namely capital, land and labour, the entrepreneur sells the product in the market. The money that is earned is called **revenue**. Part of the revenue is paid out as rent for the service rendered by land, part of it is paid to capital as interest and part of it goes to labour as wages. The rest of the revenue is the earning of the entrepreneurs and it is called **profit**. Profits are often used by the producers in the next period to buy new machinery or to build new factories, so that production can be expanded. These expenses which raise productive capacity are examples of **investment expenditure**.

In short, a capitalist economy can be defined as an economy in which most of the economic activities have the following characteristics (a) there is private ownership of means of production (b) production takes place for selling the output in the market (c) there is sale and purchase of labour services at a price which is called the **wage rate** (the labour which is sold and purchased against wages is referred to as **wage labour**).

If we apply the above mentioned three criteria to the countries of the world we would find that capitalist countries have come into being only during the last three to four hundred years. Moreover, strictly speaking, even at present, a handful of countries in North America, Europe and Asia will qualify as capitalist countries. In many underdeveloped countries production (in agriculture especially) is carried out by peasant families. Wage labour is seldom used and most of the labour is performed by the family members themselves. Production is not solely for the market; a great part of it is consumed by the family. Neither do many peasant farms experience significant rise in capital stock over time. In many tribal societies the ownership of land does not exist; the land may belong to the whole tribe. In such societies the analysis that we shall present in this book will not be applicable. It is, however, true that many developing countries have a significant presence of production units which are organised according to capitalist principles. The production units will be called firms in this book. In a firm the entrepreneur (or entrepreneurs) is at the helm of affairs. She hires wage labour from the market, she employs the services of capital and land as well. After hiring these inputs she undertakes the task of production. Her motive for producing goods and services (referred to as output) is to sell them in the market and earn profits. In the process she undertakes risks and uncertainties. For example, she may not get a high enough price for the goods she is producing; this may lead to fall in the profits that she earns. It is to be noted that in a capitalist country the factors of production earn their incomes through the process of production and sale of the resultant output in the market.

In both the developed and developing countries, apart from the private capitalist sector, there is the institution of State. The role of the state includes



Key Concepts



- Rate of interest
- Profits
- Great Depression
- Four factors of production
- Inputs
- Labour
- Entrepreneurship

Summary

Macroeconomics deals with the aggregate economic variables of an economy. It also takes into account various interlinkages which may exist between the different sectors of an economy. This is what distinguishes it from microeconomics; which mostly examines the functioning of the particular sectors of the economy, assuming that the rest of the economy remains the same. Macroeconomics emerged as a separate subject in the 1930s due to Keynes. The Great Depression, which dealt a blow to the economies of developed countries, had provided Keynes with the inspiration for his writings. In this book we shall mostly deal with the working of a capitalist economy. Hence it may not be entirely able to capture the functioning of a developing country. Macroeconomics sees an economy as a combination of four sectors, namely households, firms, government and external sector.

- | | |
|----------------------------|--------------------------|
| Rate of interest | Wage rate |
| Profits | Economic agents or units |
| Great Depression | Unemployment rate |
| Four factors of production | Means of production |
| Inputs | Land |
| Labour | Capital |
| Entrepreneurship | Investment expenditure |

framing laws, enforcing them and delivering justice. The state, in many instances, undertakes production – apart from imposing taxes and spending money on building public infrastructure, running schools, colleges, providing health services etc. These economic functions of the state have to be taken into account when we want to describe the economy of the country. For convenience we shall use the term government to denote state.

Apart from the firms and the government, there is another major sector in an economy which is called the household sector. By a household we mean a single individual who takes decisions relating to her own consumption, or a group of individuals for whom decisions relating to consumption are jointly determined. Households also save and pay taxes. How do they get the money for these activities? We must remember that the households consist of people. These people work in firms as workers and earn wages. They are the ones who work in the government departments and earn salaries, or they are the owners of firms and earn profits. Indeed the market in which the firms sell their products could not have been functioning without the demand coming from the households.

So far we have described the major players in the domestic economy. But all the countries of the world are also engaged in external trade. The external sector is the fourth important sector in our study. Trade with the external sector can be of two kinds

1. The domestic country may sell goods to the rest of the world. These are called **exports**.
2. The economy may also buy goods from the rest of the world. These are called **imports**. Besides exports and imports, the rest of the world affects the domestic economy in other ways as well.
3. Capital from foreign countries may flow into the domestic country, or the domestic country may be exporting capital to foreign countries.

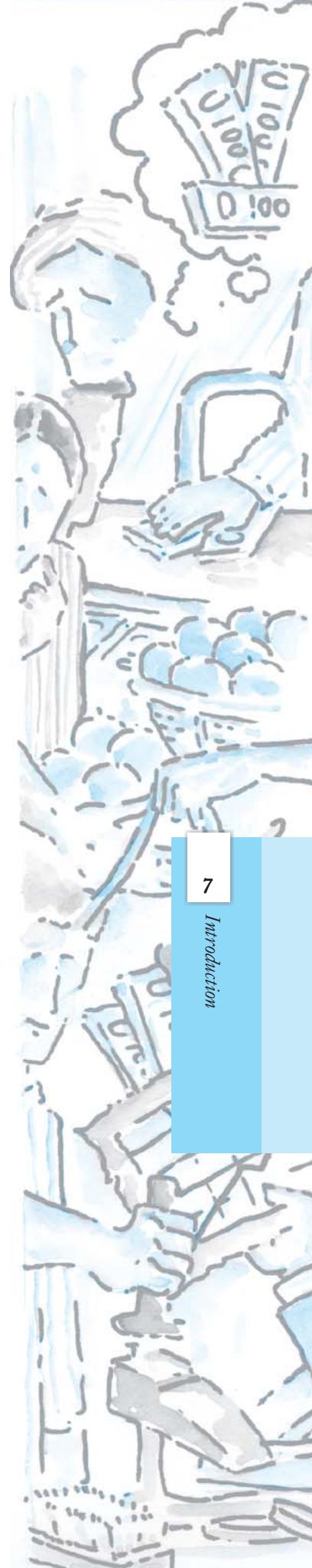
Exercises

Wage labour	Capitalist country or capitalist economy
Firms	Capitalist firms
Output	Households
Government	External sector
Exports	Imports

1. What is the difference between microeconomics and macroeconomics?
2. What are the important features of a capitalist economy?
3. Describe the four major sectors in an economy according to the macroeconomic point of view.
4. Describe the Great Depression of 1929.

Suggested Readings

1. Bhaduri, A., 1990. *Macroeconomics: The Dynamics of Commodity Production*, pages 1 – 27, Macmillan India Limited, New Delhi.
2. Mankiw, N. G., 2000. *Macroeconomics*, pages 2 – 14, Macmillan Worth Publishers, New York.



Chapter 2



National Income Accounting

In this chapter we will introduce the fundamental functioning of a simple economy. In section 2.1 we describe some primary ideas we shall work with. In section 2.2 we describe how we can view the aggregate income of the entire economy going through the sectors of the economy in a circular way. The same section also deals with the three ways to calculate the national income; namely product method, expenditure method and income method. The last section 2.3 describes the various sub-categories of national income. It also defines different price indices like GDP deflator, Consumer Price Index, Wholesale Price Indices and discusses the problems associated with taking GDP of a country as an indicator of the aggregate welfare of the people of the country.

2.1 SOME BASIC CONCEPTS OF MACROECONOMICS

One of the pioneers of the subject we call economics today, Adam Smith, named his most influential work – *An Enquiry into the Nature and Cause of the Wealth of Nations*. What generates the economic wealth of a nation? What makes countries rich or poor? These are some of the central questions of economics. It is not that countries which are endowed with a bounty of natural wealth – minerals or forests or the most fertile lands – are naturally the richest countries. In fact the resource rich Africa and Latin America have some of the poorest countries in the world, whereas many prosperous countries have scarcely any natural wealth. There was a time when possession of natural resources was the most important consideration but even then the resource had to be transformed through a production process.

The economic wealth, or well-being, of a country thus does not necessarily depend on the mere possession of resources; the point is how these resources are used in generating a flow of production and how, as a consequence, income and wealth are generated from that process.

Let us now dwell upon this flow of production. How does this flow of production arise? People combine their energies with natural and manmade environment within a certain social and technological structure to generate a flow of production.

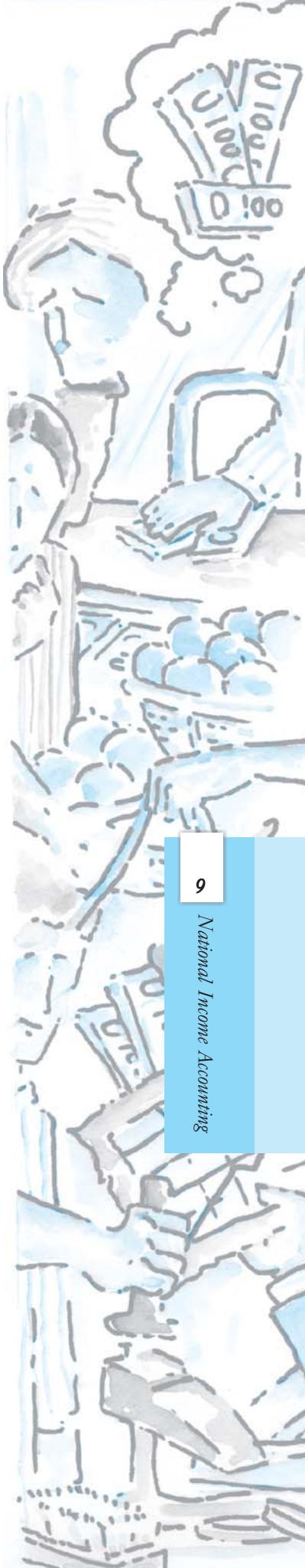
In our modern economic setting this flow of production arises out of production of commodities – goods and services by millions of enterprises large and small. These enterprises range from giant

corporations employing a large number of people to single entrepreneur enterprises. But what happens to these commodities after being produced? Each producer of commodities intends to sell her output. So from the smallest items like pins or buttons to the largest ones like aeroplanes, automobiles, giant machinery or any saleable service like that of the doctor, the lawyer or the financial consultant—the goods and services produced are to be sold to the consumers. The consumer may, in turn, be an individual or an enterprise and the good or service purchased by that entity might be for final use or for use in further production. When it is used in further production it often loses its characteristic as that specific good and is transformed through a productive process into another good. Thus a farmer producing cotton sells it to a spinning mill where the raw cotton undergoes transformation to yarn; the yarn is, in turn, sold to a textile mill where, through the productive process, it is transformed into cloth; the cloth is, in turn, transformed through another productive process into an article of clothing which is then ready to be sold finally to the consumers for final use. Such an item that is meant for final use and will not pass through any more stages of production or transformations is called a **final good**.

Why do we call this a final good? Because once it has been sold it passes out of the active economic flow. It will not undergo any further transformation at the hands of any producer. It may, however, undergo transformation by the action of the ultimate purchaser. In fact many such final goods are transformed during their consumption. Thus the tea leaves purchased by the consumer are not consumed in that form—they are used to make drinkable tea, which is consumed. Similarly most of the items that enter our kitchen are transformed through the process of cooking. But cooking at home is not an economic activity, even though the product involved undergoes transformation. Home cooked food is not sold to the market. However, if the same cooking or tea brewing was done in a restaurant where the cooked product would be sold to customers, then the same items, such as tea leaves, would cease to be final goods and would be counted as inputs to which economic value addition can take place. Thus it is not in the nature of the good but in the economic nature of its use that a good becomes a final good.

Of the final goods, we can distinguish between **consumption goods** and **capital goods**. Goods like food and clothing, and services like recreation that are consumed when purchased by their ultimate consumers are called consumption goods or consumer goods. (This also includes services which are consumed but for convenience we may refer to them as consumer goods.)

Then there are other goods that are of durable character which are used in the production process. These are tools, implements and machines. While they make production of other commodities feasible, they themselves don't get transformed in the production process. They are also final goods yet they are not final goods to be ultimately consumed. Unlike the final goods that we have considered above, they are the crucial backbone of any production process, in aiding and enabling the production to take place. These goods form a part of capital, one of the crucial factors of production in which a productive enterprise has invested, and they continue to enable the production process to go on for continuous cycles of production. These are capital goods and they gradually undergo wear and tear, and thus are repaired or gradually replaced over time. The stock of capital that an economy possesses is thus preserved, maintained and renewed partially or wholly over time and this is of some importance in the discussion that will follow.



We may note here that some commodities like television sets, automobiles or home computers, although they are for ultimate consumption, have one characteristic in common with capital goods – they are also durable. That is, they are not extinguished by immediate or even short period consumption; they have a relatively long life as compared to articles such as food or even clothing. They also undergo wear and tear with gradual use and often need repairs and replacements of parts, i.e., like machines they also need to be preserved, maintained and renewed. That is why we call these goods **consumer durables**.

Thus if we consider all the final goods and services produced in an economy in a given period of time they are either in the form of consumption goods (both durable and non-durable) or capital goods. As final goods they do not undergo any further transformation in the economic process.

Of the total production taking place in the economy a large number of products don't end up in final consumption and are not capital goods either. Such goods may be used by other producers as material inputs. Examples are steel sheets used for making automobiles and copper used for making utensils. These are **intermediate goods**, mostly used as raw material or inputs for production of other commodities. *These are not final goods.*

Now, to have a comprehensive idea of the total flow of production in the economy, we need to have a quantitative measure of the aggregate level of final goods produced in the economy. However, in order to get a quantitative assessment – a measure of the total final goods and services produced in the economy – it is obvious that we need a *common measuring rod*. We cannot add metres of cloth produced to tonnes of rice or number of automobiles or machines. Our common measuring rod is money. Since each of these commodities is produced for sale, *the sum total of the monetary value of these diverse commodities gives us a measure of final output*. But why are we to measure final goods only? Surely intermediate goods are crucial inputs to any production process and a significant part of our manpower and capital stock are engaged in production of these goods. However, since we are dealing with value of output, we should realise that the value of the final goods already includes the value of the intermediate goods that have entered into their production as inputs. Counting them separately will lead to the error of *double counting*. Whereas considering intermediate goods may give a fuller description of total economic activity, counting them will highly exaggerate the final value of our economic activity.

At this stage it is important to introduce the concepts of **stocks** and **flows**. Often we hear statements like the average salary of someone is Rs 10,000 or the output of the steel industry is so many tonnes or so many rupees in value. But these are incomplete statements because it is not clear whether the income which is being referred to is yearly or monthly or daily income and surely that makes a huge difference. Sometimes, when the context is familiar, we assume that the time period is known and therefore do not mention it. But inherent in all such statements is a definite period of time. Otherwise such statements are meaningless. Thus income, or output, or profits are concepts that make sense only when a time period is specified. These are called flows because they occur in a period of time. Therefore we need to delineate a time period to get a quantitative measure of these. Since a lot of accounting is done annually in an economy, many of these are expressed annually like annual profits or production. Flows are defined over a period of time.

In contrast, capital goods or consumer durables once produced do not wear out or get consumed in a delineated time period. In fact capital goods continue to serve us through different cycles of production. The buildings or machines in a factory are there irrespective of the specific time period. There can be addition to, or deduction from, these if a new machine is added or a machine falls in disuse and is not replaced. These are called stocks. Stocks are defined at a particular point of time. However we can measure a *change in stock* over a specific period of time like how many machines were added this year. Such changes in stocks are thus flows, which can be measured over specific time periods. A particular machine can be part of the capital stock for many years (unless it wears out); but that machine can be part of the flow of new machines added to the capital stock only for a single year.

To further understand the difference between stock variables and flow variables, let us take the following example. Suppose a tank is being filled with water coming from a tap. The amount of water which is flowing into the tank from the tap per minute is a flow. But how much water there is in the tank at a particular point of time is a stock concept.

To come back to our discussion on the measure of final output, that part of our final output that comprises of capital goods constitutes **gross investment** of an economy¹. These may be machines, tools and implements; buildings, office spaces, storehouses or infrastructure like roads, bridges, airports or jetties. But all the capital goods produced in a year do not constitute an addition to the capital stock already existing. A significant part of current output of capital goods goes in maintaining or replacing part of the existing stock of capital goods. This is because the already existing capital stock suffers wear and tear and needs maintenance and replacement. A part of the capital goods produced this year goes for replacement of existing capital goods and is not an addition to the stock of capital goods already existing and its value needs to be subtracted from gross investment for arriving at the measure for net investment. This deletion, which is made from the value of gross investment in order to accommodate regular wear and tear of capital, is called **depreciation**.

So new addition to capital stock in an economy is measured by net investment or new capital formation, which is expressed as

$$\text{Net Investment} = \text{Gross investment} - \text{Depreciation}$$

Let us examine this concept called depreciation a little more in detail. Let us consider a new machine that a firm invests in. This machine may be in service for the next twenty years after which it falls into disrepair and needs to be replaced. We can now imagine as if the machine is being gradually used up in each year's production process and each year one twentieth of its original value is getting depreciated. So, instead of considering a bulk investment for replacement after twenty years, we consider an annual depreciation cost every year. This is the usual sense in which the term depreciation is used and inherent in its conception is the expected life of a particular capital good, like twenty years in our example of the machine. Depreciation is thus an annual allowance for wear and tear of a

¹This is how economists define investment. This must not be confused with the commonplace notion of investment which implies using money to buy physical or financial assets. Thus use of the term investment to denote purchase of shares or property or even having an insurance policy has nothing to do with how economists define investment. Investment for us is always capital formation, a gross or net addition to capital stock.

capital good.² In other words it is the cost of the good divided by number of years of its useful life.³

Notice here that depreciation is an accounting concept. No real expenditure may have actually been incurred each year yet depreciation is annually accounted for. In an economy with thousands of enterprises with widely varying periods of life of their equipment, in any particular year, some enterprises are actually making the bulk replacement spending. Thus, we can realistically assume that there will be a steady flow of actual replacement spending which will more or less match the amount of annual depreciation being accounted for in that economy.

Now if we go back to our discussion of total final output produced in an economy, we see that there is output of consumer goods and services and output of capital goods. The consumer goods sustain the consumption of the entire population of the economy. Purchase of consumer goods depends on the capacity of the people to spend on these goods which, in turn, depends on their income. The other part of the final goods, the capital goods, are purchased by business enterprises either for maintenance or addition to their capital stock so that they can continue to maintain or expand the flow of their production. In a specific time period, say in a year, the total production of final goods can thus be either in the form of consumption or investment and there is thus a trade-off. If an economy, out of its current production of final goods, produces more of consumer goods, it is producing less of investment goods and vice-versa.

We will soon see, however, that this simple additive relation is more complex in more than one way.

The relation, in fact, is that of a basic circularity expressing the self-feeding nature of the production process. Consumption goods sustain the basic objective of any economy – the need to consume. Consumption may range from basic life sustenance to luxurious lifestyles. Human beings must consume to survive and work and it is consumption of the basic necessities of life – food, clothing, shelter that make us function. But as human societies advance and progress, their consumption needs become much more wide ranging and complex. Not only are newer consumption needs perceived and correspondingly new consumer goods and services produced, but also the meaning of basic necessities may now include not only food and clothing but such essentials like basic education and health care. If consumption is the ultimate objective, these consumables – goods and services – are to be both produced and purchased. Whereas it is possible, in different social or economic arrangements, for goods to be produced and distributed to members of the society without being purchased or sold, we are not considering an economy like that. In the economy under consideration all goods and services are produced by the entrepreneur for sale and the enterprise intends to make a profit through the act of selling.

So the act of production makes this consumption feasible in two ways – by producing these consumption goods and simultaneously generating the income for those who are involved in the production process. The entrepreneur buys machines and employs people to make this production feasible. The objective of the entrepreneur is to sell the commodities produced and earn profits. The act

²Depreciation does not take into account unexpected or sudden destruction or disuse of capital as can happen with accidents, natural calamities or other such extraneous circumstances.

³We are making a rather simple assumption here that there is a constant rate of depreciation based on the original value of the asset. There can be other methods to calculate depreciation in actual practice.

of employment, in turn, generates income for those who are employed. The income that the employed earn and the profit that the entrepreneur earns become the basis for purchase of consumption goods that are being produced for sale.

But the production of consumption goods would not be feasible without capital goods. Human labour is combined or applied on the stock of capital goods to produce the consumables and the capital goods. More sophisticated the capital goods are, more will be the productivity of labour. The traditional weaver would take months to weave a sari but with modern machinery thousands of pieces of clothing are produced in a day. Decades were taken to construct the great historical monuments like the Pyramids or the Taj Mahal but with modern construction machinery one can build a skyscraper in a few years. One of the signs of progress in our modern society is both the qualitative and quantitative enhancement that has happened to capital stock. The larger and more sophisticated the capital stock, the more numerous and more varied will be the output of commodities and, consequently, more numerous and varied will be the production of consumption goods.

But aren't we contradicting ourselves? Earlier we have seen how, of the total output of final goods in an economy, if a larger share goes for production of capital goods, a smaller share is available for production of consumer goods. Here we have to bring in the relevance of the time period in our discussion. Given a stock of capital goods with which production commences in a year, of the total output produced at the end of the year, if more of capital goods are produced then less of consumption goods are produced. But the more the capital goods produced now, more will be the productive capacity of the system in the future. Hence a larger volume of consumption goods can be produced in the future. If, at present, the economy sets aside a greater fraction of its output for investment purpose, its capacity to produce more output in the future rises. This phenomenon becomes possible because capital goods, unlike non-durable consumer goods, do not get immediately exhausted with their use – they add to the stock of capital in quantitative terms. The new stock may also be qualitatively superior to the existing stock (just as a modern textile mill is more productive than the old handlooms). In both cases the capacity of the economy to produce more output in the future rises.

Now if we concentrate on production in a given time period, say a year, we can observe the basic circularity.

Total output of final goods and services produced in an economy in a year has two different parts – the consumer goods and services, and the capital goods. The consumer goods and services sustain the consumption of the total population of the economy. From the population of the economy is derived its workforce, people who contribute to production either by providing their labour and skill or by supplying their capital or entrepreneurship. Such human effort is combined with existing stock of capital goods – tools, machines, infrastructure etc. to form the basis for production of output. Of this a part of the final output comprises of this year's capital goods production, which replaces or adds to the existing capital stock, and the resultant capital stock, in interaction with human labour and entrepreneurship, will be the basis for production of output in the next cycle of production i.e. next year. Thus the economic cycle rolls on, making a continuous process of consumption and production possible.

We can also observe here that unless the current production of capital goods is entirely used up for replacement of old capital stock, which in most instances is rather unlikely, i.e. if there is a net addition to capital stock at the end of this



year's production cycle, next year's production commences with a larger stock of capital. This can thus become the basis for larger production of output. Thus the economic cycle not only rolls on, it also has a strong tendency to expand.

We can also locate another view of the circular flow inherent in the discussion we have made had so far.

Since we are dealing with all goods and services that are produced for the market, i.e. to be sold, the crucial factor enabling such sale is demand for such products backed by purchasing power. One must have the necessary ability to purchase commodities. Otherwise one's need for commodities does not get recognised by the market.

We have already discussed above that one's ability to buy commodities comes from the income one earns as labourer (earning wages), or as entrepreneur (earning profits), or as landlord (earning rents), or as owner of capital (earning interests). In short, the incomes that people earn as owners of factors of production are used by them to meet their demand for goods and services.

So we can see a circular flow here which is facilitated through the market. Simply put, the firms' demand for factors of production to run the production process creates payments to the public. In turn, the public's demand for goods and services creates payments to the firms and enables the sale of the products they produce.

So the social act of consumption and production are intricately linked and, in fact, there is a circular causation here. The process of production in an economy generates factor payments for those involved in production and generates goods and services as the outcome of the production process. The incomes so generated create the capacity to purchase the final consumption goods and thus enable their sale by the business enterprises, the basic object of their production. The capital goods which are also generated in the production process also enable their producers to earn income – wages, profits etc. in a similar manner. The capital goods add to, or maintain, the capital stock of an economy and thus make production of other commodities possible.

2.2 CIRCULAR FLOW OF INCOME AND METHODS OF CALCULATING NATIONAL INCOME

The description of the economy in the previous section enables us to have a rough idea of how a simple economy – without a government, external trade or any savings – may function. The households receive their payments from the firms for productive activities they perform for the latter. As we have mentioned before, there may fundamentally be four kinds of contributions that can be made during the production of goods and services (a) contribution made by human labour, remuneration for which is called wage (b) contribution made by capital, remuneration for which is called interest (c) contribution made by entrepreneurship, remuneration of which is profit (d) contribution made by fixed natural resources (called 'land'), remuneration for which is called rent.

In this simplified economy, there is only one way in which the households may dispose off their earnings – by spending their entire income on the goods and services produced by the domestic firms. The other channels of disposing their income are closed: we have assumed that the households do not save, they do not pay taxes to the government – since there is no government, and neither do they buy imported goods since there is no external trade in this simple economy. In other words, factors of production use their remunerations to buy

the goods and services which they assisted in producing. The aggregate consumption by the households of the economy is equal to the aggregate expenditure on goods and services produced by the firms in the economy. The entire income of the economy, therefore, comes back to the producers in the form of sales revenue. There is no leakage from the system – there is no difference between the amount that the firms had distributed in the form of factor payments (which is the sum total of remunerations earned by the four factors of production) and the aggregate consumption expenditure that they receive as sales revenue.

In the next period the firms will once again produce goods and services and pay remunerations to the factors of production. These remunerations will once again be used to buy the goods and services. Hence year after year we can imagine the aggregate income of the economy going through the two sectors, firms and households, in a circular way. This is represented in Fig. 2.1. When the income is being spent on the goods and services produced by the firms, it takes the form of aggregate expenditure received by the firms. Since the value of expenditure must be equal to the value of goods and services, we can equivalently measure the aggregate income by calculating the aggregate value of goods and services produced by the firms. When the aggregate revenue received by the firms is paid out to the factors of production it takes the form of aggregate income.

In Fig. 2.1, the uppermost arrow, going from the households to the firms, represents the spending the households undertake to buy goods and services produced by the firms. The second arrow going from the firms to the households is the counterpart of the arrow above. It stands for the goods and services which are flowing from the firms to the households. In other words, this flow is what the households are getting from the firms, for which they are making the expenditures. In short, the two arrows on the top represent the goods and services market – the arrow above represents the flow of payments for the goods and services, the arrow below represents the flow of goods and services. The two arrows at the bottom of the diagram similarly represent the factors of production market. The lower most arrow going from the households to the firms symbolises the services that the households are rendering to the firms. Using these services the firms are manufacturing the output. The arrow above this, going from the firms to the households, represents the payments made by the firms to the households for the services provided by the latter.

Since the same amount of money, representing the aggregate value of goods and services, is moving in a circular way, if we want to estimate the aggregate value of goods and services produced during a year we can measure the annual value of the flows at any of the dotted lines indicated in the diagram. We can measure the uppermost flow (at point A) by measuring the aggregate value of spending that the firms receive for the final goods and services which they produce.

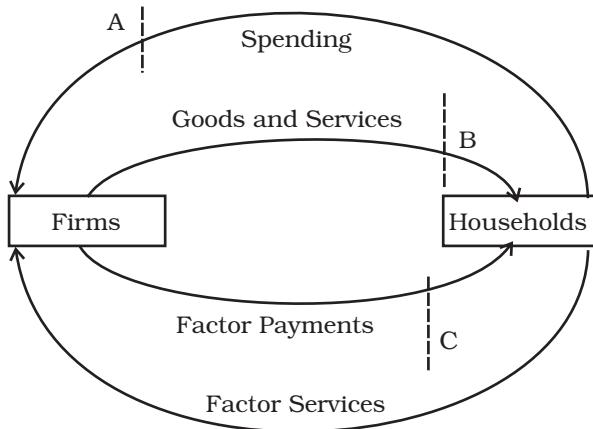


Fig. 2.1: Circular Flow of Income in a Simple Economy

This method will be called the **expenditure method**. If we measure the flow at B by measuring the aggregate value of final goods and services produced by all the firms, it will be called **product method**. At C, measuring the sum total of all factor payments will be called **income method**.

Observe that the aggregate spending of the economy must be equal to the aggregate income earned by the factors of production (the flows are equal at A and C). Now let us suppose that at a particular period of time the households decide to spend more on the goods and services produced by the firms. For the time being let us ignore the question where they would find the money to finance that extra spending since they are already spending all of their income (they may have borrowed the money to finance the additional spending). Now if they spend more on the goods and services, the firms will produce more goods and services to meet this extra demand. Since they will produce more, the firms must also pay the factors of production extra remunerations. How much extra amount of money will the firms pay? The additional factor payments must be equal to the value of the additional goods and services that are being produced. Thus the households will eventually get the extra earnings required to support the initial additional spending that they had undertaken. In other words, the households can decide to spend more – spend beyond their means. And in the end their income will rise exactly by the amount which is necessary to carry out the extra spending. Putting it differently, an economy may decide to spend more than the present level of income. But by doing so, its income will eventually rise to a level consistent with the higher spending level. This may seem a little paradoxical at first. But since income is moving in a circular fashion, it is not difficult to figure out that a rise in the flow at one point must eventually lead to a rise in the flow at all levels. This is one more example of how the functioning of a single economic agent (say, a household) may differ from the functioning of the economy as a whole. In the former the spending gets restricted by the individual income of a household. It can never happen that a single worker decides to spend more and this leads to an equivalent rise in her income. We shall spend more time on how higher aggregate spending leads to change in aggregate income in a later chapter.

The above mentioned sketchy illustration of an economy is admittedly a simplified one. Such a story which describes the functioning of an imaginary economy is called a **macroeconomic model**. It is clear that a model does not describe an actual economy in detail. For example, our model assumes that households do not save, there is no government, no trade with other countries. However models do not want to capture an economy in its every minute detail – their purpose is to highlight some essential features of the functioning of an economic system. But one has to be cautious not to simplify the matters in such a way that misrepresents the essential nature of the economy. The subject of economics is full of models, many of which will be presented in this book. One task of an economist is to figure out which model is applicable to which real life situation.

If we change our simple model described above and introduce savings, will it change the principal conclusion that the aggregate estimate of the income of the economy will remain the same whether we decide to calculate it at A, B or C? It turns out that this conclusion does not change in a fundamental way. No matter how complicated an economic system may be, the annual production of goods and services estimated through each of the three methods is the same.

We have seen that the aggregate value of goods and services produced in an economy can be calculated by three methods. We now discuss the detailed steps of these calculations.

2.2.1 The Product or Value Added Method

In product method we calculate the aggregate annual value of goods and services produced (if a year is the unit of time). How to go about doing this? Do we add up the value of all goods and services produced by all the firms in an economy? The following example will help us to understand.

Let us suppose that there are only two kinds of producers in the economy. They are the wheat producers (or the farmers) and the bread makers (the bakers). The wheat producers grow wheat and they do not need any input other than human labour. They sell a part of the wheat to the bakers. The bakers do not need any other raw materials besides wheat to produce bread. Let us suppose that in a year the total value of wheat that the farmers have produced is Rs 100. Out of this they have sold Rs 50 worth of wheat to the bakers. The bakers have used this amount of wheat completely during the year and have produced Rs 200 worth of bread. What is the value of total production in the economy? If we follow the simple way of aggregating the values of production of the sectors, we would add Rs 200 (value of production of the bakers) to Rs 100 (value of production of farmers). The result will be Rs 300.

A little reflection will tell us that the value of aggregate production is not Rs 300. The farmers had produced Rs 100 worth of wheat for which it did not need assistance of any inputs. Therefore the entire Rs 100 is rightfully the contribution of the farmers. But the same is not true for the bakers. The bakers had to buy Rs 50 worth of wheat to produce their bread. The Rs 200 worth of bread that they have produced is not entirely their own contribution. To calculate the net contribution of the bakers, we need to subtract the value of the wheat that they have bought from the farmers. If we do not do this we shall commit the mistake of 'double counting'. This is because Rs 50 worth of wheat will be counted twice. First it will be counted as part of the output produced by the farmers. Second time, it will be counted as the imputed value of wheat in the bread produced by the bakers.

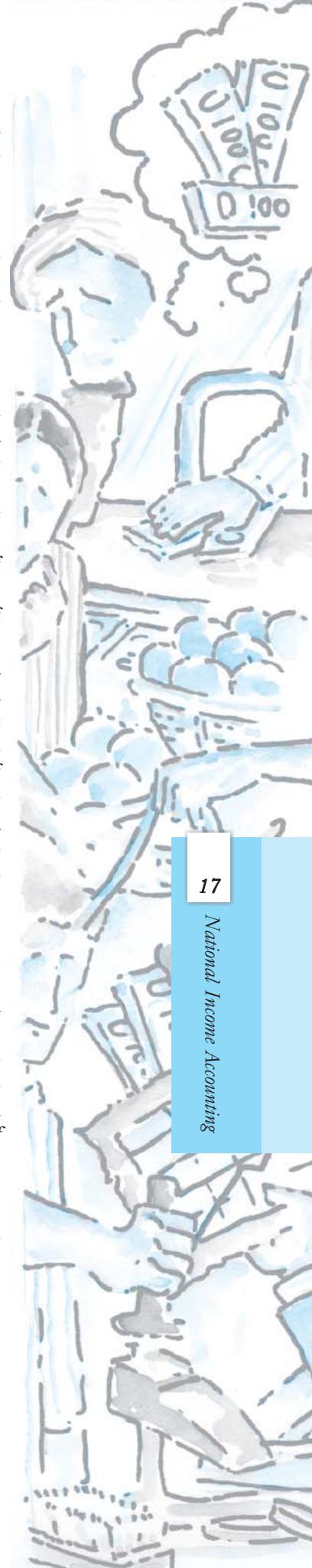
Therefore, the net contribution made by the bakers is, $Rs\ 200 - Rs\ 50 = Rs\ 150$. Hence, aggregate value of goods produced by this simple economy is $Rs\ 100$ (net contribution by the farmers) + $Rs\ 150$ (net contribution by the bakers) = $Rs\ 250$.

The term that is used to denote the net contribution made by a firm is called its **value added**. We have seen that the raw materials that a firm buys from another firm which are completely used up in the process of production are called 'intermediate goods'. Therefore the value added of a firm is, *value of production of the firm – value of intermediate goods used by the firm*. The value added of a firm is distributed among its four factors of production, namely, labour, capital, entrepreneurship and land. Therefore wages, interest, profits and rents paid out by the firm must add up to the value added of the firm. Value added is a flow variable.

We can represent the example given above in terms of Table 2.1.

Table 2.1: Production, Intermediate Goods and Value Added

	<i>Farmer</i>	<i>Baker</i>
Total production	100	200
Intermediate goods used	0	50
Value added	100	$200 - 50 = 150$



Here all the variables are expressed in terms of money. We can think of the market prices of the goods being used to evaluate the different variables listed here. And we can introduce more players in the chain of production in the example and make it more realistic and complicated. For example, the farmer may be using fertilisers or pesticides to produce wheat. The value of these inputs will have to be deducted from the value of output of wheat. Or the bakers may be selling the bread to a restaurant whose value added will have to be calculated by subtracting the value of intermediate goods (bread in this case).

We have already introduced the concept of depreciation, which is also known as consumption of fixed capital. Since the capital which is used to carry out production undergoes wear and tear, the producer has to undertake replacement investments to keep the value of capital constant. The replacement investment is same as depreciation of capital. If we include depreciation in value added then the measure of value added that we obtain is called **Gross Value Added**. If we deduct the value of depreciation from gross value added we obtain **Net Value Added**. Unlike gross value added, net value added does not include wear and tear that capital has undergone. For example, let us say a firm produces Rs 100 worth of goods per year, Rs 20 is the value of intermediate goods used by it during the year and Rs 10 is the value of capital consumption. The gross value added of the firm will be, $\text{Rs } 100 - \text{Rs } 20 = \text{Rs } 80$ per year. The net value added will be, $\text{Rs } 100 - \text{Rs } 20 - \text{Rs } 10 = \text{Rs } 70$ per year.

It is to be noted that while calculating the value added we are taking the *value of production* of firm. But a firm may be unable to sell all of its produce. In such a case it will have some unsold stock at the end of the year. Conversely, it may so happen that a firm had some initial unsold stock to begin with. During the year that follows it has produced very little. But it has met the demand in the market by selling from the stock it had at the beginning of the year. How shall we treat these stocks which a firm may intentionally or unintentionally carry with itself? Also, let us remember that a firm buys raw materials from other firms. The part of raw material which gets used up is categorised as an intermediate good. What happens to the part which does not get used up?

In economics, the stock of unsold finished goods, or semi-finished goods, or raw materials which a firm carries from one year to the next is called **inventory**. Inventory is a stock variable. It may have a value at the beginning of the year; it may have a higher value at the end of the year. In such a case inventories have increased (or accumulated). If the value of inventories is less at the end of the year compared to the beginning of the year, inventories have decreased (decumulated). We can therefore infer that the *change of inventories of a firm during a year* \equiv *production of the firm during the year – sale of the firm during the year*.

The sign ‘ \equiv ’ stands for identity. Unlike equality (‘=’), an identity always holds irrespective of what variables we have on the left hand and right hand sides of it. For example, we can write $2 + 2 \equiv 4$, because this is always true. But we must write $2 \times x = 4$. This is because two times x equals to 4 for a particular value of x , (namely when $x = 2$) and not always. We cannot write $2 \times x \equiv 4$.

Observe that since production of the firm \equiv value added + intermediate goods used by the firm, we get, change of inventories of a firm during a year \equiv value added + intermediate goods used by the firm – sale of the firm during a year.

For example, let us suppose that a firm had an unsold stock worth of Rs 100 at the beginning of a year. During the year it had produced Rs 1,000

worth of goods and managed to sell Rs 800 worth of goods. Therefore the Rs 200 is the difference between production and sales. This Rs 200 worth of goods is the change in inventories. This will add to the Rs 100 worth of inventories the firm started with. Hence the inventories at the end of the year is, $\text{Rs } 100 + \text{Rs } 200 = \text{Rs } 300$. Notice that change in inventories takes place over a period of time. Therefore it is a **flow variable**.

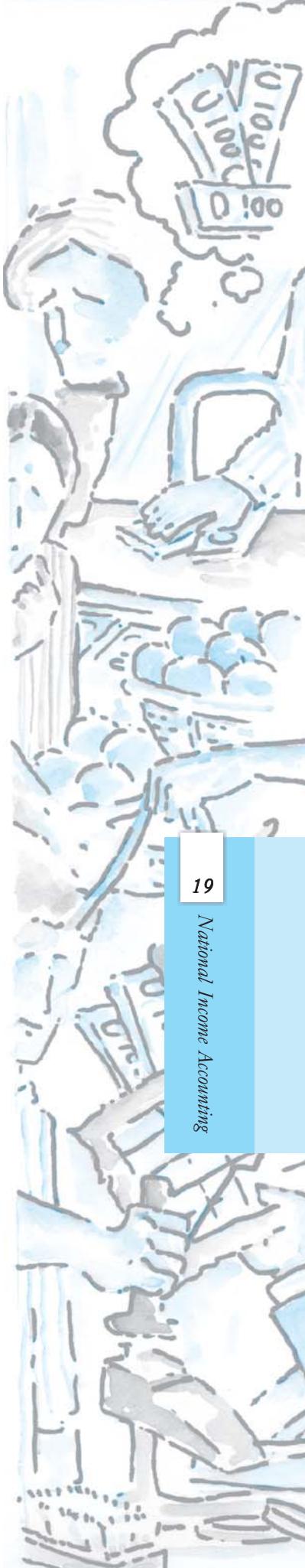
Inventories are treated as capital. Addition to the stock of capital of a firm is known as **investment**. Therefore change in the inventory of a firm is treated as investment. There can be three major categories of investment. First is the rise in the value of inventories of a firm over a year which is treated as investment expenditure undertaken by the firm. The second category of investment is the fixed business investment, which is defined as the addition to the machinery, factory buildings, and equipments employed by the firms. The last category of investment is the residential investment, which refers to the addition of housing facilities.

Change in inventories may be planned or unplanned. In case of an unexpected fall in sales, the firm will have unsold stock of goods which it had not anticipated. Hence there will be **unplanned accumulation of inventories**. In the opposite case where there is unexpected rise in the sales there will be **unplanned decumulation of inventories**.

This can be illustrated with the help of the following example. Suppose a firm manufactures shirts. It starts the year with an inventory of 100 shirts. During the coming year it expects to sell 1,000 shirts. Hence it produces 1,000 shirts, expecting to keep an inventory of 100 at the end of the year. However, during the year, the sales of shirts turn out to be unexpectedly low. The firm is able to sell only 600 shirts. This means that the firm is left with 400 unsold shirts. The firm ends the year with $400 + 100 = 500$ shirts. The unexpected rise of inventories by 400 will be an example of unplanned accumulation of inventories. If, on the other hand, the sales had been more than 1,000 we would have unplanned decumulation of inventories. For example, if the sales had been 1,050, then not only the production of 1,000 shirts will be sold, the firm will have to sell 50 shirts out of the inventory. This 50 unexpected reduction in inventories is an example of unexpected decumulation of inventories.

What can be the examples of **planned accumulation or decumulation of inventories**? Suppose the firm wants to raise the inventories from 100 shirts to 200 shirts during the year. Expecting sales of 1,000 shirts during the year (as before), the firm produces $1000 + 100 = 1,100$ shirts. If the sales are actually 1,000 shirts, then the firm indeed ends up with a rise of inventories. The new stock of inventories is 200 shirts, which was indeed planned by the firm. This rise is an example of planned accumulation of inventories. On the other hand if the firm had wanted to reduce the inventories from 100 to 25 (say), then it would produce $1000 - 75 = 925$ shirts. This is because it plans to sell 75 shirts out of the inventory of 100 shirts it started with (so that the inventory at the end of the year becomes $100 - 75 = 25$ shirts, which the firm wants). If the sales indeed turn out to be 1000 as expected by the firm, the firm will be left with the planned, reduced inventory of 25 shirts.

We shall have more to say on the distinction between unplanned and planned change in inventories in the chapters which follow.



Taking cognizance of change of inventories we may write

Gross value added of firm, $i (GVA_i) \equiv$ Gross value of the output produced by the firm $i (Q_i)$ – Value of intermediate goods used by the firm (Z_i)

$$\begin{aligned} GVA_i &\equiv \text{Value of sales by the firm } (V_i) + \text{Value of change in inventories } (A_i) \\ &\quad - \text{Value of intermediate goods used by the firm } (Z_i) \end{aligned} \quad (2.1)$$

Equation (2.1) has been derived by using: Change in inventories of a firm during a year \equiv Production of the firm during the year – Sale of the firm during the year.

It is worth noting that the sales by the firm includes sales not only to domestic buyers but also to buyers abroad (the latter is termed as exports). It is also to be noted that all the above mentioned variables are flow variables. Generally these are measured on an annual basis. Hence they measure value of the flows per year.

Net value added of the firm $i \equiv GVA_i - \text{Depreciation of the firm } i (D_i)$

If we sum the gross value added of all the firms of the economy in a year, we get a measure of the value of aggregate amount of goods and services produced by the economy in a year (just as we had done in the wheat-bread example). Such an estimate is called **Gross Domestic Product (GDP)**. Thus $GDP \equiv$ Sum total of gross value added of all the firms in the economy.

If there are N firms in the economy, each assigned with a serial number from 1 to N , then $GDP \equiv$ Sum total of the gross value added of all the firms in the economy

$$\equiv GVA_1 + GVA_2 + \dots + GVA_N$$

Therefore

$$GDP \equiv \sum_{i=1}^N GVA_i \quad (2.2)$$

The symbol \sum is a shorthand – it is used to denote summation. For example, $\sum_{i=1}^N X_i$ will be equal to $X_1 + X_2 + \dots + X_N$. In this case, $\sum_{i=1}^N GVA_i$ stands for the sum total of gross value added of all the N firms. We know that the net value added of the i -th firm (NVA_i) is the gross value added minus the wear and tear of the capital employed by the firm.

$$\text{Thus, } NVA_i \equiv GVA_i - D_i$$

$$\text{Therefore, } GVA_i \equiv NVA_i + D_i$$

This is for the i -th firm. There are N such firms. Therefore the GDP of the entire economy, which is the sum total of the value added of all the N firms (by (2.2)), will be the sum total of the net value added and depreciation of the N firms.

$$\text{In other words, } GDP \equiv \sum_{i=1}^N NVA_i + \sum_{i=1}^N D_i$$

This implies that the gross domestic product of the economy is the sum total of the net value added and depreciation of all the firms of the economy. Summation of net value added of all firms is called **Net Domestic Product (NDP)**.

$$\text{Symbolically, } NDP \equiv \sum_{i=1}^N NVA_i$$

2.2.2 Expenditure Method

An alternative way to calculate the GDP is by looking at the demand side of the products. This method is referred to as the expenditure method. In the farmer-baker example that we have described before, the aggregate value of the output

in the economy by expenditure method will be calculated in the following way. In this method we add the final expenditures that each firm makes. Final expenditure is that part of expenditure which is undertaken not for intermediate purposes. The Rs 50 worth of wheat which the bakers buy from the farmers counts as intermediate goods, hence it does not fall under the category of final expenditure. Therefore the aggregate value of output of the economy is Rs 200 (final expenditure received by the baker) + Rs 50 (final expenditure received by the farmer) = Rs 250 per year.

Firm i can make the final expenditure on the following accounts (a) the final consumption expenditure on the goods and services produced by the firm. We shall denote this by C_i . We may note that mostly it is the households which undertake consumption expenditure. There may be exceptions when the firms buy consumables to treat their guests or for their employees (b) the final investment expenditure, I_i , incurred by other firms on the capital goods produced by firm i . Observe that unlike the expenditure on intermediate goods which is not included in the calculation of GDP, expenditure on investments is included. The reason is that investment goods remain with the firm, whereas intermediate goods are consumed in the process of production (c) the expenditure that the government makes on the final goods and services produced by firm i . We shall denote this by G_i . We may point out that the final expenditure incurred by the government includes both the consumption and investment expenditure (d) the export revenues that firm i earns by selling its goods and services abroad. This will be denoted by X_i .

Thus the sum total of the revenues that the firm i earns is given by

$RV_i \equiv$ Sum total of final consumption, investment, government and exports expenditures received by the firm i

$$\equiv C_i + I_i + G_i + X_i$$

If there are N firms then summing over N firms we get

$\sum_{i=1}^N RV_i \equiv$ Sum total of final consumption, investment, government and exports expenditures received by all the firms in the economy

$$\equiv \sum_{i=1}^N C_i + \sum_{i=1}^N I_i + \sum_{i=1}^N G_i + \sum_{i=1}^N X_i \quad (2.3)$$

Let C be the aggregate final consumption expenditure of the entire economy. Notice that a part of C is spent on imports of consumption goods. Let C_m denote expenditure on the imports of consumption goods. Therefore $C - C_m$ denotes that part of aggregate final consumption expenditure that is spent on the domestic firms. Similarly, let $I - I_m$ stand for that part of aggregate final investment expenditure that is spent on domestic firms, where I is the value of the aggregate final investment expenditure of the economy and out of this I_m is spent on foreign investment goods. Similarly $G - G_m$ stands for that part of aggregate final government expenditure that is spent on the domestic firms, where G is the aggregate expenditure of the government of the economy and G_m is the part of G which is spent on imports.

Therefore, $\sum_{i=1}^N C_i \equiv$ Sum total of final consumption expenditures received by all the firms in the economy $\equiv C - C_m$; $\sum_{i=1}^N I_i \equiv$ Sum total of final investment expenditures received by all the firms in the economy $\equiv I - I_m$;

$\sum_{i=1}^N G_i \equiv$ Sum total of final government expenditures received by all the firms in the economy $\equiv G - G_m$. Substituting these in equation (2.3) we get

$$\begin{aligned}\sum_{i=1}^N RV_i &\equiv C - C_m + I - I_m + G - G_m + \sum_{i=1}^N X_i \\ &\equiv C + I + G + \sum_{i=1}^N X_i - (C_m + I_m + G_m) \\ &\equiv C + I + G + X - M\end{aligned}$$

Here $X \equiv \sum_{i=1}^N X_i$ denotes aggregate expenditure by the foreigners on the exports of the economy. $M \equiv C_m + I_m + G_m$ is the aggregate imports expenditure incurred by the economy.

We know, $GDP \equiv$ Sum total of all the final expenditure received by the firms in the economy.

In other words

$$GDP \equiv \sum_{i=1}^N RV_i \equiv X + I + G + X - M \quad (2.4)$$

Equation (2.4) expresses GDP according to the expenditure method.

2.2.3 Income Method

As we mentioned in the beginning, the sum of final expenditures in the economy must be equal to the incomes received by all the factors of production taken together (final expenditure is the spending on final goods, it does not include spending on intermediate goods). This follows from the simple idea that the revenues earned by all the firms put together must be distributed among the factors of production as salaries, wages, profits, interest earnings and rents. Let there be M number of households in the economy. Let W_i be the wages and salaries received by the i -th household in a particular year. Similarly, P_i , In_i , R_i be the gross profits, interest payments and rents received by the i -th household in a particular year. Therefore GDP is given by

$$GDP \equiv \sum_{i=1}^M W_i + \sum_{i=1}^M P_i + \sum_{i=1}^M In_i + \sum_{i=1}^M R_i \equiv W + P + In + R \quad (2.5)$$

Here, $\sum_{i=1}^M W_i \equiv W$, $\sum_{i=1}^M P_i \equiv P$, $\sum_{i=1}^M In_i \equiv In$, $\sum_{i=1}^M R_i \equiv R$. Taking equations (2.2), (2.4) and (2.5) together we get

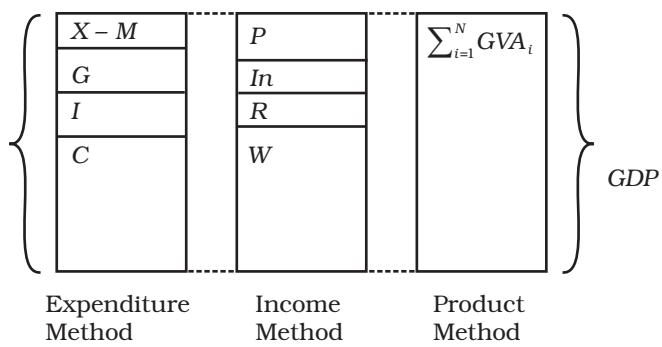
$$GDP \equiv \sum_{i=1}^N GV A_i \equiv C + I + G + X - M \equiv W + P + In + R \quad (2.6)$$

It is to be noted that in identity (2.6), I stands for sum total of both planned and unplanned investments undertaken by the firms.

Since the identities (2.2), (2.4) and (2.6) are different expressions of the same variable, namely GDP , we may represent the equivalence by Fig. 2.2.

It may be worth examining how the households dispose off their earnings. There

are three major ways **Fig. 2.2: Diagrammatic Representation of GDP by the Three Methods**



in which they may do so. Either they consume it, or they save it, or pay taxes with it (assuming that no aid or donation, 'transfer payment' in general, is being sent abroad, which is another way to spend their incomes). Let S stand for the aggregate savings made by them and T be the sum total of taxes paid by them. Therefore

$$GDP \equiv C + S + T \quad (2.7)$$

Comparing (2.4) with (2.7) we find

$$C + I + G + X - M \equiv C + S + T$$

Cancelling final consumption expenditure C from both sides we get

$$I + G + X - M \equiv S + T$$

In other words

$$(I - S) + (G - T) \equiv M - X \quad (2.8)$$

In (2.8), $G - T$ measures by what amount the government expenditure exceeds the tax revenue earned by it. This is referred to as **budget deficit**. $M - X$ is known as the **trade deficit**—it measures the excess of import expenditure over the export revenue earned by the economy (M is the outflow from the country, X is the inflow into the country).

If there is no government, no foreign trade then $G = T = M = X = 0$. Hence (2.8) yields

$$I \equiv S \quad (2.9)$$

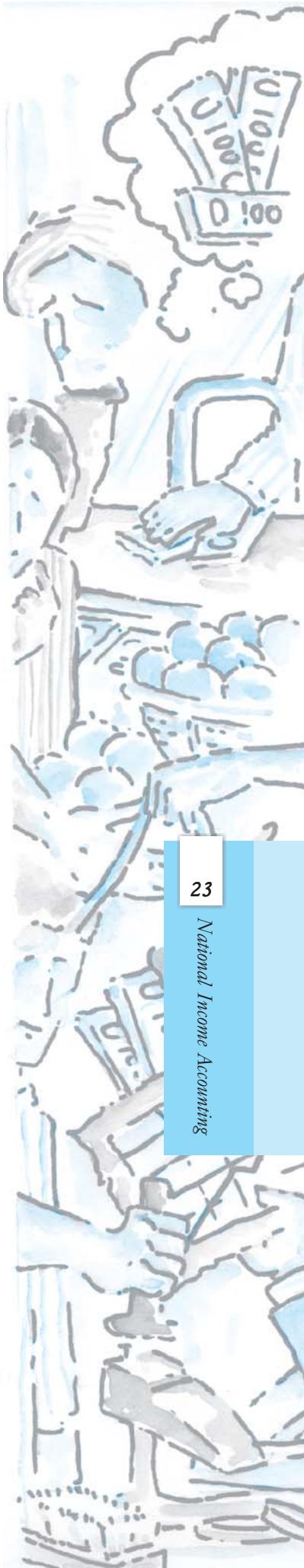
(2.9) is simply an accounting identity. Out of the GDP, a part is consumed and a part is saved (from the recipient side of the incomes). On the other hand, from the side of the firms, the aggregate final expenditure received by them (\equiv GDP) must be equal to consumption expenditure and investment expenditure. The aggregate of incomes received by the households is equal to the expenditure received by the firms because the income method and expenditure method would give us the same figure of GDP. Since consumption expenditure cancels out from both sides, we are left with aggregate savings equal to the aggregate gross investment expenditure.

2.3 SOME MACROECONOMIC IDENTITIES

Gross Domestic Product measures the aggregate production of final goods and services taking place within the domestic economy during a year. But the whole of it may not accrue to the citizens of the country. For example, a citizen of India working in Saudi Arabia may be earning her wage and it will be included in the Saudi Arabian GDP. But legally speaking, she is an Indian. Is there a way to take into account the earnings made by Indians abroad or by the factors of production owned by Indians? When we try to do this, in order to maintain symmetry, we must deduct the earnings of the foreigners who are working within our domestic economy, or the payments to the



The foreigner is to have a share in your domestic economy. Discuss this in the classroom.



factors of production owned by the foreigners. For example, the profits earned by the Korean-owned Hyundai car factory will have to be subtracted from the GDP of India. The macroeconomic variable which takes into account such additions and subtractions is known as **Gross National Product (GNP)**. It is, therefore, defined as follows

$GNP \equiv GDP + \text{Factor income earned by the domestic factors of production employed in the rest of the world} - \text{Factor income earned by the factors of production of the rest of the world employed in the domestic economy}$

Hence, $GNP \equiv GDP + \text{Net factor income from abroad}$

$(\text{Net factor income from abroad} = \text{Factor income earned by the domestic factors of production employed in the rest of the world} - \text{Factor income earned by the factors of production of the rest of the world employed in the domestic economy})$.

We have already noted that a part of the capital gets consumed during the year due to wear and tear. This wear and tear is called depreciation. Naturally, depreciation does not become part of anybody's income. If we deduct depreciation from GNP the measure of aggregate income that we obtain is called **Net National Product (NNP)**. Thus

$$NNP \equiv GNP - \text{Depreciation}$$

It is to be noted that all these variables are evaluated at market prices. Through the expression given above, we get the value of NNP evaluated at market prices. But market price includes **indirect taxes**. When indirect taxes are imposed on goods and services, their prices go up. Indirect taxes accrue to the government. We have to deduct them from NNP evaluated at market prices in order to calculate that part of NNP which actually accrues to the factors of production. Similarly, there may be **subsidies** granted by the government on the prices of some commodities (in India petrol is heavily taxed by the government, whereas cooking gas is subsidised). So we need to add subsidies to the NNP evaluated at market prices. The measure that we obtain by doing so is called **Net National Product at factor cost or National Income**.

Thus, $NNP \text{ at factor cost} \equiv \text{National Income (NI)} \equiv NNP \text{ at market prices} - (\text{Indirect taxes} - \text{Subsidies}) \equiv NNP \text{ at market prices} - \text{Net indirect taxes}$ ($\text{Net indirect taxes} \equiv \text{Indirect taxes} - \text{Subsidies}$)

We can further subdivide the National Income into smaller categories. Let us try to find the expression for the part of NI which is received by households. We shall call this **Personal Income (PI)**. First, let us note that out of NI, which is earned by the firms and government enterprises, a part of profit is not distributed among the factors of production. This is called **Undistributed Profits (UP)**. We have to deduct UP from NI to arrive at PI, since UP does not accrue to the households. Similarly, Corporate Tax, which is imposed on the earnings made by the firms, will also have to be deducted from the NI, since it does not accrue to the households. On the other hand, the households do receive interest payments from private firms or the government on past loans advanced by them. And households may have to pay interests to the firms and the government as well, in case they had borrowed money from either. So we have to deduct the net interests paid by the households to the firms and government. The households receive transfer payments from government and firms (pensions, scholarship, prizes, for example) which have to be added to calculate the Personal Income of the households.

Thus, $Personal \text{ income (PI)} \equiv NI - \text{Undistributed profits} - \text{Net interest payments made by households} - \text{Corporate tax} + \text{Transfer payments to the households from the government and firms}$.

However, even PI is not the income over which the households have complete say. They have to pay taxes from PI. If we deduct the **Personal Tax Payments** (income tax, for example) and **Non-tax Payments** (such as fines) from PI, we obtain what is known as the Personal Disposable Income. Thus

Personal Disposable Income (PDI) \equiv PI – Personal tax payments – Non-tax payments.

Personal Disposable Income is the part of the aggregate income which belongs to the households. They may decide to consume a part of it, and save the rest. In Fig. 2.3 we present a diagrammatic representation of the relations between these major macroeconomic variables.

A table of some of the principal macroeconomic variables of India (at current prices, for the years 1990-91 to 2004-05) has been provided at the end of the chapter, to give the reader a rough idea of their actual values.

NFIA		D			
GDP	GNP	NNP (at Market Price)	ID - Sub	NI (NNP at FC)	UP + NIH + CT - TrH
				PI	PTP + NP
					PDI

Fig. 2.3: Diagrammatic representation of the subcategories of aggregate income. NFIA: Net Factor Income from Abroad, D: Depreciation, ID: Indirect Taxes, Sub: Subsidies, UP: Undistributed Profits, NIH: Net Interest Payments by Households, CT: Corporate Taxes, TrH: Transfers received by Households, PTP: Personal Tax Payments, NP: Non-Tax Payments.

National Disposable Income and Private Income

Apart from these categories of aggregate macroeconomic variables, in India, a few other aggregate income categories are also used in National Income accounting

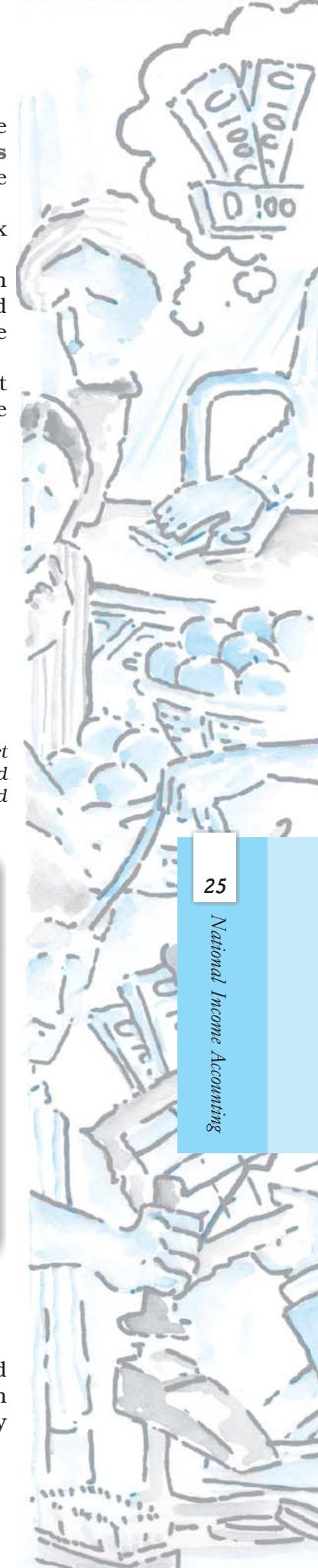
- **National Disposable Income** = Net National Product at market prices + Other current transfers from the rest of the world

The idea behind National Disposable Income is that it gives an idea of what is the maximum amount of goods and services the domestic economy has at its disposal. Current transfers from the rest of the world include items such as gifts, aids, etc.

- **Private Income** = Factor income from net domestic product accruing to the private sector + National debt interest + Net factor income from abroad + Current transfers from government + Other net transfers from the rest of the world

2.4 GOODS AND PRICES

One implicit assumption in all this discussion is that the prices of goods and services do not change during the period of our study. If prices change, then there may be difficulties in comparing GDPs. If we measure the GDP of a country



in two consecutive years and see that the figure for GDP of the latter year is twice that of the previous year, we may conclude that the volume of production of the country has doubled. But it is possible that only prices of all goods and services have doubled between the two years whereas the production has remained constant.

Therefore, in order to compare the GDP figures (and other macroeconomic variables) of different countries or to compare the GDP figures of the same country at different points of time, we cannot rely on GDPs evaluated at current market prices. For comparison we take the help of **real GDP**. Real GDP is calculated in a way such that the goods and services are evaluated at some **constant set of prices** (or **constant prices**). Since these prices remain fixed, if the Real GDP changes we can be sure that it is the volume of production which is undergoing changes. **Nominal GDP**, on the other hand, is simply the value of GDP at the current prevailing prices. For example, suppose a country only produces bread. In the year 2000 it had produced 100 units of bread, price was Rs 10 per bread. GDP at current price was Rs 1,000. In 2001 the same country produced 110 units of bread at price Rs 15 per bread. Therefore nominal GDP in 2001 was Rs 1,650 ($= 110 \times \text{Rs } 15$). Real GDP in 2001 calculated at the price of the year 2000 (2000 will be called the base year) will be $110 \times \text{Rs } 10 = \text{Rs } 1,100$.

Notice that the ratio of nominal GDP to real GDP gives us an idea of how the prices have moved from the **base year** (the year whose prices are being used to calculate the real GDP) to the current year. In the calculation of real and nominal GDP of the current year, the volume of production is fixed. Therefore, if these measures differ it is only due to change in the price level between the base year and the current year. The ratio of nominal to real GDP is a well known index of prices. This is called **GDP Deflator**. Thus if GDP stands for nominal GDP and gdp stands for real GDP then, $\text{GDP deflator} = \frac{\text{GDP}}{\text{gdp}}$.

Sometimes the deflator is also denoted in percentage terms. In such a case $\text{deflator} = \frac{\text{GDP}}{\text{gdp}} \times 100$ per cent. In the previous example, the GDP deflator is $\frac{1,650}{1,100} = 1.50$ (in percentage terms this is 150 per cent). This implies that the price of bread produced in 2001 was 1.5 times the price in 2000. Which is true because price of bread has indeed gone up from Rs 10 to Rs 15. Like GDP deflator, we can have GNP deflator as well.

There is another way to measure change of prices in an economy which is known as the **Consumer Price Index (CPI)**. This is the index of prices of a given basket of commodities which are bought by the representative consumer. CPI is generally expressed in percentage terms. We have two years under consideration – one is the base year, the other is the current year. We calculate the cost of purchase of a given basket of commodities in the base year. We also calculate the cost of purchase of the same basket in the current year. Then we express the latter as a percentage of the former. This gives us the Consumer Price Index of the current year vis-`a-vis the base year. For example let us take an economy which produces two goods, rice and cloth. A representative consumer buys 90 kg of rice and 5 pieces of cloth in a year. Suppose in the year 2000 the price of a kg of rice was Rs 10 and a piece of cloth was Rs 100. So the consumer had to spend a total sum of $\text{Rs } 10 \times 90 = \text{Rs } 900$ on rice in 2000. Similarly, she spent $\text{Rs } 100 \times 5 = \text{Rs } 500$ per year on cloth. Summation of the two items is, $\text{Rs } 900 + \text{Rs } 500 = \text{Rs } 1,400$.

Now suppose the prices of a kg of rice and a piece of cloth has gone up to Rs 15 and Rs 120 in the year 2005. To buy the same quantity of rice and clothes the representative will have to spend Rs 1,350 and Rs 600 respectively (calculated in a similar way as before). Their sum will be, Rs 1,350 + Rs 600 = Rs 1,950.

The CPI therefore will be $\frac{1,950}{1,400} \times 100 = 139.29$ (approximately).

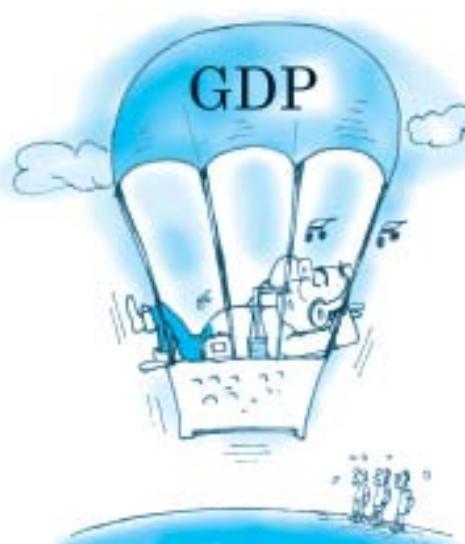
It is worth noting that many commodities have two sets of prices. One is the retail price which the consumer actually pays. The other is the wholesale price, the price at which goods are traded in bulk. These two may differ in value because of the margin kept by traders. Goods which are traded in bulk (such as raw materials or semi-finished goods) are not purchased by ordinary consumers. Like CPI, the index for wholesale prices is called **Wholesale Price Index (WPI)**. In countries like USA it is referred to as Producer Price Index (PPI). Notice CPI (and analogously WPI) may differ from GDP deflator because

1. The goods purchased by consumers do not represent all the goods which are produced in a country. GDP deflator takes into account all such goods and services.
2. CPI includes prices of goods consumed by the representative consumer, hence it includes prices of imported goods. GDP deflator does not include prices of imported goods.
3. The weights are constant in CPI – but they differ according to production level of each good in GDP deflator.

2.5 GDP AND WELFARE

Can the GDP of a country be taken as an index of the welfare of the people of that country? If a person has more income he or she can buy more goods and services and his or her material well-being improves. So it may seem reasonable to treat his or her income level as his or her level of well-being. GDP is the sum total of value of goods and services created within the geographical boundary of a country in a particular year. It gets distributed among the people as incomes (except for retained earnings). So we may be tempted to treat higher level of GDP of a country as an index of greater well-being of the people of that country (to account for price changes, we may take the value of real GDP instead of nominal GDP). But there are at least three reasons why this may not be correct

1. **Distribution of GDP – how uniform is it:** If the GDP of the country is rising, the welfare may not rise as a consequence. This is because the rise in GDP may



How uniform is the distribution of GDP? It still seems that a majority of the people are poor and only some have benefited.



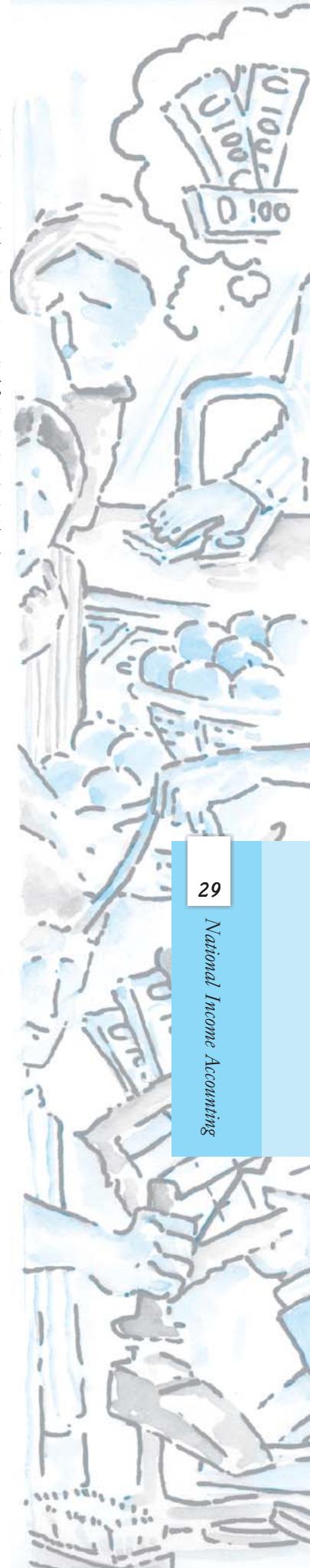
be concentrated in the hands of very few individuals or firms. For the rest, the income may in fact have fallen. In such a case the welfare of the entire country cannot be said to have increased. For example, suppose in year 2000, an imaginary country had 100 individuals each earning Rs 10. Therefore the GDP of the country was Rs 1,000 (by income method). In 2001, let us suppose the same country had 90 individuals earning Rs 9 each, and the rest 10 individual earning Rs 20 each. Suppose there had been no change in the prices of goods and services between these two periods. The GDP of the country in the year 2001 was $90 \times (\text{Rs } 9) + 10 \times (\text{Rs } 20) = \text{Rs } 810 + \text{Rs } 200 = \text{Rs } 1,010$. Observe that compared to 2000, the GDP of the country in 2001 was higher by Rs 10. But this has happened when 90 per cent of people of the country have seen a drop in their real income by 10 per cent (from Rs 10 to Rs 9), whereas only 10 per cent have benefited by a rise in their income by 100 per cent (from Rs 10 to Rs 20). 90 per cent of the people are worse off though the GDP of the country has gone up. If we relate welfare improvement in the country to the percentage of people who are better off, then surely GDP is not a good index.

2. **Non-monetary exchanges:** Many activities in an economy are not evaluated in monetary terms. For example, the domestic services women perform at home are not paid for. The exchanges which take place in the informal sector without the help of money are called barter exchanges. In barter exchanges goods (or services) are directly exchanged against each other. But since money is not being used here, these exchanges are not registered as part of economic activity. In developing countries, where many remote regions are underdeveloped, these kinds of exchanges do take place, but they are generally not counted in the GDPs of these countries. This is a case of underestimation of GDP. Hence GDP calculated in the standard manner may not give us a clear indication of the productive activity and well-being of a country.
3. **Externalities:** Externalities refer to the benefits (or harms) a firm or an individual causes to another for which they are not paid (or penalised). Externalities do not have any market in which they can be bought and sold. For example, let us suppose there is an oil refinery which refines crude petroleum and sells it in the market. The output of the refinery is the amount of oil it refines. We can estimate the value added of the refinery by deducting the value of intermediate goods used by the refinery (crude oil in this case) from the value of its output. The value added of the refinery will be counted as part of the GDP of the economy. But in carrying out the production the refinery may also be polluting the nearby river. This may cause harm to the people who use the water of the river. Hence their utility will fall. Pollution may also kill fish or other organisms of the river on which fish survive. As a result the fishermen of the river may be losing their income and utility. Such harmful effects that the refinery is inflicting on others, for which it does not have to bear any cost, are called externalities. In this case, the GDP is not taking into account such negative externalities. Therefore, if we take GDP as a measure of welfare of the economy we shall be overestimating the actual welfare. This was an example of negative externality. There can be cases of positive externalities as well. In such cases GDP will underestimate the actual welfare of the economy.

At a very fundamental level, the macroeconomy (it refers to the economy that we study in macroeconomics) can be seen as working in a circular way. The firms employ inputs supplied by households and produce goods and services to be sold to households. Households get the remuneration from the firms for the services rendered by them and buy goods and services produced by the firms. So we can calculate the aggregate value of goods and services produced in the economy by any of the three methods (a) measuring the aggregate value of factor payments (income method) (b) measuring the aggregate value of goods and services produced by the firms (product method) (c) measuring the aggregate value of spending received by the firms (expenditure method). In the product method, to avoid double counting, we need to deduct the value of intermediate goods and take into account only the aggregate value of final goods and services. We derive the formulae for calculating the aggregate income of an economy by each of these methods. We also take note that goods can also be bought for making investments and these add to the productive capacity of the investing firms. There may be different categories of aggregate income depending on whom these are accruing to. We have pointed out the difference between GDP, GNP, NNP at market price, NNP at factor cost, PI and PDI. Since prices of goods and services may vary, we have discussed how to calculate the three important price indices (GDP deflator, CPI, WPI). Finally we have noted that it may be incorrect to treat GDP as an index of the welfare of the country.

Key Concepts

Final goods	Consumption goods
Consumer durables	Capital goods
Intermediate goods	Stocks
Flows	Gross investment
Net investment	Depreciation
Wage	Interest
Profit	Rent
Circular flow of income	Product method of calculating National Income
Expenditure method of calculating National Income	Income method of calculating National Income
Macroeconomic model	Input
Value added	Inventories
Planned change in inventories	Unplanned change in inventories
Gross Domestic Product (GDP)	Net Domestic Product (NDP)
Gross National Product (GNP)	Net National Product (NNP) (at market price)
NNP (at factor cost) or National Income (NI)	Undistributed profits
Net interest payments made by households	Corporate tax
Transfer payments to the households from the government and firms	Personal Income (PI)
Personal tax payments	Non-tax payments
Personal Disposable Income (PDI)	National Disposable Income



Exercises



Private Income	Nominal GDP
Real GDP	Base year
GDP Deflator	Consumer Price Index (CPI)
Wholesale Price Index (WPI)	Externalities

- What are the four factors of production and what are the remunerations to each of these called?
- Why should the aggregate final expenditure of an economy be equal to the aggregate factor payments? Explain.
- Distinguish between stock and flow. Between net investment and capital which is a stock and which is a flow? Compare net investment and capital with flow of water into a tank.
- What is the difference between planned and unplanned inventory accumulation? Write down the relation between change in inventories and value added of a firm.
- Write down the three identities of calculating the GDP of a country by the three methods. Also briefly explain why each of these should give us the same value of GDP.
- Define budget deficit and trade deficit. The excess of private investment over saving of a country in a particular year was Rs 2,000 crores. The amount of budget deficit was (-) Rs 1,500 crores. What was the volume of trade deficit of that country?
- Suppose the GDP at market price of a country in a particular year was Rs 1,100 crores. Net Factor Income from Abroad was Rs 100 crores. The value of Indirect taxes – Subsidies was Rs 150 crores and National Income was Rs 850 crores. Calculate the aggregate value of depreciation.
- Net National Product at Factor Cost of a particular country in a year is Rs 1,900 crores. There are no interest payments made by the households to the firms/government, or by the firms/government to the households. The Personal Disposable Income of the households is Rs 1,200 crores. The personal income taxes paid by them is Rs 600 crores and the value of retained earnings of the firms and government is valued at Rs 200 crores. What is the value of transfer payments made by the government and firms to the households?
- From the following data, calculate Personal Income and Personal Disposable Income.

	Rs (crore)
(a) Net Domestic Product at factor cost	8,000
(b) Net Factor Income from abroad	200
(c) Undisbursed Profit	1,000
(d) Corporate Tax	500
(e) Interest Received by Households	1,500
(f) Interest Paid by Households	1,200
(g) Transfer Income	300
(h) Personal Tax	500
10. In a single day Raju, the barber, collects Rs 500 from haircuts; over this day, his equipment depreciates in value by Rs 50. Of the remaining Rs 450, Raju pays sales tax worth Rs 30, takes home Rs 200 and retains Rs 220 for improvement and buying of new equipment. He further pays Rs 20 as income tax from his income. Based on this information, complete Raju's contribution	

to the following measures of income (a) Gross Domestic Product (b) NNP at market price (c) NNP at factor cost (d) Personal income (e) Personal disposable income.

11. The value of the nominal GNP of an economy was Rs 2,500 crores in a particular year. The value of GNP of that country during the same year, evaluated at the prices of same base year, was Rs 3,000 crores. Calculate the value of the GNP deflator of the year in percentage terms. Has the price level risen between the base year and the year under consideration?
12. Write down some of the limitations of using GDP as an index of welfare of a country.

Suggested Readings

1. Bhaduri, A., 1990. *Macroeconomics: The Dynamics of Commodity Production*, pages 1 – 27, Macmillan India Limited, New Delhi.
2. Branson, W. H., 1992. *Macroeconomic Theory and Policy*, (third edition), pages 15 – 34, Harper Collins Publishers India Pvt Ltd., New Delhi.
3. Dornbusch, R and S. Fischer. 1988. *Macroeconomics*, (fourth edition) pages 29 – 62, McGraw Hill, Paris.
4. Mankiw, N. G., 2000. *Macroeconomics*, (fourth edition) pages 15 – 76, Macmillan Worth Publishers, New York.

Table 2.2: Various Macroeconomic Aggregates of India at Current Prices
(old series; unit: Rs crores); Source: Reserve Bank of India: *Handbook of Indian Economy*.

	GDP at Market Price	Net Factor Income from Abroad	GNP at Market Price	Consumption of Fixed capital (depreciation)	NNP at Market Price
1990-91	5,68,674	-7,545	5,61,129	53,264	5,07,865
1991-92	6,53,117	-10,077	6,43,040	64,402	5,78,638
1992-93	7,48,367	-11,645	7,36,722	74,512	6,62,210
1993-94	8,59,220	-12,080	8,47,140	83,353	7,63,787
1994-95	10,12,770	-13,083	9,99,687	97,994	9,01,693
1995-96	11,88,012	-13,484	11,74,528	1,17,926	10,56,602
1996-97	13,68,209	-13,082	13,55,127	1,36,503	12,18,624
1997-98	15,22,547	-13,205	15,09,342	1,51,997	13,57,345
1998-99	17,40,985	-14,968	17,26,017	1,68,066	15,57,951
1999-00	19,36,831	-15,431	19,21,400	1,82,359	17,39,041
2000-01	20,89,500	-18,109	20,71,391	1,97,895	18,73,696
2001-02	22,71,984	-15,566	22,56,418	2,17,679	20,38,739
2002-03	24,63,324	-13,166	24,50,158	2,32,952	22,17,206
2003-04	27,60,025	-14,078	27,45,947	2,53,637	24,92,310
2004-05	31,05,512	-17,707	30,87,805	2,77,131	28,17,968

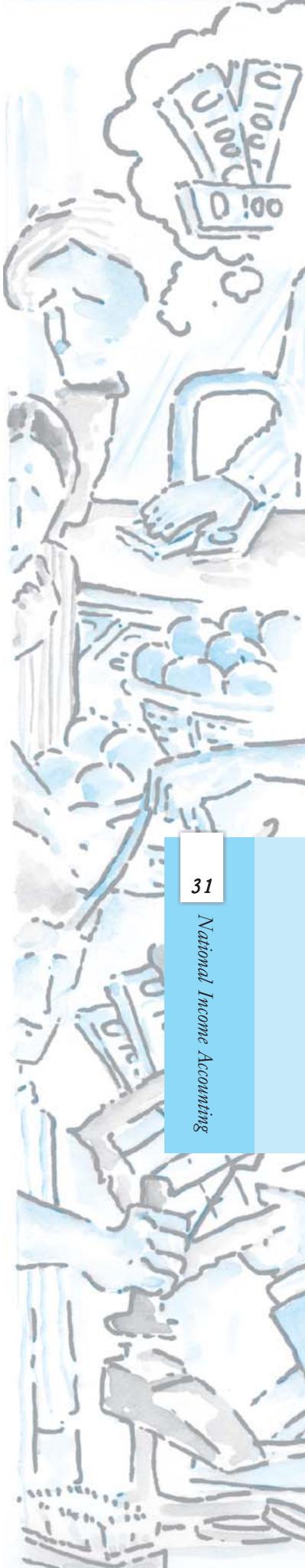


Table 2.3: Various Macroeconomic Aggregates of India at Current Prices
 (old series; unit: Rs crores); Source: Reserve Bank of India: *Handbook of Indian Economy*.

	Indirect Taxes – Subsidy	NNP at Factor Factor Cost (National Income)	Personal Disposable Income
1990-91	57,720	4,50,145	4,61,192
1991-92	64,031	5,14,607	5,27,018
1992-93	75,146	5,87,064	6,11,390
1993-94	77,875	6,85,912	7,07,692
1994-95	95,712	8,05,981	8,34,764
1995-96	1,14,741	9,41,861	9,49,191
1996-97	1,24,662	10,93,962	11,27,542
1997-98	1,32,399	12,24,946	12,53,142
1998-99	1,42,858	14,15,093	14,61,827
1999-00	1,74,993	15,64,048	16,11,834
2000-01	1,86,501	16,86,995	17,76,381
2001-02	1,90,510	18,48,229	19,67,770
2002-03	2,08,436	20,08,770	21,06,551
2003-04	2,40,240	22,52,070	23,58,503
2004-05	2,75,047	25,35,627	N. A.

Table 2.4: Various Macroeconomic Aggregates of India at Current Prices
 (old series; unit: Rs crores); Source: Reserve Bank of India: *Handbook of Indian Economy*.

	Private Final Consumption Expenditure	Gross Domestic Capital Formation (Investments made by both private and public sectors)	Government Final Consumption Expenditure
1990-91	3,81,157	1,49,536	66,030
1991-92	4,40,594	1,47,285	74,285
1992-93	4,96,310	1,76,722	83,957
1993-94	5,69,225	1,98,412	97,725
1994-95	6,59,239	1,63,356	1,08,639
1995-96	7,60,138	3,19,527	1,28,816
1996-97	8,96,470	3,34,999	1,45,725
1997-98	9,76,131	3,74,480	1,72,189
1998-99	11,34,134	3,93,021	2,14,033
1999-00	12,67,658	4,90,669	2,51,108
2000-01	13,53,709	4,98,179	2,64,237
2001-02	14,85,675	5,13,543	2,83,351
2002-03	15,83,879	6,10,228	2,91,547
2003-04	17,61,788	7,26,868	3,12,109
2004-05	N. A.	N. A.	N. A.

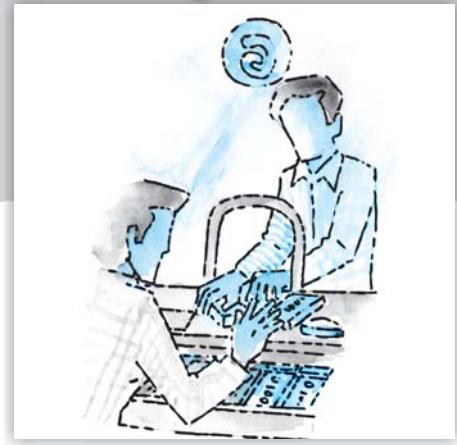
Money and Banking

Money is the commonly accepted medium of exchange. In an economy which consists of only one individual there cannot be any exchange of commodities and hence there is no role for money. Even if there are more than one individual but they do not take part in market transactions, such as a family living on an isolated island, money has no function for them. However, as soon as there are more than one economic agent who engage themselves in transactions through the market, money becomes an important instrument for facilitating these exchanges. Economic exchanges without the mediation of money are referred to as *barter exchanges*. However, they presume the rather improbable *double coincidence of wants*. Consider, for example, an individual who has a surplus of rice which she wishes to exchange for clothing. If she is not lucky enough she may not be able to find another person who has the diametrically opposite demand for rice with a surplus of clothing to offer in exchange. The search costs may become prohibitive as the number of individuals increases. Thus, to smoothen the transaction, an intermediate good is necessary which is acceptable to both parties. Such a good is called money. The individuals can then sell their produces for money and use this money to purchase the commodities they need. Though facilitation of exchanges is considered to be the principal role of money, it serves other purposes as well. Following are the main functions of money in a modern economy.

3.1 FUNCTIONS OF MONEY

As explained above, the first and foremost role of money is that it acts as a *medium of exchange*. Barter exchanges become extremely difficult in a large economy because of the high costs people would have to incur looking for suitable persons to exchange their surpluses.

Money also acts as a convenient *unit of account*. The value of all goods and services can be expressed in monetary units. When we say that the value of a certain wristwatch is Rs 500 we mean that the wristwatch can be exchanged for 500 units of money, where a unit of money is rupee in this case. If the price of a pencil is Rs 2 and that of a pen is Rs 10 we can calculate the relative price of a pen with respect to a pencil, viz. a pen is worth



$10 \div 2 = 5$ pencils. The same notion can be used to calculate the value of money itself with respect to other commodities. In the above example, a rupee is worth $1 \div 2 = 0.5$ pencil or $1 \div 10 = 0.1$ pen. Thus if prices of all commodities increase in terms of money which, in other words, can be regarded as a general increase in the price level, the value of money in terms of any commodity must have decreased – in the sense that a unit of money can now purchase less of any commodity. We call it a deterioration in the purchasing power of money.

A barter system has other deficiencies. It is difficult to carry forward one's wealth under the barter system. Suppose you have an endowment of rice which you do not wish to consume today entirely. You may regard this stock of surplus rice as an asset which you may wish to consume, or even sell off, for acquiring other commodities at some future date. But rice is a perishable item and cannot be stored beyond a certain period. Also, holding the stock of rice requires a lot of space. You may have to spend considerable time and resources looking for people with a demand for rice when you wish to exchange your stock for buying other commodities. This problem can be solved if you sell your rice for money. Money is not perishable and its storage costs are also considerably lower. It is also acceptable to anyone at any point of time. Thus money can act as a store of value for individuals. Wealth can be stored in the form of money for future use. However, to perform this function well, the value of money must be sufficiently stable. A rising price level may erode the purchasing power of money. It may be noted that any asset other than money can also act as a store of value, e.g. gold, landed property, houses or even bonds (to be introduced shortly). However, they may not be easily convertible to other commodities and do not have universal acceptability.

3.2 DEMAND FOR MONEY

Money is the most liquid of all assets in the sense that it is universally acceptable and hence can be exchanged for other commodities very easily. On the other hand, it has an opportunity cost. If, instead of holding on to a certain cash balance, you put the money in a savings account in some bank you can earn interest on that money. While deciding on how much money to hold at a certain point of time one has to consider the trade off between the advantage of liquidity and the disadvantage of the foregone interest. Demand for money balance is thus often referred to as liquidity preference. People desire to hold money balance broadly from two motives.

3.2.1 The Transaction Motive

The principal motive for holding money is to carry out transactions. If you receive your income weekly and pay your bills on the first day of every week, you need not hold any cash balance throughout the rest of the week; you may as well ask your employer to deduct your expenses directly from your weekly salary and deposit the balance in your bank account. But our expenditure patterns do not normally match our receipts. People earn incomes at discrete points in time and spend it continuously throughout the interval. Suppose you earn Rs 100 on the first day of every month and run down this balance evenly over the rest of the month. Thus your cash balance at the beginning and end of the month are Rs 100 and 0, respectively. Your average cash holding can then be calculated as $(\text{Rs } 100 + \text{Rs } 0) \div 2 = \text{Rs } 50$, with which you are making transactions worth Rs 100 per month. Hence your average transaction demand for money is equal to half your monthly income, or, in other words, half the value of your monthly transactions.

Consider, next, a two-person economy consisting of two entities – a firm (owned by one person) and a worker. The firm pays the worker a salary of Rs 100 at the beginning of every month. The worker, in turn, spends this income over the month on the output produced by the firm – the only good available in this economy! Thus, at the beginning of each month the worker has a money balance of Rs 100 and the firm a balance of Rs 0. On the last day of the month the picture is reversed – the firm has gathered a balance of Rs 100 through its sales to the worker. The average money holding of the firm as well as the worker is equal to Rs 50 each. Thus the total transaction demand for money in this economy is equal to Rs 100. The total volume of monthly transactions in this economy is Rs 200 – the firm has sold its output worth Rs 100 to the worker and the latter has sold her services worth Rs 100 to the firm. The transaction demand for money of the economy is again a fraction of the total volume of transactions in the economy over the unit period of time.

In general, therefore, the transaction demand for money in an economy, M_T^d , can be written in the following form

$$M_T^d = k \cdot T \quad (3.1)$$

where T is the total value of (nominal) transactions in the economy over unit period and k is a positive fraction.

The two-person economy described above can be looked at from another angle. You may perhaps find it surprising that the economy uses money balance worth only Rs 100 for making transactions worth Rs 200 per month. The answer to this riddle is simple – each rupee is changing hands twice a month. On the first day, it is being transferred from the employer's pocket to that of the worker and sometime during the month, it is passing from the worker's hand to the employer's. The number of times a unit of money changes hands during the unit period is called the **velocity of circulation of money**. In the above example it is 2, inverse of half – the ratio of money balance and the value of transactions. Thus, in general, we may rewrite equation (3.1) in the following form

$$\frac{1}{k} \cdot M_T^d = T, \text{ or, } v \cdot M_T^d = T \quad (3.2)$$

where, $v = 1/k$ is the velocity of circulation. Note that the term on the right hand side of the above equation, T , is a flow variable whereas money demand, M_T^d , is a stock concept – it refers to the stock of money people are willing to hold at a particular point of time. The velocity of money, v , however, has a time dimension. It refers to the number of times every unit of stock changes hand during a unit period of time, say, a month or a year. Thus, the left hand side, $v \cdot M_T^d$, measures the total value of monetary transactions that has been made with this stock in the unit period of time. This is a flow variable and is, therefore, equal to the right hand side.

We are ultimately interested in learning the relationship between the aggregate transaction demand for money of an economy and the (nominal) GDP in a given year. The total value of annual transactions in an economy includes transactions in all intermediate goods and services and is clearly much greater than the nominal GDP. However, normally, there exists a stable, positive relationship between value of transactions and the nominal GDP. An increase in nominal GDP implies an increase in the total value of transactions and hence a greater transaction demand for money from equation (3.1). Thus, in general, equation (3.1) can be modified in the following way

$$M_T^d = kPY \quad (3.3)$$

where Y is the real GDP and P is the general price level or the GDP deflator. The above equation tells us that transaction demand for money is positively related to the real income of an economy and also to its average price level.

3.2.2 The Speculative Motive

An individual may hold her wealth in the form of landed property, bullion, bonds, money etc. For simplicity, let us club all forms of assets other than money together into a single category called 'bonds'. Typically, bonds are papers bearing the promise of a future stream of monetary returns over a certain period of time. These papers are issued by governments or firms for borrowing money from the public and they are tradable in the market. Consider the following two-period bond. A firm wishes to raise a loan of Rs 100 from the public. It issues a bond that assures Rs 10 at the end of the first year and Rs 10 plus the principal of Rs 100 at the end of the second year. Such a bond is said to have a face value of Rs 100, a maturity period of two years and a coupon rate of 10 per cent. Assume that the rate of interest prevailing in your savings bank account is equal to 5 per cent. Naturally you would like to compare the earning from this bond with the interest earning of your savings bank account. The exact question that you would ask is as follows: How much money, if kept in my savings bank account, will generate Rs 10 at the end of one year? Let this amount be X . Therefore

$$X(1 + \frac{5}{100}) = 10$$

In other words

$$X = \frac{10}{(1 + \frac{5}{100})}$$

This amount, Rs X , is called the present value of Rs 10 discounted at the market rate of interest. Similarly, let Y be the amount of money which if kept in the savings bank account will generate Rs 110 at the end of two years. Thus, the present value of the stream of returns from the bond should be equal to

$$PV = X + Y = \frac{10}{(1 + \frac{5}{100})} + \frac{(10 + 100)}{(1 + \frac{5}{100})^2}$$

Calculation reveals that it is Rs 109.29 (approx.). It means that if you put Rs 109.29 in your savings bank account it will fetch the same return as the bond. But the seller of the bond is offering the same at a face value of only Rs 100. Clearly the bond is more attractive than the savings bank account and people will rush to get hold of the bond. Competitive bidding will raise the price of the bond above its face value, till price of the bond is equal to its PV. If price rises above the PV the bond becomes less attractive compared to the savings bank account and people would like to get rid of it. The bond will be in excess supply and there will be downward pressure on the bond-price which will bring it back to the PV. It is clear that under competitive assets market condition the price of a bond must always be equal to its present value in equilibrium.

Now consider an increase in the market rate of interest from 5 per cent to 6 per cent. The present value, and hence the price of the same bond, will become

$$\frac{10}{(1 + \frac{6}{100})} + \frac{(10 + 100)}{(1 + \frac{6}{100})^2} = 107.33 \text{ (approx.)}$$

It follows that the price of a bond is inversely related to the market rate of interest.

Different people have different expectations regarding the future movements in the market rate of interest based on their private information regarding the economy. If you think that the market rate of interest should eventually settle down to 8 per cent per annum, then you may consider the current rate of 5 per cent too low to be sustainable over time. You expect interest rate to rise and consequently bond prices to fall. If you are a bond holder a decrease in bond price means a loss to you – similar to a loss you would suffer if the value of a property held by you suddenly depreciates in the market. Such a loss occurring from a falling bond price is called a capital loss to the bond holder. Under such circumstances, you will try to sell your bond and hold money instead. Thus speculations regarding future movements in interest rate and bond prices give rise to the speculative demand for money.

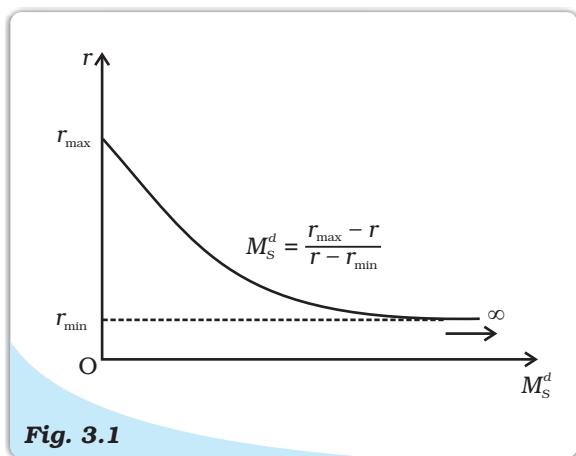
When the interest rate is very high everyone expects it to fall in future and hence anticipates capital gains from bond-holding. Hence people convert their money into bonds. Thus, speculative demand for money is low. When interest rate comes down, more and more people expect it to rise in the future and anticipate capital loss. Thus they convert their bonds into money giving rise to a high speculative demand for money. Hence speculative demand for money is inversely related to the rate of interest. Assuming a simple form, the speculative demand for money can be written as

$$M_S^d = \frac{r_{\max} - r}{r - r_{\min}} \quad (3.4)$$

where r is the market rate of interest and r_{\max} and r_{\min} are the upper and lower limits of r , both positive constants. It is evident from equation (3.4) that as r decreases from r_{\max} to r_{\min} , the value of M_S^d increases from 0 to ∞ .

As mentioned earlier, interest rate can be thought of as an opportunity cost or ‘price’ of holding money balance. If supply of money in the economy increases and people purchase bonds with this extra money, demand for bonds will go up, bond prices will rise and rate of interest will decline. In other words, with an increased supply of money in the economy the price you have to pay for holding money balance, viz. the rate of interest, should come down. However, if the market rate of interest is already low enough so that everybody expects it to rise in future, causing capital losses, nobody will wish to hold bonds. Everyone in the economy will hold their wealth in money balance and if additional money is injected within the economy it will be used up to satiate people’s craving for money balances without increasing the demand for bonds and without further lowering the rate of interest below the floor r_{\min} . Such a situation is called a **liquidity trap**. The speculative money demand function is infinitely elastic here.

In Fig. 3.1 the speculative demand for money is plotted on the horizontal axis and the rate



The Speculative Demand for Money

of interest on the vertical axis. When $r = r_{\max}$, speculative demand for money is zero. The rate of interest is so high that everyone expects it to fall in future and hence is sure about a future capital gain. Thus everyone has converted the speculative money balance into bonds. When $r = r_{\min}$, the economy is in the liquidity trap. Everyone is sure of a future rise in interest rate and a fall in bond prices. Everyone puts whatever wealth they acquire in the form of money and the speculative demand for money is infinite.

Total demand for money in an economy is, therefore, composed of transaction demand and speculative demand. The former is directly proportional to real GDP and price level, whereas the latter is inversely related to the market rate of interest. The aggregate money demand in an economy can be summarised by the following equation

$$\begin{aligned} M^d &= M_T^d + M_S^d \\ \text{or, } M^d &= kPY + \frac{r_{\max} - r}{r - r_{\min}} \end{aligned} \quad (3.5)$$

3.3 THE SUPPLY OF MONEY

In a modern economy money consists mainly of currency notes and coins issued by the monetary authority of the country. In India currency notes are issued by the Reserve Bank of India (RBI), which is the monetary authority in India. However, coins are issued by the Government of India. Apart from currency notes and coins, the balance in savings, or current account deposits, held by the public in commercial banks is also considered money since cheques drawn on these accounts are used to settle transactions. Such deposits are called demand deposits as they are payable by the bank on demand from the account-holder. Other deposits, e.g. fixed deposits, have a fixed period to maturity and are referred to as **time deposits**.

Though a hundred-rupee note can be used to obtain commodities worth Rs 100 from a shop, the value of the paper itself is negligible – certainly less than Rs 100. Similarly, the value of the metal in a five-rupee coin is probably not worth Rs 5. Why then do people accept such notes and coins in exchange of goods which are apparently more valuable than these? The value of the currency notes and coins is derived from the guarantee provided by the issuing authority of these items. Every currency note bears on its face a promise from the Governor of RBI that if someone produces the note to RBI, or any other commercial bank, RBI will be responsible for giving the person purchasing power equal to the value printed on the note. The same is also true of coins. Currency notes and coins are therefore called **fiat money**. They do not have **intrinsic value** like a gold or silver coin. They are also called **legal tenders** as they cannot be refused by any citizen of the country for settlement of any kind of transaction. Cheques drawn on savings or current accounts, however, can be refused by anyone as a mode of payment. Hence, demand deposits are not legal tenders.

3.3.1 Legal Definitions: Narrow and Broad Money

Money supply, like money demand, is a stock variable. The total stock of money in circulation among the public at a particular point of time is called money supply. RBI publishes figures for four alternative measures of money supply, viz. M1, M2, M3 and M4. They are defined as follows

$$M1 = CU + DD$$

$$M2 = M1 + \text{Savings deposits with Post Office savings banks}$$

$M3 = M1 + \text{Net time deposits of commercial banks}$

$M4 = M3 + \text{Total deposits with Post Office savings organisations (excluding National Savings Certificates)}$

where, CU is currency (notes plus coins) held by the public and DD is net demand deposits held by commercial banks. The word 'net' implies that only deposits of the public held by the banks are to be included in money supply. The interbank deposits, which a commercial bank holds in other commercial banks, are not to be regarded as part of money supply.

M1 and M2 are known as **narrow money**. M3 and M4 are known as **broad money**. These gradations are in decreasing order of liquidity. M1 is most liquid and easiest for transactions whereas M4 is least liquid of all. M3 is the most commonly used measure of money supply. It is also known as **aggregate monetary resources**¹.

3.3.2 Money Creation by the Banking System

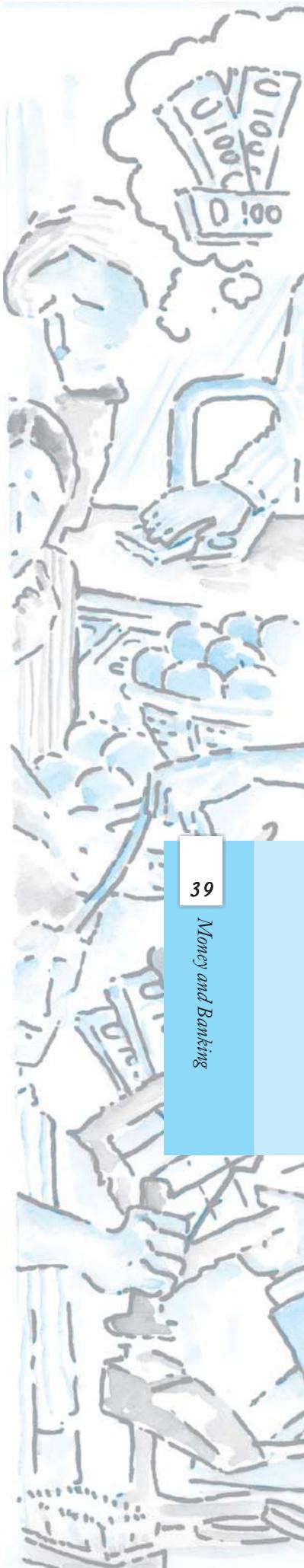
In this section we shall explore the determinants of money supply. Money supply will change if the value of any of its components such as CU, DD or Time Deposits changes. In what follows we shall, for simplicity, use the most liquid definition of money, viz. $M1 = CU + DD$, as the measure of money supply in the economy. Various actions of the monetary authority, RBI, and commercial banks are responsible for changes in the values of these items. The preference of the public for holding cash balances vis-`a-vis deposits in banks also affect the money supply. These influences on money supply can be summarised by the following key ratios.

The Currency Deposit Ratio: The currency deposit ratio (**cdr**) is the ratio of money held by the public in currency to that they hold in bank deposits. $cdr = CU/DD$. If a person gets Re 1 she will put Rs $1/(1 + cdr)$ in her bank account and keep Rs $cdr/(1 + cdr)$ in cash. It reflects people's preference for liquidity. It is a purely behavioural parameter which depends, among other things, on the seasonal pattern of expenditure. For example, cdr increases during the festive season as people convert deposits to cash balance for meeting extra expenditure during such periods.

The Reserve Deposit Ratio: Banks hold a part of the money people keep in their bank deposits as reserve money and loan out the rest to various investment projects. Reserve money consists of two things – vault cash in banks and deposits of commercial banks with RBI. Banks use this reserve to meet the demand for cash by account holders. Reserve deposit ratio (**rdr**) is the proportion of the total deposits commercial banks keep as reserves.

Keeping reserves is costly for banks, as, otherwise, they could lend this balance to interest earning investment projects. However, RBI requires commercial banks to keep reserves in order to ensure that banks have a safe cushion of assets to draw on when account holders want to be paid. RBI uses various policy instruments to bring forth a healthy rdr in commercial banks. The first instrument is the **Cash Reserve Ratio** which specifies the fraction of their deposits that banks must keep with RBI. There is another tool called **Statutory Liquidity Ratio** which requires the banks to maintain

¹See Appendix 3.2 for an estimate of the variations in M1 and M3 over time.



a given fraction of their total demand and time deposits in the form of specified liquid assets. Apart from these ratios RBI uses a certain interest rate called the **Bank Rate** to control the value of rdr. Commercial banks can borrow money from RBI at the bank rate when they run short of reserves. A high bank rate makes such borrowing from RBI costly and, in effect, encourages the commercial banks to maintain a healthy rdr.

Table 3.1: Sample Balance Sheet of a Commercial Bank

Assets – Rs	Liability – Rs	
• Reserves	Deposits	100
– Vault Cash 15		
– Deposits with RBI 5		
• Bank Credit		
– Loans 30		
– Investments 50		
rdr = 0.2		

Commercial Banks

Commercial Banks accept deposits from the public and lend out this money to interest earning investment projects. The rate of interest offered by the bank to deposit holders is called the ‘borrowing rate’ and the rate at which banks lend out their reserves to investors is called the ‘lending rate’. The difference between the two rates, called ‘spread’, is the profit that is appropriated by the banks. Deposits are broadly of two types – demand deposits, payable by the banks on demand from the account holder, e.g. current and savings account deposits, and time deposits, which have a fixed period to maturity, e.g. fixed deposits. Lending by commercial banks consists mainly of cash credit, demand and short-term loans to private investors and banks’ investments in government securities and other approved bonds. The creditworthiness of a person is judged by her current assets or the **collateral** (a security pledged for the repayment of a loan) she can offer.

Table 3.2: Sample Balance Sheet of RBI

Assets (sources) – Rs	Liability (uses) – Rs	
Gold 10	Currency	
Foreign Exchange 20	Currency held by Public	200
Govt. Securities (Loan to GOI) 230	Vault Cash held by Commercial Banks	10
Loan to Commercial Banks 5	Deposits of Commercial Banks with RBI	40
	Treasury Deposits of GOI	15
Monetary Base (sources) 265	Monetary Base (uses)	265

High Powered Money: The total liability of the monetary authority of the country, RBI, is called the **monetary base or high powered money**. It consists of currency (notes and coins in circulation with the public and vault cash of commercial banks) and deposits held by the Government of India and commercial banks with RBI. If a member of the public produces a currency note to RBI the latter must pay her value equal to the figure printed on the note. Similarly, the deposits are also refundable by RBI on demand from deposit-holders. These items are claims which the general public, government or banks have on RBI and hence are considered to be the liability of RBI.

RBI acquires assets against these liabilities. The process can be understood easily if we consider a simple stylised example. Suppose RBI purchases gold or dollars worth Rs 5. It pays for the gold or foreign exchange by issuing currency to the seller. The currency in circulation in the economy thus goes up by Rs 5, an item that shows up on the **liability** side of the balance sheet. The value of the acquired assets, also equal to Rs 5, is entered under the appropriate head on the Assets side. Similarly, RBI acquires debt bonds or securities issued by the government and pays the government by issuing currency in return. It issues loans to commercial banks in a similar fashion².

We are now ready to explain the mechanism of money creation by the monetary authority, RBI. Suppose RBI wishes to increase the money supply. It will then inject additional high powered money into the economy in the following way. Let us assume that RBI purchases some asset, say, government bonds or gold worth Rs H from the market. It will issue a cheque of Rs H on itself to the seller of the bond. Assume also that the values of cdr and rdr for this economy are 1 and 0.2, respectively. The seller encashes the cheque at her account in Bank A, keeping Rs $\frac{H}{2}$ in her account and taking Rs $\frac{H}{2}$ away as cash. Currency held by the public thus goes up by $\frac{H}{2}$. Bank A's liability goes up by Rs $\frac{H}{2}$ because of this increment in deposits. But its assets also go up by the same amount through the possession of this cheque, which is nothing but a claim of the same amount on RBI. The liability of RBI goes up by Rs H , which is the sum total of the claims of Bank A and its client, the seller, worth Rs $\frac{H}{2}$ and Rs $\frac{H}{2}$, respectively. Thus, by definition, high powered money increases by Rs H .

The process does not end here. Bank A will keep Rs $\frac{0.2H}{2}$ of the extra deposit as reserve and loan out the rest, i.e. $\text{Rs } \frac{(1-0.2)H}{2} = \text{Rs } \frac{0.8H}{2}$ to another borrower³. The borrower will presumably use this loan on some investment project and spend the money as factor payment. Suppose a worker of that project gets the payment. The worker will then keep Rs $\frac{0.8H}{4}$ as cash and put Rs $\frac{0.8H}{4}$ in her account in Bank B. Bank B, in turn, will lend Rs $\frac{0.64H}{4}$. Someone who receives that money will keep $\frac{0.64H}{8}$ in cash and put $\frac{0.64H}{8}$ in some other Bank C. The process continues *ad infinitum*.

²See Appendix 3.2 for an estimate of changes in the sources of monetary base over time.

³We are implicitly assuming that the demand for bank loans at the existing lending rate is infinite, i.e. banks can loan out any amount they wish.

Let us now look at Table 3.3 to get an idea of how the money supply in the economy is changing round after round.

Table 3.3: The Multiplier Process

	Currency	Deposits	Money Supply
Round 1	$\frac{H}{2}$	$\frac{H}{2}$ (Bank A)	H
Round 2	$\frac{0.8H}{4}$	$\frac{0.8H}{4}$ (Bank B)	$\frac{0.8H}{2}$
Round 3	$\frac{0.64H}{8}$	$\frac{0.64H}{8}$ (Bank C)	$\frac{0.64H}{4}$
.	.	.	.
.	.	.	.
.	.	.	etc.

The second column shows the increment in the value of currency holding among the public in each round. The third column measures the value of the increment in bank deposits in the economy in a similar way. The last column is the sum total of these two, which, by definition, is the increase in money supply in the economy in each round (presumably the simplest and the most liquid measure of money, viz. M1). Note that the amount of increments in money supply in successive rounds are gradually diminishing. After a large number of rounds, therefore, the size of the increments will be virtually indistinguishable from zero and subsequent round effects will not practically contribute anything to the total volume of money supply. We say that the round effects on money supply represent a **convergent** process. In order to find out the total increase in money supply we must add up the infinite geometric series⁴ in the last column, i.e.

$$H + \frac{0.8H}{2} + \frac{0.64H}{4} + \dots \dots \infty$$

$$H \left\{ 1 + \left(\frac{0.8}{2} \right) + \left(\frac{0.8}{2} \right)^2 + \dots \dots \infty \right\} = \frac{H}{1 - 0.4} = \frac{5H}{3}$$

The increment in total money supply exceeds the amount of high powered money initially injected by RBI into the economy. We define **money multiplier** as the ratio of the stock of money to the stock of high powered money in an economy, viz. M/H . Clearly, its value is greater than 1.

We need not always go through the round effects in order to compute the value of the money multiplier. We did it here just to demonstrate the process of money creation in which the commercial banks have an important role to play. However, there exists a simpler way of deriving the multiplier. By definition, money supply is equal to currency plus deposits

$$M = CU + DD = (1 + cdr)DD$$

where, $cdr = CU/DD$. Assume, for simplicity, that treasury deposit of the Government with RBI is zero. High powered money then consists of currency held by the public and reserves of the commercial banks, which include vault cash and banks' deposits with RBI. Thus

$$H = CU + R = cdr \cdot DD + rdr \cdot DD = (cdr + rdr)DD$$

⁴See Appendix 3.1 for a brief discussion on such series.

Thus the ratio of money supply to high powered money

$$\frac{M}{H} = \frac{1 + cdr}{cdr + rdr} > 1, \quad \text{as } rdr < 1$$

This is precisely the measure of the money multiplier.

3.3.3 Instruments of Monetary Policy and the Reserve Bank of India

It is clear from the above discussion that the total amount of money stock in the economy is much greater than the volume of high powered money. Commercial banks create this extra amount of money by giving out a part of their deposits as loans or investment credits. It is also evident from Table 3.1 that the total amount of deposits held by all commercial banks in the country is much larger than the total size of their reserves. If all the account-holders of all commercial banks in the country want their deposits back at the same time, the banks will not have enough means to satisfy the need of every account-holder and there will be bank failures.

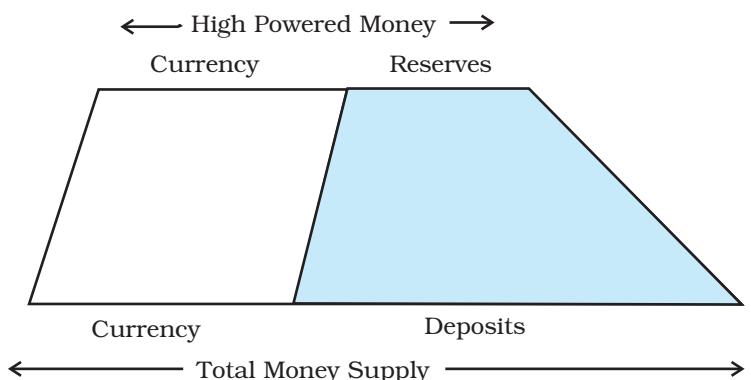
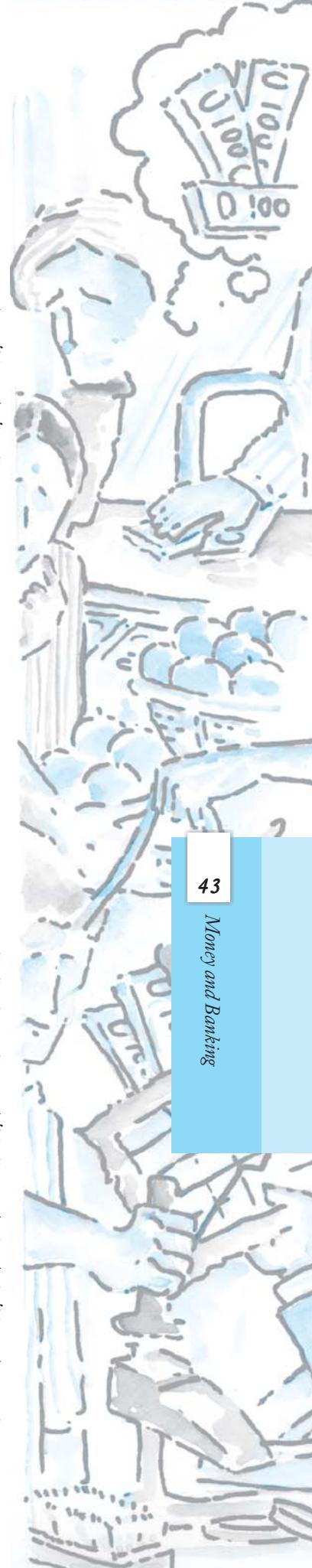


Fig. 3.2: High Powered Money in Relation to Total Money Supply

All this is common knowledge to every informed individual in the economy. Why do they still keep their money in bank deposits when they are aware of the possibility of default by their banks in case of a bank run (a situation where everybody wants to take money out of one's bank account before the bank runs out of reserves)?

The Reserve Bank of India plays a crucial role here. In case of a crisis like the above it stands by the commercial banks as a guarantor and extends loans to ensure the solvency of the latter. This system of guarantee assures individual account-holders that their banks will be able to pay their money back in case of a crisis and there is no need to panic thus avoiding bank runs. This role of the monetary authority is known as the **lender of last resort**.

Apart from acting as a banker to the commercial banks, RBI also acts as a banker to the Government of India, and also, to the state governments. It is commonly held that the government, sometimes, 'prints money' in case of a budget deficit, i.e., when it cannot meet its expenses (e.g. salaries to the government employees, purchase of defense equipment from a manufacturer of such goods etc.) from the tax revenue it has earned. The government, however, has no legal authority to issue currency in this fashion. So it borrows money by selling treasury bills or government securities to RBI, which issues currency to the government in return. The government then pays for its expenses with this



money. The money thus ultimately comes into the hands of the general public (in the form of salary or sales proceeds of defense items etc.) and becomes a part of the money supply. Financing of budget deficits by the governments in this fashion is called **Deficit Financing through Central Bank Borrowing**.

However, the most important role of RBI is as the controller of money supply and credit creation in the economy. RBI is the independent authority for conducting monetary policy in the best interests of the economy – it increases or decreases the supply of high powered money in the economy and creates incentives or disincentives for the commercial banks to give loans or credits to investors. The instruments which RBI uses for conducting monetary policy are as follows.

Open Market Operations: RBI purchases (or sells) government securities to the general public in a bid to increase (or decrease) the stock of high powered money in the economy. Suppose RBI purchases Rs 100 worth government securities from the bond market. It will issue a cheque of Rs 100 on itself to the seller of the bond. The seller will deposit the cheque in her bank, which, in turn, will credit the seller's account with a balance of Rs 100. The bank's deposits go up by Rs 100 which is a liability to the bank. However, its assets also go up by Rs 100 by the possession of this cheque, which is a claim on RBI. The bank will deposit this cheque to RBI which, in turn, will credit the bank's account with RBI with Rs 100. The changes in RBI's balance sheet are shown in Table 3.4.

Total liability of RBI, or, by definition, the supply of high powered money in the economy has gone up by Rs 100. If RBI wishes to reduce the supply of high powered money it undertakes an open market sale of government securities of its own holding in just the reverse fashion, thereby reducing the monetary base.

Table 3.4: Effects of Open Market Purchase on the Balance Sheet of RBI

Assets (sources) – Rs	Liability (uses) – Rs
All Other Assets 0	Currency 0
Government Securities + 100	Deposits of Commercial Banks with RBI + 100
Monetary Base (sources) + 100	Monetary Base (uses) + 100

Bank Rate Policy: As mentioned earlier, RBI can affect the reserve deposit ratio of commercial banks by adjusting the value of the bank rate – which is the rate of interest commercial banks have to pay RBI – if they borrow money from it in case of shortage of reserves. A low (or high) bank rate encourages banks to keep smaller (or greater) proportion of their deposits as reserves, since borrowing from RBI is now less (or more) costly than before. As a result banks use a greater (or smaller) proportion of their resources for giving out loans to borrowers or investors, thereby enhancing (or depressing) the multiplier process via assisting (or resisting) secondary money creation. In short, a low (or high) bank rate reduces (or increases) rdr and hence increases (or decreases) the value of the money multiplier, which is $(1 + cdr)/(cdr + rdr)$. Thus, for any given amount of high powered money, H , total money supply goes up.

Varying Reserve Requirements: Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR) also work through the rdr-route. A high (or low) value of CRR or SLR helps increase (or decrease) the value of reserve deposit ratio, thus diminishing (or increasing) the value of the money multiplier and money supply in the economy in a similar fashion.

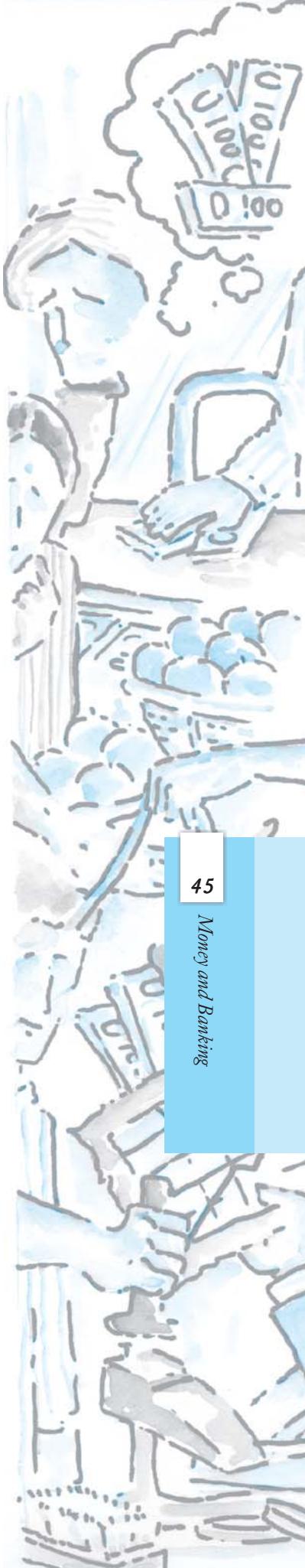
Sterilisation by RBI: RBI often uses its instruments of money creation for stabilising the stock of money in the economy from external shocks. Suppose due to future growth prospects in India investors from across the world increase their investments in Indian bonds which under such circumstances, are likely to yield a high rate of return. They will buy these bonds with foreign currency. Since one cannot purchase goods in the domestic market with foreign currency, a person who sells these bonds to foreign investors will exchange her foreign currency holding into rupee at a commercial bank. The bank, in turn, will submit this foreign currency to RBI and its deposits with RBI will be credited with equivalent sum of money. What kind of adjustments take place from this entire transaction? The commercial bank's total reserves and deposits remain unchanged (it has purchased the foreign currency from the seller using its vault cash, which, therefore, goes down; but the bank's deposit with RBI goes up by an equivalent amount – leaving its total reserves unchanged). There will, however, be increments in the assets and liabilities on the RBI balance sheet. RBI's foreign exchange holding goes up. On the other hand, the deposits of commercial banks with RBI also increase by an equal amount. But that means an increase in the stock of high powered money – which, by definition, is equal to the total liability of RBI. With money multiplier in operation, this, in turn, will result in increased money supply in the economy.

This increased money supply may not altogether be good for the economy's health. If the volume of goods and services produced in the economy remains unchanged, the extra money will lead to increase in prices of all commodities. People have more money in their hands with which they compete each other in the commodities market for buying the same old stock of goods. As too much money is now chasing the same old quantities of output, the process ends up in bidding up prices of every commodity – an increase in the general price level, which is also known as inflation.

RBI often intervenes with its instruments to prevent such an outcome. In the above example, RBI will undertake an open market sale of government securities of an amount equal to the amount of foreign exchange inflow in the economy, thereby keeping the stock of high powered money and total money supply unchanged. Thus it sterilises the economy against adverse external shocks. This operation of RBI is known as **sterilisation**.

Money supply is, therefore, an important macroeconomic variable. Its overall influence on the values of the equilibrium rate of interest, price level and output of an economy is of great significance. We take up these issues in the next chapter.

Exchange of commodities without the mediation of money is called Barter Exchange. It suffers from lack of double coincidence of wants. Money facilitates exchanges by acting as a commonly acceptable medium of exchange. In a modern economy, people hold money broadly from two motives – transaction motive and speculative motive. Supply of money, on the other hand, consists of currency notes and coins, demand and time deposits held by commercial banks, etc. It is classified as narrow and broad money according to the decreasing order of liquidity. In India, the supply of money is regulated by the Reserve Bank of India (RBI) which acts as the monetary authority of the country. Various actions of the public, the commercial banks of the country and RBI are responsible for changes in the supply of money in the economy. RBI regulates money supply by controlling the stock of high powered money, the bank rate and reserve requirements of the commercial banks. It also sterilises the money supply in the economy against external shocks.



Key Concepts



Barter exchange	Double coincidence of wants
Money	Medium of exchange
Unit of account	Store of value
Transaction demand	Speculative demand
Bonds	Present value
Rate of interest	Capital gain or loss
Liquidity trap	Fiat money
Legal tender	Narrow money
Broad money	Aggregate monetary resources
Currency deposit ratio	Reserve deposit ratio
High powered money	Money multiplier
Lender of last resort	Deficit financing through central bank borrowing
Open market operation	Bank Rate
Cash Reserve Ratio (CRR)	Statutory Liquidity Ratio (SLR)
Sterilisation	

Exercises



1. What is a barter system? What are its drawbacks?
2. What are the main functions of money? How does money overcome the shortcomings of a barter system?
3. What is transaction demand for money? How is it related to the value of transactions over a specified period of time?
4. Suppose a bond promises Rs 500 at the end of two years with no intermediate return. If the rate of interest is 5 per cent per annum what is the price of the bond?
5. Why is speculative demand for money inversely related to the rate of interest?
6. What is 'liquidity trap'?
7. What are the alternative definitions of money supply in India?
8. What is a 'legal tender'? What is 'fiat money'?
9. What is High Powered Money?
10. Explain the functions of a commercial bank.
11. What is money multiplier? How will you determine its value? What ratios play an important role in the determination of the value of the money multiplier?
12. What are the instruments of monetary policy of RBI? How does RBI stabilize money supply against exogenous shocks?
13. Do you consider a commercial bank 'creator of money' in the economy?
14. What role of RBI is known as 'lender of last resort'?

Suggested Readings

1. Dornbusch, R. and S. Fischer. 1990. *Macroeconomics*, (fifth edition) pages 345 – 427, McGraw Hill, Paris.
2. Branson, W. H., 1992. *Macroeconomic Theory and Policy*, (second edition), pages 243 – 280, Harper Collins Publishers India Pvt. Ltd., New Delhi.
3. Sikdar, S., 2006. *Principles of Macroeconomics*, pages 77 – 89, Oxford University Press, New Delhi.

The Sum of an Infinite Geometric Series

We want to find out the sum of an infinite geometric series of the following form

$$S = a + a.r + a.r^2 + a.r^3 + \dots + a.r^n \dots \infty$$

where a and r are real numbers and $0 < r < 1$. To compute the sum, multiply the above equation by r to obtain

$$r.S = a.r + a.r^2 + a.r^3 + \dots + a.r^{n+1} \dots \infty$$

Subtract the second equation from the first to get

$$\begin{aligned} S - r.S &= a \\ \text{or, } (1 - r)S &= a \end{aligned}$$

which yields

$$S = \frac{a}{1-r}$$

In the example used for the derivation of the money multiplier, $a = 1$ and $r = 0.4$. Hence the value of the infinite series is

$$\frac{1}{1-0.4} = \frac{5}{3}$$

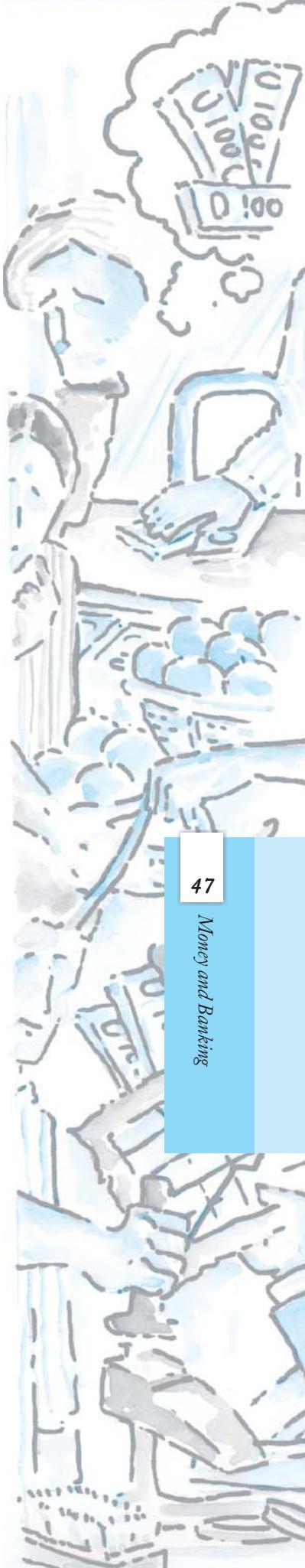
Money Supply in India

Table 3.5: Change in M1 and M3 Over Time

Year	M1	M3
1989-90	81,060	2,30,950
1990-91	92,892	2,65,828
1991-92	1,14,406	3,17,049
1992-93	1,24,066	3,64,016
1993-94	1,50,778	4,31,084
1994-95	1,92,257	5,27,496
1995-96	2,14,844	5,99,191
1996-97	2,40,615	6,96,012
1997-98	2,67,844	8,21,332
1998-99	3,09,128	9,81,020
1999-00	3,41,796	11,24,174
2000-01	3,79,450	13,13,220
2001-02	4,22,843	14,98,355
2002-03	4,72,827	17,25,222

Source: S. Sikdar, *Principles of Macroeconomics*, OUP, 2006. Unit: Rs crore.

The difference in values between the two columns is attributable to the time deposits held by commercial banks.



Changes in the Composition of the Sources of Monetary Base Over Time

Table 3.6: Sources of Changes in the Monetary Base

Year	Percentage Changes in		
	Loan to GOI	Loan to Banks	Foreign Assets
1984-90	105.50	13.60	7.60
1991-92	44.00	- 34.00	92.50
1992-93	38.80	32.72	33.30
1993-94	3.10	14.90	103.90
1994-95	7.10	26.30	76.10
1995-96	79.30	34.90	- 2.50
1996-97	50.10	- 275.40	366.90
1997-98	41.80	7.70	80.30
1998-99	52.40	30.80	66.60
1999-00	- 20.20	31.00	131.80
2000-01	24.70	- 25.50	137.50
2001-02	1.70	- 27.70	193.50

Source: S. Sikdar, *Principles of Macroeconomics*, OUP, 2006.

Note that RBI has been tightening domestic credit to Government of India and commercial banks as part of sterilisation exercise whenever the inflow of foreign assets to the Indian economy has been on the rise.

Income Determination

We have so far talked about the national income, price level, rate of interest etc. in an ad hoc manner – without investigating the forces that govern their values. The basic objective of macroeconomics is to develop theoretical tools, called models, capable of describing the processes which determine the values of these variables. Specifically, the models attempt to provide theoretical explanation to questions such as what causes periods of slow growth or recessions in the economy, or increment in the price level, or a rise in unemployment. It is difficult to account for all the variables at the same time. Thus, when we concentrate on the determination of a particular variable, we must hold the values of all other variables constant. This is a stylisation typical of almost any theoretical exercise and is called the assumption of *ceteris paribus*, which literally means ‘other things remaining equal’. You can think of the procedure as follows – in order to solve for the values of two variables x and y from two equations, we solve for one variable, say x , in terms of y from one equation first, and then substitute this value into the other equation to obtain the complete solution. We apply the same method in the analysis of the macroeconomic system.

4.1 EX ANTE AND EX POST

In the chapter on National Income Accounting, we have come across terms like consumption, investment, or the total output of final goods and services in an economy (GDP). These terms have dual connotations. In Chapter 2 they were used in the accounting sense – denoting actual values of these items as measured by the activities within the economy in a certain year. We call these actual or accounting values **ex post** measures of these items.

These terms, however, can be used with a different connotation. Consumption may denote not what people have actually consumed in a given year, but what they had planned to consume during the same period. Similarly, investment can mean the amount a producer plans to add to her inventory. It may be different from what she ends up doing. Suppose the producer plans to add Rs 100 worth goods to her stock by the end of the year. Her planned investment is, therefore, Rs 100 in that year. However, due to an unforeseen upsurge of demand for her goods in the market the volume of her sales exceeds what



she had planned to sell and, to meet this extra demand, she has to sell goods worth Rs 30 from her stock. Therefore, at the end of the year, her inventory goes up by Rs $(100 - 30) = \text{Rs } 70$ only. Her planned investment is Rs 100 whereas her actual, or ex post, investment is Rs 70 only. We call the planned values of the variables – consumption, investment or output of final goods – their **ex ante** measures.

In a theoretical model of the economy the **ex ante** values of these variables should be our primary concern. If anybody wants to predict what the equilibrium value of the final goods, output or GDP will be it is important for her to know what quantities of the final goods people plan to demand or supply. We must, therefore, learn about the determinants of the ex ante values of consumption, investment or aggregate output of the economy.

Ex Ante Consumption: What does planned consumption depend on? People spend a part of their income on consumption and save the rest. Suppose your income increases by Rs 100. You will not use up this entire extra income but save a certain fraction, say 20 per cent, of it to build up a cushion of savings for the period when you cease to earn income, or for meeting large expenses in future. Different people plan to save different fractions of their additional incomes (with the rich typically saving a greater proportion of their income than the poor), and if we average these we may arrive at a fraction which will give us an idea of what proportion of the total additional income of the economy people wish to save as a whole. We call this fraction the **marginal propensity to save (mps)**. It gives us the ratio of total additional planned savings in an economy to the total additional income of the economy. Since consumption is the complement of savings (additional income of the economy is either put into additional savings or used for extra consumption by the people), if we subtract the mps from 1, we get the **marginal propensity to consume (mpc)**, which, in a similar way, is the fraction of total additional income that people use for consumption. Suppose, mpc of an economy is c , where $0 < c < 1$. If the total income of the economy increases from 0 to Y , then total consumption of the economy should be

$$C = c(Y - 0) = c.Y$$

However, it is not precisely so. We have forgotten something here. If the income of the economy in a certain year is zero, the above equation tells us that the economy has to starve for an entire year, which is, obviously, an outrageous idea. If your income is zero in a certain period you use your past savings to buy certain minimum consumption items in order to survive. Hence we must add the minimum or subsistence level of consumption of the economy in the above equation, which, therefore, becomes

$$C = \bar{C} + c.Y \quad (4.1)$$

where $\bar{C} > 0$ is the minimum consumption level and is a given or exogenous item to our model, which, therefore, is treated as a constant. The equation tells us that as the income of the economy increases above zero, the economy uses c proportion of this extra income to increase its consumption above the minimum level.

Ex Ante Investment: Investment is defined as addition to the stock of physical capital (such as machines, buildings, roads etc., i.e. anything that adds to the future productive capacity of the economy) and changes in the inventory (or the stock of finished goods) of a producer. Note that ‘investment goods’ (such as machines) are also part of the final goods – they are not intermediate goods like

raw materials. Machines produced in an economy in a given year are not 'used up' to produce other goods but yield their services over a number of years.

Investment decisions by producers, such as whether to buy a new machine, depend, to a large extent, on the market rate of interest. However, for simplicity, we assume here that firms plan to invest the same amount every year. We can write the ex ante investment demand as

$$I = \bar{I} \quad (4.2)$$

where \bar{I} is a positive constant which represents the autonomous (given or exogenous) investment in the economy in a given year.

Ex Ante Aggregate Demand for Final Goods: In an economy without a government, the ex ante aggregate demand for final goods is the sum total of the ex ante consumption expenditure and ex ante investment expenditure on such goods, viz. $AD = C + I$. Substituting the values of C and I from equations (4.1) and (4.2), aggregate demand for final goods can be written as

$$AD = \bar{C} + \bar{I} + c.Y$$

If the final goods market is in equilibrium this can be written as

$$Y = \bar{C} + \bar{I} + c.Y$$

where Y is the ex ante, or planned, supply of final goods. This equation can be further simplified by adding up the two autonomous terms, \bar{C} and \bar{I} , making it

$$Y = \bar{A} + c.Y \quad (4.3)$$

where $\bar{A} = \bar{C} + \bar{I}$ is the total autonomous expenditure in the economy. In reality, these two components of autonomous expenditure behave in different ways. \bar{C} , representing subsistence consumption level of an economy, remains more or less stable over time. However, \bar{I} has been observed to undergo periodic fluctuations.

A word of caution is in order. The term Y on the left hand side of equation (4.3) represents the ex ante output or the planned supply of final goods. On the other hand, the expression on the right hand side denotes ex ante or planned aggregate demand for final goods in the economy. Ex ante supply is equal to ex ante demand only when the final goods market, and hence the economy, is in equilibrium. Equation (4.3) should not, therefore, be confused with the accounting identity of Chapter 2, which states that the ex post value of total output must always be equal to the sum total of ex post consumption and ex post investment in the economy. If ex ante demand for final goods falls short of the output of final goods that the producers have planned to produce in a given year, equation (4.3) will not hold. Stocks will be piling up in the warehouses which we may consider as *unintended accumulation of inventories*. It is not a part of planned or ex ante investment. However, it is definitely a part of the actual addition to inventories at the end of the year or, in other words, an ex post investment. Thus even though planned Y is greater than planned $C + I$, actual Y will be equal to actual $C + I$, with the extra output showing up as unintended accumulation of inventories in the ex post I on the right hand side of the accounting identity.

At this point, we can introduce a government in this economy. The major economic activities of the government that affect the aggregate demand for final goods and services can be summarized by the fiscal variables Tax (T) and Government Expenditure (G), both autonomous to our analysis. Government, through its expenditure G on final goods and services, adds to the aggregate

demand like other firms and households. On the other hand, taxes imposed by the government take a part of the income away from the household, whose disposable income, therefore, becomes $Y_d = Y - T$. Households spend only a fraction of this disposable income for consumption purpose. Hence, equation (4.3) has to be modified in the following way to incorporate the government

$$Y = \bar{C} + \bar{I} + G + c(Y - T)$$

Note that $G - c.T$, like \bar{C} or \bar{I} , just adds to the autonomous term \bar{A} . It does not significantly change the analysis in any qualitative way. We shall, for the sake of simplicity, ignore the government sector for the rest of this chapter. Observe also, that without the government imposing indirect taxes and subsidies, the total value of final goods and services produced in the economy, GDP, becomes identically equal to the National Income. Henceforth, throughout the rest of the chapter, we shall refer to Y as GDP or National Income interchangeably.

4.2 MOVEMENT ALONG A CURVE VERSUS SHIFT OF A CURVE

We shall be using graphical techniques to analyse the model of the economy. It is, therefore, important for us to learn how to read a graph. Let us now plot two variables a and b on the horizontal and vertical axes on a graph depicting the equation of a straight line of the form $b = ma + \epsilon$, where $m > 0$ is called the slope of the straight line and $\epsilon > 0$ is the intercept on the vertical (i.e. b) axis (Fig. 4.1). When a increases by 1 unit the value of b increases by m units. These are called movements of the variables *along the graph*.

Consider a fixed value for ϵ equal to 2. Let m take two values $m = 0.5$ and $m = 1$, respectively. Corresponding to these values of m we have two straight lines, one steeper than the other. The entities ϵ and m are called the parameters of the graph. They do not appear as variables on the axes, but act in the background to regulate the position of the graph. As m increases in the above example the straight line swings upwards. This is called a **parametric shift** of a graph.

Since a straight line of the above form has another parameter ϵ , we can observe another type of parametric shift of this line. To see this hold m constant at 0.5 and increase the intercept term ϵ from 2 to 3. The straight line now shifts in parallel upwards as shown in Fig. 4.2.

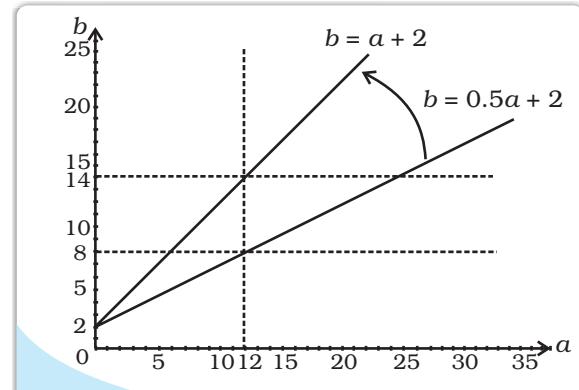


Fig. 4.1
A Positively Sloping Straight Line Swings Upwards as its Slope is Doubled

The entities ϵ and m are called the parameters of the graph. They do not appear as variables on the axes,

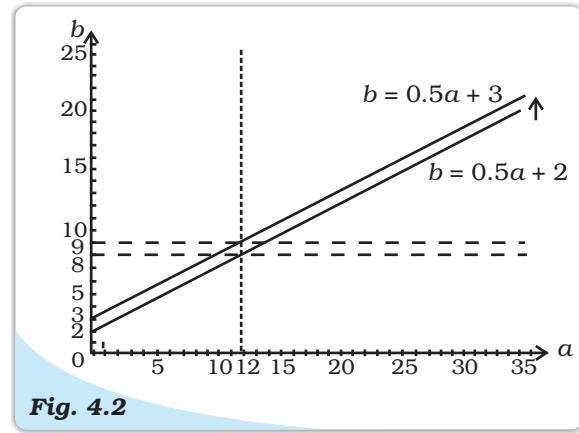


Fig. 4.2
A Positively Sloping Straight Line Shifts Upwards in Parallel as its Intercept is Increased

Consider, next, the following two equations representing a downward and an upward sloping straight line, respectively

$$y = z - x, \text{ and, } y = 1 + x, z \geq 0$$

In the first equation z appears as an intercept parameter. Hence for increasing values of z starting from zero, the first straight line will undergo parallel upward shifts as depicted in Fig. 4.3. Consequently, its points of intersection with the second straight line will move up along the second line as shown in Fig. 4.3.

Suppose we want to find out the relationship between z and equilibrium values of x . This can be obtained by plotting the points (x_1^*, z_1) , (x_2^*, z_2) , (x_3^*, z_3) etc. on a figure depicting the variables x and z on the horizontal and vertical axes, respectively, as shown in Fig. 4.4.

Note that in the (x, y) plane z was being treated as a parameter. But in the (x, z) plane z is a variable in its own right. What we have essentially done is the following – we have kept z constant while dealing with x and y in the second equation and solved for y in terms of x . Then we have plugged this solution in the first equation to derive the relationship between x and z . We shall be making use of this technique throughout this chapter.

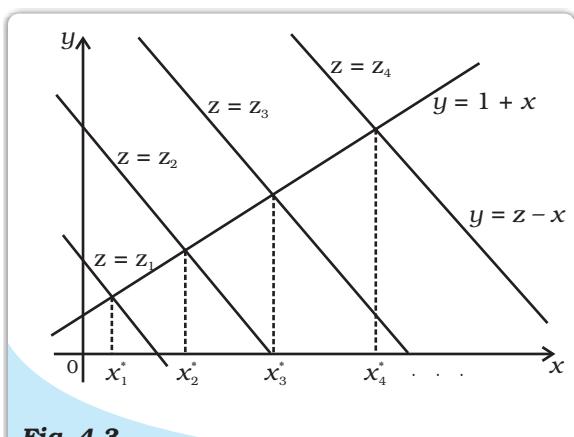


Fig. 4.3

Parametric Shift of z and Changing Equilibrium Values of x

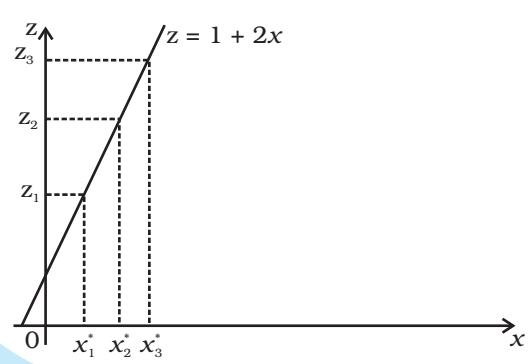


Fig. 4.4

Relationship between x and z

4.3 THE SHORT RUN FIXED PRICE ANALYSIS OF THE PRODUCT MARKET

We now turn to the derivation of aggregate demand under fixed price of final goods and constant rate of interest in the economy.

In order to hold price constant at any particular level, however, one must assume that the

suppliers are willing to supply whatever amount consumers will demand at that price. If quantity supplied is either in excess of or falls short of quantity demanded at this price, price will change because of excess supply or demand. To avoid this problem, we assume that the elasticity of supply is infinite – i.e., supply schedule is



How will the producer try to update his production plans in order to avoid excess supply or demand? Discuss this in the classroom.

horizontal – at the fixed price. Under such circumstances, equilibrium output will be solely determined by the aggregate amount of demand at this price in the economy. We call it **effective demand principle**.

Note also the word short run. We assume that prices in the economy take some time to respond to the forces of excess supply or demand. In the mean time, producers try to update their production plans in order to avoid excess supply or demand. For instance, if they face an excess supply in the current production cycle they will plan to produce less in the next cycle so as to avoid accumulation of stocks in their warehouses. Note also that an individual producer is very small compared to the size of the national market and, therefore, she cannot affect market price on her own. An individual producer has to accept the price that prevails in the market. The aggregate price level in the economy changes only when adjustments in all markets of the economy fail to eliminate the excess demand or supply. Prices are, therefore, assumed to vary only in the long run.

4.3.1 A Point on the Aggregate Demand Curve

At a fixed price, the value of ex ante aggregate demand for final goods, AD , is equal to the sum total of ex ante consumption expenditure and ex ante investment expenditure. Under the effective demand principle, the equilibrium output of the final goods is equal to ex ante aggregate demand, as represented by equation 4.3

$$Y = \bar{A} + c.Y$$

where \bar{A} is the total value of autonomous expenditure in the economy. Let us consider a numerical example to derive the value of the aggregate demand and hence equilibrium output in the economy at a fixed price. Suppose the values of the autonomous expenditures are $\bar{C} = 40$, $\bar{I} = 10$ and the value of mpc, $c = 0.8$. What will be the equilibrium value of Y ?

Consider $Y = 200$, as a trial solution. At this output, the value of the ex ante consumption expenditure is $C = \bar{C} + 0.8.Y = 40 + (0.8)200 = 200$, ex ante investment expenditure is $I = \bar{I} = 10$ and ex ante aggregate demand is $AD = C + I = 200 + 10 = 210$. At the level of output $Y = 200$ the value of ex ante aggregate demand is 210, which denotes a situation of excess demand. Clearly, $Y = 200$ is not the equilibrium level of output in the economy.

Consider, next, the output level $Y = 300$. Calculations similar to the above case shows that the value of ex ante aggregate demand will be

$$\bar{A} + cY = \bar{C} + \bar{I} + cY = 50 + (0.8)300 = 290.$$

The ex ante aggregate demand falls short of the output and there is excess supply. Hence, $Y = 300$ is also not the equilibrium level of output in the economy.

Finally, consider $Y = 250$. At this output, $AD = 50 + (0.8)250 = 250$. We have ultimately hit the correct value of Y , at which aggregate demand equals aggregate supply. $Y = 250$ is, therefore, the equilibrium output of the economy at the fixed price-interest rate combination.

4.3.2 Effects of an Autonomous Change on Equilibrium Demand in the Product Market

What are the determinants of the equilibrium value of aggregate demand at fixed price? In other words, what governs whether the equilibrium aggregate demand would be 250 or 210 or 290 in the above example? The equilibrium output and aggregate demand at the fixed price-interest rate is derived by solving

the equation $Y = AD = \bar{A} + cY$. It is an equation involving only one variable, Y . The solution of the equation is

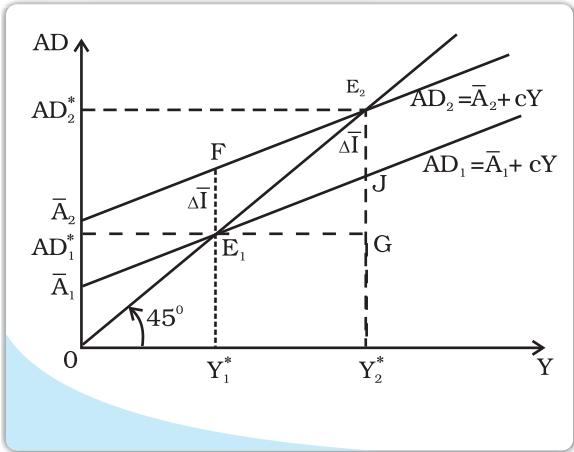
$$Y = \frac{\bar{A}}{1 - c} \quad (4.4)$$

The value of Y will, therefore, depend on the values of the parameters on the right hand side, which are \bar{A} and c in this case. In the above example, the equilibrium value of aggregate demand, 250, and hence the position of the single point on the aggregate demand schedule that we have derived so far, will depend on the values of these parameters. Compare the equation $AD = \bar{A} + cY$ with the equation of a straight line of the standard form: $b = \varepsilon + ma$, as discussed in section 4.2. \bar{A} is the intercept parameter and c is the slope parameter of this equation. When c increases, the straight line representing the equation of aggregate demand will swing upwards. On the other hand, as \bar{A} increases, the straight line will shift in parallel upwards. However, \bar{A} is only a composite term, representing the sum of \bar{C} and \bar{I} , which are, therefore, the truly shifted parameters of the AD line. Suppose \bar{I} increases from 10 to 20. What will happen to equilibrium output and aggregate demand?

Figure 4.5 above depicts the situation. The lines AD_1 and AD_2 correspond to the two values of \bar{A} , viz. \bar{A}_1 and \bar{A}_2 , respectively. These values differ by $\Delta\bar{I} = 10$, the increment in the autonomous investment. Slope of the AD lines is $0 < c < 1$ and their intercepts on the vertical axis are \bar{A}_1 and \bar{A}_2 , respectively. Note that, AD lines are flatter than the 45° line since the slope of the latter line is equal to 1 ($\tan 45^\circ = 1$). The 45° line represents points at which aggregate demand and output are equal. Thus, when the level of autonomous expenditure in the economy is A_1 , the AD_1 line intersects the 45° line at E_1 , which is, therefore, the equilibrium point. The equilibrium values of output and aggregate demand are Y_1^* and AD_1^* ($= 250$), respectively.

When autonomous investment increases, the AD_1 line shifts in parallel upwards and assumes the position AD_2 . The value of aggregate demand at output Y_1^* is Y_1^*F , which is greater than the value of output $0Y_1^* = Y_1^*E_1$ by an amount E_1F . E_1F measures the amount of excess demand that emerges in the economy as a result of the increase in autonomous expenditure. Thus, E_1 no longer represents the equilibrium. To find the new equilibrium in the final goods market we must look for the point where the new aggregate demand line, AD_2 , intersects the 45° line. That occurs at point E_2 , which is, therefore, the new equilibrium point. The new equilibrium values of output and aggregate demand are Y_2^* and AD_2^* , respectively.

Note that in the new equilibrium, output and aggregate demand have increased by an amount $E_1G = E_2G$, which is greater than the initial increment in autonomous expenditure, $\Delta\bar{I} = E_1F = E_2J$. Thus an initial increment in the



Equilibrium Output and Aggregate Demand in the Fixed Price Model

autonomous expenditure seems to have a spill-over effect on the equilibrium values of aggregate demand and output. What causes aggregate demand and output to increase by an amount larger than the size of the initial increment in autonomous expenditure? We discuss it in section 4.3.3.

4.3.3 The Multiplier Mechanism

Clearly, 250 is no longer the equilibrium value of output or aggregate demand. With $\bar{I} = 20$, aggregate demand in the economy will be equal to $40 + 20 + (0.8) 250 = 260$ from equation (4.4), which is greater than the output $Y = 250$ by the amount of the increment in the autonomous investment ($\Delta \bar{I} = 10$). There is excess demand in the economy and producers will have to run down their inventory to meet this extra demand. Thus, in the next production cycle, they revise their production plan upwards, i.e. increase the value of their planned supply of output by 10 to restore equilibrium in the final goods market.

In the absence of a government imposing indirect taxes or disbursing subsidies, the value of the total output of final goods or GDP is equal to National Income. The production of final goods employs factors such as labour, capital, land and entrepreneurship. In the absence of indirect taxes or subsidies, the total value of the final goods output is disbursed among different factors of production – wages to labour, interest to capital, rent to land etc. Whatever is left over is appropriated by the entrepreneur and is called profit. Thus the sum total of aggregate factor payments in the economy, National Income, is equal to the aggregate value of the output of final goods, GDP. In the above example the value of the extra output, 10, is distributed among various factors as factor payments and hence the income of the economy goes up by 10. When income increases by 10, consumption expenditure goes up by $(0.8)10$, since people spend 0.8 (= mpc) fraction of their additional income on consumption. Hence, in the next round, aggregate demand in the economy goes up by $(0.8)10$ and there again emerges an excess demand equal to $(0.8)10$. Therefore, in the next production cycle, producers increase their planned output further by $(0.8)10$ to restore equilibrium. When this extra output is distributed among factors, the income of the economy goes up by $(0.8)10$ and consumption demand increases further by $(0.8)^210$, once again creating excess demand of the same amount. This process goes on, round after round, with producers increasing their output to clear the excess demand in each round and consumers spending a part of their additional income from this extra production on consumption items – thereby creating further excess demand in the next round.

Let us register the changes in the values of aggregate demand and output at each round in Table 4.1.

Table 4.1: The Multiplier Mechanism in the Final Goods Market

	Consumption	Aggregate Demand	Output/Income
Round 1	0	10 (Autonomous Increment)	10
Round 2	$(0.8)10$	$(0.8)10$	$(0.8)10$
Round 3	$(0.8)^210$	$(0.8)^210$	$(0.8)^210$
Round 4	$(0.8)^310$	$(0.8)^310$	$(0.8)^310$
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	etc.

The last column measures the increments in the value of the output of final goods (and hence the income of the economy) in each round. The second and third columns measure the increments in total consumption expenditure in the economy and increments in the value of aggregate demand in a similar way. Note that the increments in final goods output in successive rounds are gradually diminishing. After a large number of rounds, therefore, the size of the increments will be virtually indistinguishable from zero and subsequent round effects will not practically contribute anything in the total volume of output. We say that the round effects on final goods output represent a convergent process. In order to find out the total increase in output of the final goods, we must add up the infinite geometric series in the last column, i.e.

$$10 + (0.8)10 + (0.8)^2 10 + \dots \dots \infty \\ = 10 \{1 + (0.8) + (0.8)^2 + \dots \dots \infty\} = \frac{10}{1-0.8} = 50$$

The increment in equilibrium value of total output thus exceeds the initial increment in autonomous expenditure. The ratio of the total increment in equilibrium value of final goods output to the initial increment in autonomous expenditure is called the **output multiplier** of the economy. Recalling that 10 and 0.8 represent the values of $\Delta \bar{I} = \Delta \bar{A}$ and mpc, respectively, the expression for the multiplier can be written as

$$\text{The output multiplier} = \frac{\Delta Y}{\Delta \bar{A}} = \frac{1}{1-c} \quad (4.5)$$

where ΔY is the total increment in final goods output and $c = \text{mpc}$. Observe that the size of the multiplier depends on the value of c . As c becomes larger the multiplier increases.

Referring back to our example, an increment in autonomous expenditure by 10 increases total output and aggregate demand in the economy by 50. The value of the multiplier is 5. To cross check our calculation, let us compute the value of aggregate demand and output at the new equilibrium with $\bar{I} = 20$. From equation (4.4) the value of output in the new equilibrium will be equal to

$$Y_2^* = \frac{40 + 20}{1-0.8} = 300$$

This shows that our computation of the multiplier is indeed correct.

We shall conclude the fixed price-interest rate analysis of the final goods market with an interesting counter-intuitive fact – or a ‘paradox’. If all the people of the economy increase the proportion of income they save (i.e. if the mps of the economy increases) the total value of savings in the economy will not increase – it will either decline or remain unchanged. This result is known as the **Paradox of Thrift** – which states that as people become more thrifty they end up saving less or same as before. This result, though sounds apparently impossible, is actually a simple application of the model we have learnt.

Let us continue with the example. Suppose at the initial equilibrium of $Y = 250$, there is an exogenous or autonomous shift in peoples’ expenditure pattern – they suddenly become more thrifty. This may happen due to a new information regarding an imminent war or some other impending disaster, which makes people more circumspect and conservative about their expenditures. Hence the mps of the economy increases, or, alternatively, the mpc decreases from 0.8 to 0.5. At the initial income level of $AD_1^* = Y_1^* = 250$, this sudden decline in mpc will imply a decrease in aggregate consumption

spending and hence in aggregate demand, $AD = \bar{A} + cY$, by an amount equal to $(0.8 - 0.5) 250 = 75$. This can be regarded as an autonomous reduction in consumption expenditure, to the extent that the change in mpc is occurring from some exogenous cause and is not a consequence of changes in the variables of the model. But as aggregate demand decreases by 75, it falls short of the output $Y_1^* = 250$ and there emerges an excess supply equal to 75 in the economy. Stocks are piling up in warehouses and producers decide to cut the value of production by 75 in the next round to restore equilibrium in the market. But that would mean a reduction in factor payments in the next round and hence a reduction in income by 75. As income decreases people reduce consumption proportionately but, this time, according to the new value of mpc which is 0.5. Consumption expenditure, and hence aggregate demand, decreases by $(0.5)75$, which creates again an excess supply in the market. In the next round, therefore, producers reduce output further by $(0.5)75$. Income of the people decreases accordingly and consumption expenditure and aggregate demand goes down again by $(0.5)^2 75$. The process goes on. However, as can be inferred from the dwindling values of the successive round effects, the process is convergent. What is the total decrease in the value of output and aggregate demand? Add up the infinite series $75 + (0.5) 75 + (0.5)^2 75 + \dots \infty$ and the total reduction in output turns out to be

$$\frac{75}{1-0.5} = 150$$

But that means the new equilibrium output of the economy is only $Y_2^* = 100$. People are now saving $S_2^* = Y_2^* - C_2^* = Y_2^* - (\bar{C} + c_2 \cdot Y_2^*) = 100 - (40 + 0.5 \times 100) = 10$ in aggregate, whereas under the previous equilibrium they were saving $S_1^* = Y_1^* - C_1^* = Y_1^* - (\bar{C} + c_1 \cdot Y_1^*) = 250 - (40 + 0.8 \times 250) = 10$ at the previous mpc, $c_1 = 0.8$. Total value of savings in the economy has, therefore, remained unchanged.

In section 4.3.2, we had talked about two types of parametric changes in the position of the AD line. When \bar{A} changes the line shifts upwards or downwards in parallel. When c changes, however, the line swings up or down. An increase in mps, or a decline in mpc, reduces the slope of the AD line and it swings downwards. We depict the situation in Fig. 4.6.

At the initial values of the parameters, $\bar{A} = 50$ and $c = 0.8$, the equilibrium value of the output and aggregate demand from equation (4.4) was

$$Y_1^* = \frac{50}{1-0.8} = 250$$

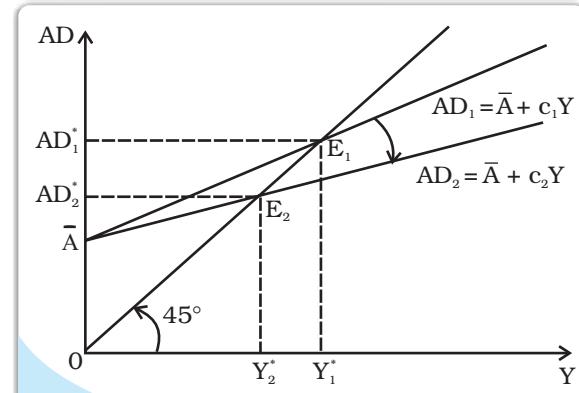


Fig. 4.6

Paradox of Thrift – Downward Swing of AD Line

Under the changed value of the parameter $c = 0.5$, the new equilibrium value of output and aggregate demand is

$$Y_2^* = \frac{50}{1 - 0.5} = 100$$

The equilibrium output and aggregate demand have declined by 150. As explained above, this, in turn, implies that there is no change in the total value of savings.

When, at a particular price level, aggregate demand for final goods equals aggregate supply of final goods, the final goods or product market reaches its equilibrium. Aggregate demand for final goods consists of ex ante consumption, ex ante investment, government spending etc. The rate of increase in ex ante consumption due to a unit increment in income is called marginal propensity to consume. For simplicity we assume a constant final goods price and constant rate of interest over short run to determine the level of aggregate demand for final goods in the economy. We also assume that the aggregate supply is perfectly elastic at this price. Under such circumstances, aggregate output is determined solely by the level of aggregate demand. This is known as effective demand principle. An increase (decrease) in autonomous spending causes aggregate output of final goods to increase (decrease) by a larger amount through the multiplier process.

Aggregate demand

Equilibrium

Ex post

Marginal propensity to consume

Unintended changes in inventories

Parametric shift

Paradox of thrift

Aggregate supply

Ex ante

Ex ante consumption

Ex ante investment

Autonomous change

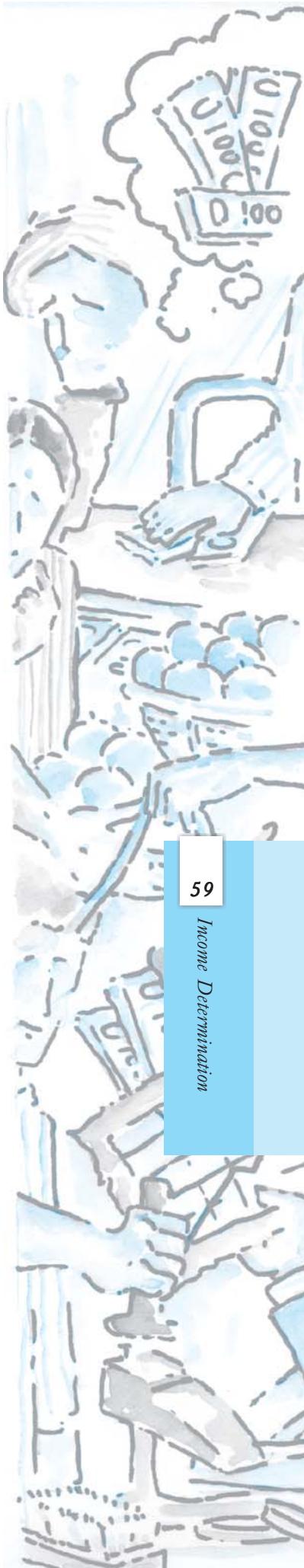
Effective demand principle

Autonomous expenditure multiplier

- What is marginal propensity to consume? How is it related to marginal propensity to save?
- What is the difference between ex ante investment and ex post investment?
- What do you understand by 'parametric shift of a line'? How does a line shift when its (i) slope decreases, and (ii) its intercept increases?
- What is 'effective demand'? How will you derive the autonomous expenditure multiplier when price of final goods and the rate of interest are given?
- Measure the level of ex-ante aggregate demand when autonomous investment and consumption expenditure (A) is Rs 50 crores, and MPS is 0.2 and level of income (Y) is Rs 4000 crores. State whether the economy is in equilibrium or not (cite reasons).
- Explain 'Paradox of Thrift'.

Suggested Readings

- Dornbusch, R. and S. Fischer. 1990. *Macroeconomics*, (fifth edition) pages 63 – 105, McGraw Hill, Paris.



Chapter 5



The Government: Functions and Scope

In a mixed economy, apart from the private sector, there is the government which plays a very important role. In this chapter, we shall not deal with the myriad ways in which it influences economic life but limit ourselves to three distinct functions that operate through the revenue and expenditure measures of the government budget.

First, certain goods, referred to as **public goods** (such as national defence, roads, government administration), as distinct from **private goods** (like clothes, cars, food items), cannot be provided through the market mechanism, i.e. by transactions between individual consumers and producers and must be provided by the government. This is the **allocation function**.

Second, through its tax and expenditure policy, the government attempts to bring about a distribution of income that is considered 'fair' by society. The government affects the personal disposable income of households by making transfer payments and collecting taxes and, therefore, can alter the income distribution. This is the **distribution function**.

Third, the economy tends to be subject to substantial fluctuations and may suffer from prolonged periods of unemployment or inflation. The overall level of employment and prices in the economy depends upon the level of aggregate demand which is a function of the spending decisions of millions of private economic agents apart from the government. These decisions, in turn, depend on many factors such as income and credit availability. In any period, the level of expenditures may not be sufficient for full utilisation of labour and other resources of the economy. Since wages and prices are generally rigid downwards (they do not fall below a level), employment cannot be restored automatically. Hence, policy measures are needed to raise aggregate demand. On the other hand, there may be times when expenditures exceed the available output under conditions of high employment and thus may cause inflation. In such situations, restrictive conditions are needed to reduce demand. These constitute the **stabilisation** requirements of the domestic economy.

To understand the need for governmental provision of public goods, we must consider what distinguishes them from private goods. There are two major differences. One, the benefits of public goods are not limited to one particular consumer, as in the case of private goods, but become available to all. For instance, if a

person consumes a chocolate or wears a shirt, these will not be available to other individuals. This person's consumption stands in a rival relationship to the consumption of others. However, if we consider a public park or measures to reduce air pollution, the benefits will be available to all. The consumption of such products by several individuals is not 'rivalrous' in the sense that a person can enjoy the benefits without reducing their availability to others. Two, in case of private goods anyone who does not pay for the good can be excluded from enjoying its benefits. If you do not buy a ticket, you are excluded from watching a film at a local theatre. However, in case of public goods, there is no feasible way of excluding anyone from enjoying the benefits of the good (they are non-excludable). Since non-paying users usually cannot be excluded, it becomes difficult or impossible to collect fees for the public good. This is what is called the 'free-rider' problem. Consumers will not voluntarily pay for what they can get for free and for which there is no exclusive title to the property being enjoyed. The link between the producer and the consumer is broken and the government must step in to provide for such goods. Public provision, however, is not the same as public production. **Public provision** means that they are financed through the budget and made available free of any direct payment. These goods may be produced directly under government management or by the private sector.

The chapter proceeds as follows. In section 5.1, we present the components of the government budget to bring out the sources of government revenue and the avenues of government spending. In section 5.2, we discuss the issue of government deficit, when expenditures exceed revenue collection. Section 5.3 deals with fiscal policy and the multiplier process within the income expenditure approach described earlier. Government borrowing to cover deficits leads to debt accumulation – what the government owes. The chapter concludes with an analysis of the debt issue.

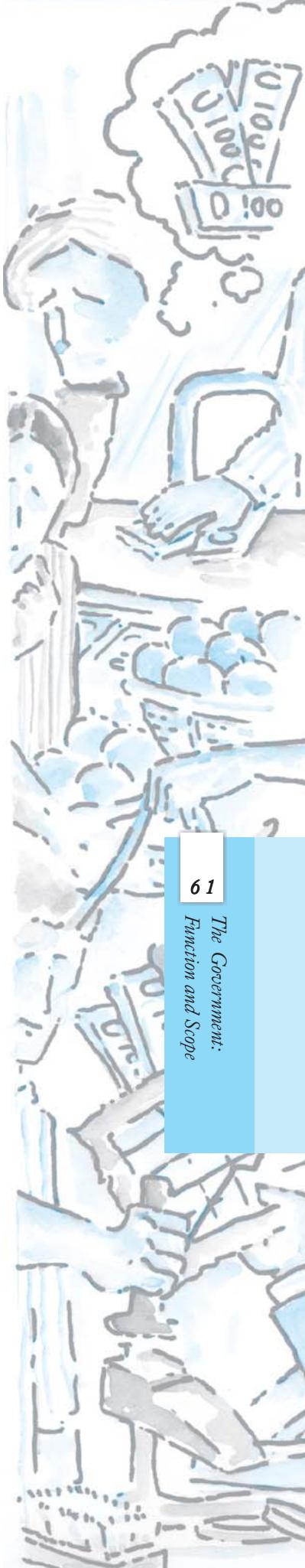
5.1 COMPONENTS OF THE GOVERNMENT BUDGET

There is a constitutional requirement in India (Article 112) to present before the Parliament a statement of estimated receipts and expenditures of the government in respect of every financial year which runs from 1 April to 31 March. This 'Annual Financial Statement' constitutes the main budget document. Further, the budget must distinguish expenditure on the revenue account from other expenditures. Therefore, the budget comprises of the (a) Revenue Budget and the (b) Capital Budget (Refer Chart 1).

5.1.1 The Revenue Account

The Revenue Budget shows the current receipts of the government and the expenditure that can be met from these receipts.

Revenue Receipts: Revenue receipts are divided into tax and non-tax revenues. Tax revenues consist of the proceeds of taxes and other duties levied by the central government. Tax revenues, an important component of revenue receipts, comprise of direct taxes – which fall directly on individuals (personal income tax) and firms (corporation tax), and indirect taxes like excise taxes (duties levied on goods produced within the country), customs duties (taxes imposed on goods imported into and exported out of India) and service tax. Excise taxes are the single largest revenue earner contributing 35.7 per cent of total tax revenue in 2003-04. Other direct taxes like wealth tax, gift tax and estate



duty (now abolished) have never been of much significance in terms of revenue yield and have thus been referred to as 'paper taxes'. Two new taxes—the fringe benefits tax (on those benefits enjoyed collectively by the employees) and on cash withdrawals from banks over a certain threshold in a day—were introduced in the budget for 2005-06. The share of direct taxes in gross tax revenue has increased from 19.1 per cent in 1990-91 to 41.3 per cent in 2003-04. There has been a reduction in the share of indirect tax revenue, falling from 78.4 per cent in 1990-91 to 57.9 per cent in 2003-04.

The redistribution objective is sought to be achieved through progressive income taxation, in which higher the income, higher is the tax rate. Firms are taxed on a proportional basis, where the tax rate is a particular proportion of profits. With respect to excise taxes, necessities of life are exempted or taxed at low rates, comforts and semi-luxuries are moderately taxed, and luxuries, tobacco and petroleum products are taxed heavily.

Non-tax revenue of the central government mainly consists of interest receipts (on account of loans by the central government which constitutes the single largest item of non-tax revenue), dividends and profits on investments made by the government, fees and other receipts for services rendered by the government. Cash grants-in-aid from foreign countries and international organisations are also included.

The estimates of revenue receipts take into account the effects of tax proposals made in the Finance Bill¹.

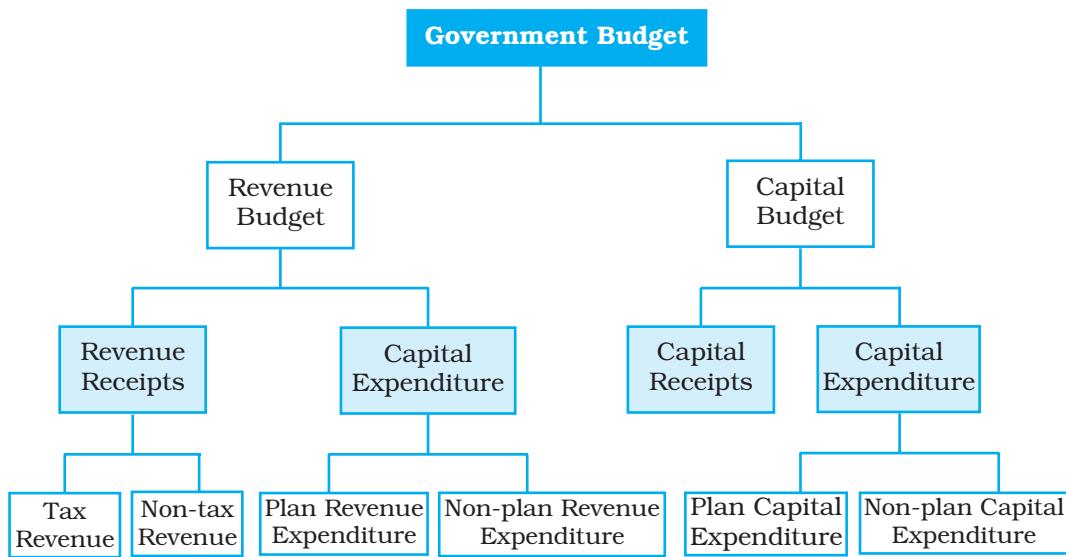


Chart 1: The Components of the Government Budget

Revenue Expenditure: Broadly speaking, revenue expenditure consists of all those expenditures of the government which do not result in creation of physical or financial assets. It relates to those expenses incurred for the normal functioning of the government departments and various services, interest payments on debt incurred by the government, and grants given to state governments and other parties (even though some of the grants may be meant for creation of assets).

¹A Finance Bill, presented along with the Annual Financial Statement, provides details of the imposition, abolition, remission, alteration or regulation of taxes proposed in the Budget.

Budget documents classify total revenue expenditure into **plan and non-plan expenditure**. Plan revenue expenditure relates to central Plans (the Five-Year Plans) and central assistance for State and Union Territory Plans. Non-plan expenditure, the more important component of revenue expenditure, covers a vast range of general, economic and social services of the government. The main items of non-plan expenditure are interest payments, defence services, subsidies, salaries and pensions.

Interest payments on market loans, external loans and from various reserve funds constitute the single largest component of non-plan revenue expenditure. They used up 41.5 per cent of revenue receipts in 2004-05. Defence expenditure, the second largest component of non-plan expenditure, is committed expenditure in the sense that given the national security concerns, there exists little scope for drastic reduction. Subsidies are an important policy instrument which aim at increasing welfare. Apart from providing implicit subsidies through under-pricing of public goods and services like education and health, the government also extends subsidies explicitly on items such as exports, interest on loans, food and fertilisers. The amount of subsidies as a per cent of GDP has been falling from 1.7 per cent in 1990-91 to 1.66 per cent in 2002-03 to 1.45 per cent in 2004-05.

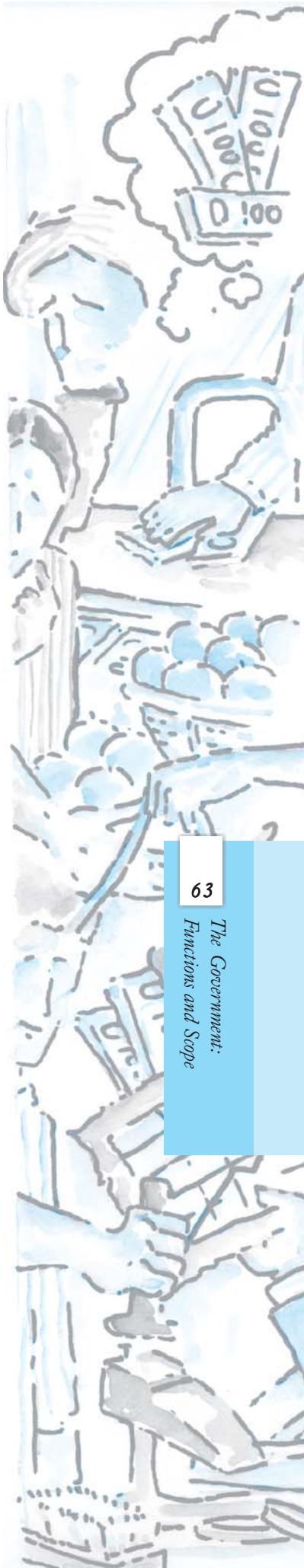
5.1.2 The Capital Account

The Capital Budget is an account of the assets as well as liabilities of the central government, which takes into consideration changes in capital. It consists of capital receipts and capital expenditure of the government. This shows the capital requirements of the government and the pattern of their financing.

Capital Receipts: The main items of capital receipts are loans raised by the government from the public which are called market borrowings, borrowing by the government from the Reserve Bank and commercial banks and other financial institutions through the sale of treasury bills, loans received from foreign governments and international organisations, and recoveries of loans granted by the central government. Other items include small savings (Post-Office Savings Accounts, National Savings Certificates, etc), provident funds and net receipts obtained from the sale of shares in Public Sector Undertakings (PSUs).

Capital Expenditure: This includes expenditure on the acquisition of land, building, machinery, equipment, investment in shares, and loans and advances by the central government to state and union territory governments, PSUs and other parties. Capital expenditure is also categorised as plan and non-plan in the budget documents. Plan capital expenditure, like its revenue counterpart, relates to central plan and central assistance for state and union territory plans. Non-plan capital expenditure covers various general, social and economic services provided by the government.

The budget is not merely a statement of receipts and expenditures. Since Independence, with the launching of the Five-Year Plans, it has also become a significant national policy statement. The budget, it has been argued, reflects and shapes, and is, in turn, shaped by the country's economic life. Along with the budget, three policy statements are mandated by the Fiscal Responsibility and Budget Management Act, 2003 (FRBMA). The Medium-term Fiscal Policy Statement sets a three-year rolling target for specific fiscal indicators and examines whether revenue expenditure can be financed through revenue receipts on a sustainable basis and how productively capital receipts including market



borrowings are being utilised. The Fiscal Policy Strategy Statement sets the priorities of the government in the fiscal area, examining current policies and justifying any deviation in important fiscal measures. The Macroeconomic Framework Statement assesses the prospects of the economy with respect to the GDP growth rate, fiscal balance of the central government and external balance².

5.1.3 Measures of Government Deficit

When a government spends more than it collects by way of revenue, it incurs a budget deficit³. There are various measures that capture government deficit and they have their own implications for the economy.

Revenue Deficit: The revenue deficit refers to the excess of government's revenue expenditure over revenue receipts

$$\text{Revenue deficit} = \text{Revenue expenditure} - \text{Revenue receipts}$$

The revenue deficit includes only such transactions that affect the current income and expenditure of the government. When the government incurs a revenue deficit, it implies that the government is dissaving and is using up the savings of the other sectors of the economy to finance a part of its consumption expenditure. This situation means that the government will have to borrow not only to finance its investment but also its consumption requirements. This will lead to a build up of stock of debt and interest liabilities and force the government, eventually, to cut expenditure. Since a major part of revenue expenditure is committed expenditure, it cannot be reduced. Often the government reduces productive capital expenditure or welfare expenditure. This would mean lower growth and adverse welfare implications.

Fiscal Deficit: Fiscal deficit is the difference between the government's total expenditure and its total receipts excluding borrowing

$$\text{Gross fiscal deficit} = \text{Total expenditure} - (\text{Revenue receipts} + \text{Non-debt creating capital receipts})$$

Non-debt creating capital receipts are those receipts which are not borrowings and, therefore, do not give rise to debt. Examples are recovery of loans and the proceeds from the sale of PSUs. The fiscal deficit will have to be financed through borrowing. Thus, it indicates the total borrowing requirements of the government from all sources. From the financing side

$$\text{Gross fiscal deficit} = \text{Net borrowing at home} + \text{Borrowing from RBI} + \text{Borrowing from abroad}$$

Net borrowing at home includes that directly borrowed from the public through debt instruments (for example, the various small savings schemes) and indirectly from commercial banks through Statutory Liquidity Ratio (SLR). The fiscal deficit of the central government, after declining from 6.6 per cent of GDP in 1990-91 to 4.1 per cent in 1996-97 rose to 6.2 per cent

²The 2005-06 Indian Budget introduced a statement highlighting the gender sensitivities of the budgetary allocations. Gender budgeting is an exercise to translate the stated gender commitments of the government into budgetary commitments, involving special initiatives for empowering women and examination of the utilisation of resources allocated for women and the impact of public expenditure and policies of the government on women. The 2006-07 budget enlarged the earlier statement.

³More formally, it refers to the excess of total expenditure (both revenue and capital) over total receipts (both revenue and capital). From the 1997-98 budget, the practice of showing budget deficit has been discontinued in India.

in 2001-02 (Table 5.1). Under the constraint imposed by the FRBMA, the fiscal deficit as well as the revenue deficit have fallen to 4.1 per cent and 2.5 per cent respectively in 2004-05 (provisional figures). The increasing share of the revenue deficit as a proportion of the fiscal deficit (which was 49.4 per cent in 1990-91 but has increased to 79.7 in 2003-04) indicates the rapid decline in the quality of the deficit.

Table 5.1: Receipts and Expenditures of the Central Government

(As per cent of GDP)	1990 -91	2000 -01	2001 -02	2002 -03	2003 -04
1. Revenue Receipts(a+b)	9.7	9.1	8.8	9.4	9.6
(a) Tax revenue(net of states' share)	7.6	6.5	5.9	6.5	6.8
(b) Non-tax revenue	2.1	2.7	3.0	3.0	2.8
2. Revenue Expenditure	12.9	13.2	13.2	13.8	13.1
(a) Interest payments	3.8	4.7	4.7	4.8	4.5
(b) Major subsidies	1.7	1.2	1.3	1.7	1.6
(c) Defence expenditure	1.9	1.8	1.7	1.7	1.6
3. Revenue Deficit(2-1)	3.3	4.0	4.4	4.4	3.6
4. Capital Receipts(a+b+c)	5.6	6.3	7.1	7.4	7.5
(a) Recovery of loans	1.0	0.6	0.7	1.4	2.4
(b) Other receipts(mainly PSU disinvestment)	0.0	0.1	0.2	0.1	0.6
(c) Borrowings and other liabilities	4.6	5.6	6.2	5.9	4.5
5. Capital Expenditure	4.4	2.3	2.7	3.0	4.0
6. Total Expenditure [(2+5=6(a)+6(b))]	17.3	15.4	15.9	16.9	17.1
(a) Plan expenditure	5.0	3.9	4.4	4.6	4.4
(b) Non-plan expenditure	12.3	11.5	11.4	12.3	12.6
7. Fiscal Deficit [6-1-4(a)-4(b)]	6.6	5.6	6.2	5.9	4.5
8. Primary Deficit [7-2(a)]	2.8	0.9	1.5	1.1	0.0

Source: Economic Survey, 2005-06

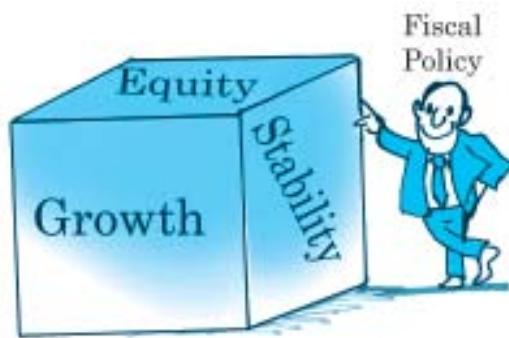
Primary Deficit: We must note that the borrowing requirement of the government includes interest obligations on accumulated debt. To obtain an estimate of borrowing on account of current expenditures exceeding revenues, we need to calculate what has been called the primary deficit. It is simply the fiscal deficit minus the interest payments

$$\text{Gross primary deficit} = \text{Gross fiscal deficit} - \text{net interest liabilities}$$

Net interest liabilities consist of interest payments minus interest receipts by the government on net domestic lending.

5.2 FISCAL POLICY

One of Keynes's main ideas in *The General Theory of Employment, Interest and Money* was that government fiscal policy should be used to stabilise the level of output and employment. Through changes in its expenditure and taxes, the government attempts to increase output and income and seeks to stabilise the ups and downs in the economy. In the process, fiscal policy creates a *surplus* (when total receipts exceed expenditure) or a *deficit budget* (when total



How does the Fiscal Policy try to achieve its three basic objectives?

expenditure exceed receipts) rather than a *balanced budget* (when expenditure equals receipts). In what follows, we study the effects of introducing the government sector in our earlier analysis of the determination of income.

The government directly affects the level of equilibrium income in two specific ways – government purchases of goods and services (G) increase aggregate demand and taxes, and transfers affect the relation between

income (Y) and disposable income (YD) – the income available for consumption and saving with the households.

We take taxes first. We assume that the government imposes taxes that do not depend on income, called **lump-sum taxes** equal to T . We assume throughout the analysis that government makes a constant amount of transfers, $\bar{T}R$. The consumption function is now

$$C = \bar{C} + cYD = \bar{C} + c(Y - T + \bar{T}R) \quad (5.1)$$

where YD = disposable income.

We note that taxes lower disposable income and consumption. For instance, if one earns Rs 1 lakh and has to pay Rs 10,000 in taxes, she has the same disposable income as someone who earns Rs 90,000 but pays no taxes. The definition of aggregate demand augmented to include the government will be

$$AD = \bar{C} + c(Y - T + \bar{T}R) + I + G \quad (5.2)$$

Graphically, we find that the lump-sum tax shifts the consumption schedule downward in a parallel way and hence the aggregate demand curve shifts in a similar fashion. The income determination condition in the product market will be $Y = AD$, which can be written as

$$Y = \bar{C} + c(Y - T + \bar{T}R) + I + G \quad (5.3)$$

Solving for the equilibrium level of income, we get

$$Y^* = \frac{1}{1-c} (\bar{C} - cT + c\bar{T}R + I + G) \quad (5.4)$$

5.2.1 Changes in Government Expenditure

We consider the effects of increasing government purchases (G) keeping taxes constant. When G exceeds T , the government runs a deficit. Because G is a component of aggregate spending, planned aggregate expenditure will increase. The aggregate demand schedule shifts up to AD' . At the initial level of output, demand exceeds supply and firms expand production. The new equilibrium is at E' . The multiplier mechanism (described in Chapter 4) is in operation. The government spending multiplier is given by

$$\Delta Y = \frac{1}{1-c} \Delta G \quad (5.5)$$

or

$$\frac{\Delta Y}{\Delta G} = \frac{1}{1-c} \quad (5.6)$$

In Fig. 5.1, government expenditure increases from G to G' and causes equilibrium income to increase from Y^* to Y'^* .

5.2.2 Changes in Taxes

We find that a cut in taxes increases disposable income ($Y - T$) at each level of income. This shifts the aggregate expenditure schedule upwards by a fraction c of the decrease in taxes. This is shown in Fig 5.2.

From equation 5.3, we have

$$\Delta Y^* = \frac{1}{1-c} (-c) \Delta T \quad (5.7)$$

The tax multiplier

$$= \frac{\Delta Y}{\Delta T} = \frac{-c}{1-c} \quad (5.8)$$

Because a tax cut (increase) will cause an increase (reduction) in consumption and output, the tax multiplier is a negative multiplier. Comparing equation (5.6) and (5.8), we find that the tax multiplier is smaller in absolute value compared to the government spending multiplier. This is because an increase in government spending directly affects total spending whereas taxes enter the multiplier process through their impact on disposable income, which influences household consumption (which is a part of total spending). Thus, with a ΔT reduction in taxes, consumption, and hence total spending, increases in the first instance by $c\Delta T$. To understand how the two multipliers differ, we consider the following example.



Why is the poor man crying? Suggest measures to wipe off his tears.

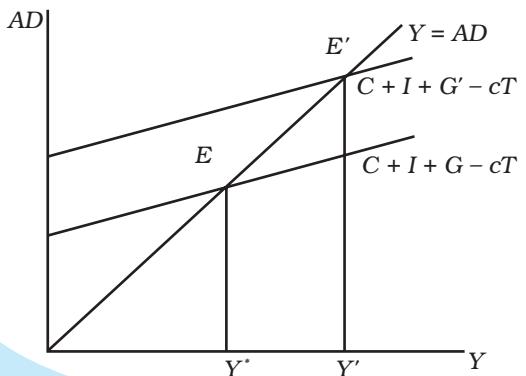


Fig. 5.1

Effect of Higher Government Expenditure

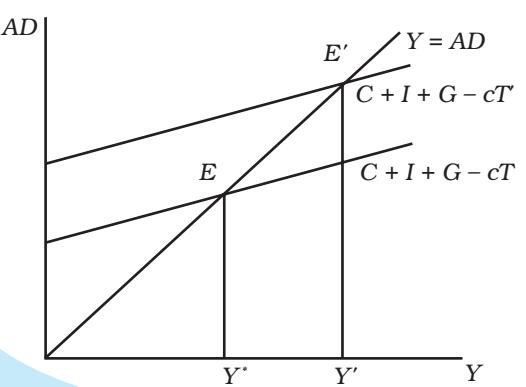


Fig. 5.2

Effect of a Reduction in Taxes

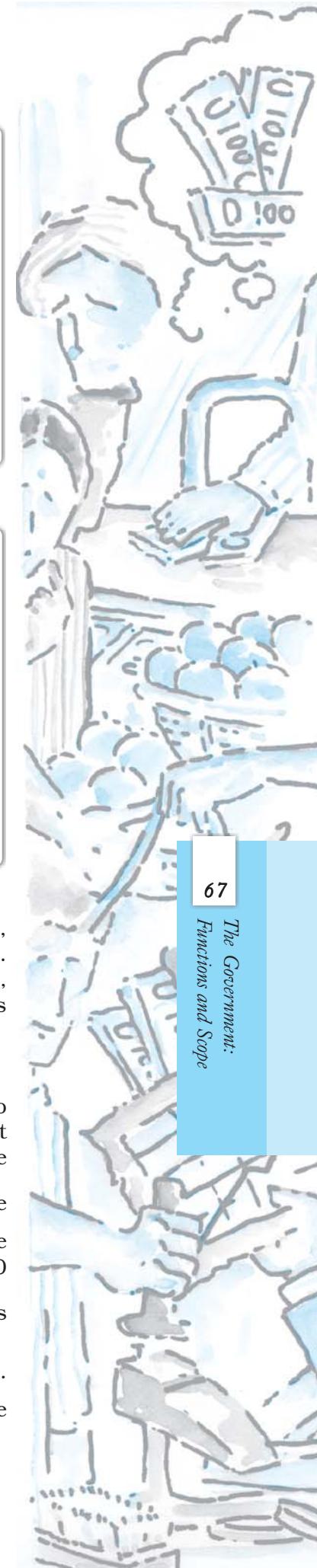
EXAMPLE 5.1

Assume that the marginal propensity to consume is 0.8. The government expenditure multiplier will then be

$\frac{1}{1-c} = \frac{1}{1-0.8} = \frac{1}{0.2} = 5$. For an increase in government spending by 100, the equilibrium income will increase by 500 ($\frac{1}{1-c} \Delta G = 5 \times 100$). The tax multiplier is

given by $\frac{-c}{1-c} = \frac{-0.8}{1-0.8} = \frac{-0.8}{0.2} = -4$.

A tax cut of 100 ($\Delta T = -100$) will increase



equilibrium income by 400 ($\frac{-c}{1-c} \Delta T = -4 \times -100$). Thus, the equilibrium income increases in this case by less than the amount by which it increased under a G increase.

Within the present framework, if we take different values of the marginal propensity to consume and calculate the values of the two multipliers, we find that the tax multiplier is always one less in absolute value than the government expenditure multiplier. This has an interesting implication. If an increase in government spending is matched by an equal increase in taxes, so that the budget remains balanced, output will rise by the amount of the increase in government spending. Adding the two policy multipliers gives

$$\text{The balanced budget multiplier} = \frac{\Delta Y^*}{\Delta G} = \frac{1}{1-c} + \frac{-c}{1-c} = \frac{1-c}{1-c} = 1 \quad (5.9)$$

A balanced budget multiplier of unity implies that a 100 increase in G financed by 100 increase in taxes increases income by just 100. This can be seen from Example 1 where an increase in G by 100 increases output by 500. A tax increase would reduce income by 400 with the net increase of income equal to 100. The equilibrium income refers to the final income that one arrives at in a period sufficiently long for all the rounds of the multipliers to work themselves out. We find that output increases by exactly the amount of increased G with no induced consumption spending due to increase in taxes. To see what must be at work, we examine the multiplier process. The increase in government spending by a certain amount raises income by that amount directly and then indirectly through the multiplier chain increasing income by

$$\Delta Y = \Delta G + c\Delta G + c^2\Delta G + \dots = \Delta G(1 + c + c^2 + \dots) \quad (5.10)$$

But the tax increase only enters the multiplier process when the cut in disposable income reduces consumption by c times the reduction in taxes. Thus the effect on income of the tax increase is given by

$$\Delta Y = -c\Delta T - c^2\Delta T + \dots = -\Delta T(c + c^2 + \dots) \quad (5.11)$$

The difference between the two gives the net effect on income. Since $\Delta G = \Delta T$, from 5.10 and 5.11, we get $\Delta Y = \Delta G$, that is, income increases by the amount by which government spending increases and the balanced budget multiplier is unity. This multiplier can also be derived from equation 5.3 as follows

$$\Delta Y = \Delta \bar{G} + c(\Delta Y - \Delta T) \text{ since investment does not change } (\Delta I = 0) \quad (5.12)$$

Since $\Delta \bar{G} = \Delta T$, we have

$$\frac{\Delta Y}{\Delta G} = \frac{1-c}{1-c} = 1 \quad (5.13)$$

Case of Proportional Taxes: A more realistic assumption would be that the government collects a constant fraction, t , of income in the form of taxes so that $T = tY$. The consumption function with proportional taxes is given by

$$C = \bar{C} + c(Y - tY + \bar{T}) = \bar{C} + c(1-t)Y + c\bar{T} \quad (5.14)$$

We note that proportional taxes not only lower consumption at each level of income but also lower the slope of the consumption function. The mpc out of income falls to $c(1-t)$. The new aggregate demand schedule, AD' , has a larger intercept but is flatter as shown in Fig. 5.3.

Now we have

$$AD = \bar{C} + c(1-t)Y + c\bar{TR} + I \\ + G = \bar{A} + c(1-t)Y \quad (5.15)$$

Where \bar{A} = autonomous expenditure and equals $\bar{C} + c\bar{TR} + I + G$. Income determination condition in the product market is, $Y = AD$, which can be written as

$$Y = \bar{A} + c(1-t)Y \quad (5.16)$$

Solving for the equilibrium level of income

$$Y^* = \frac{1}{1-c(1-t)} \bar{A} \quad (5.17)$$

so that the multiplier is given by

$$\frac{\Delta Y}{\Delta A} = \frac{1}{1-c(1-t)} \quad (5.18)$$

Comparing this with the value of the multiplier with lump-sum taxes case, we find that the value has become smaller. When income rose as a result of an increase in government spending in the case of lump-sum taxes, consumption increased by c times the increase in income. With proportional taxes, consumption will rise by less, ($c - ct = c(1-t)$) times the increase in income.

For changes in G , the multiplier will now be given by

$$\Delta Y = \Delta \bar{G} + c(1-t)\Delta Y \quad (5.19)$$

$$\Delta Y = \frac{1}{1-c(1-t)} \Delta \bar{G} \quad (5.20)$$

The income increases from Y^* to Y' as shown in Fig. 5.4.

The decrease in taxes works in effect like an increase in propensity to consume as shown in Fig. 5.5. The AD curve shifts up to AD' . At the initial level of income, aggregate demand for goods exceeds output because the tax reduction causes increased consumption. The new higher level of income is Y' .

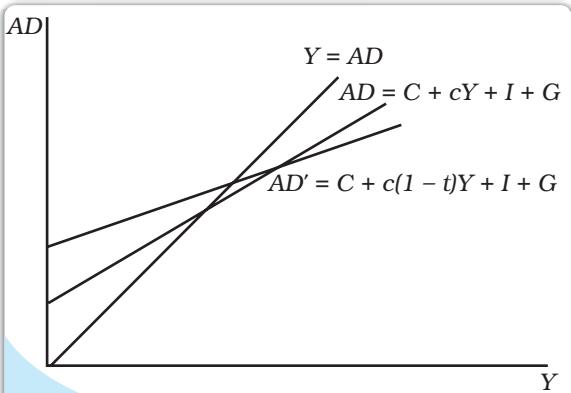


Fig. 5.3

Government and Aggregate Demand (proportional taxes make the AD schedule flatter)

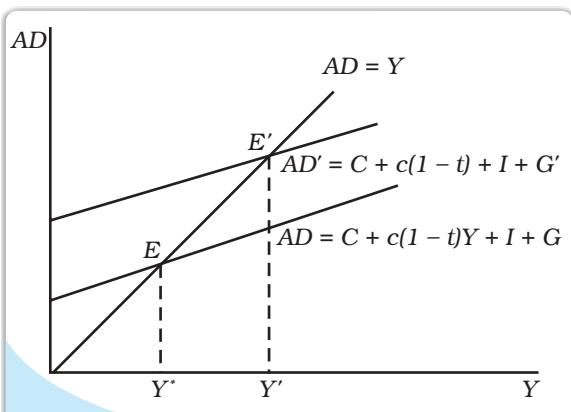


Fig. 5.4

Increase in Government Expenditure (with proportional taxes)

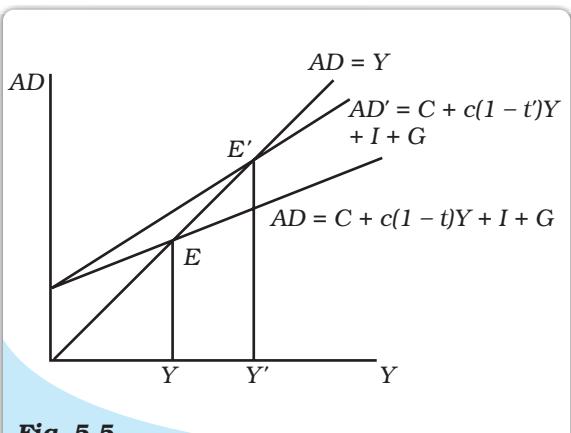
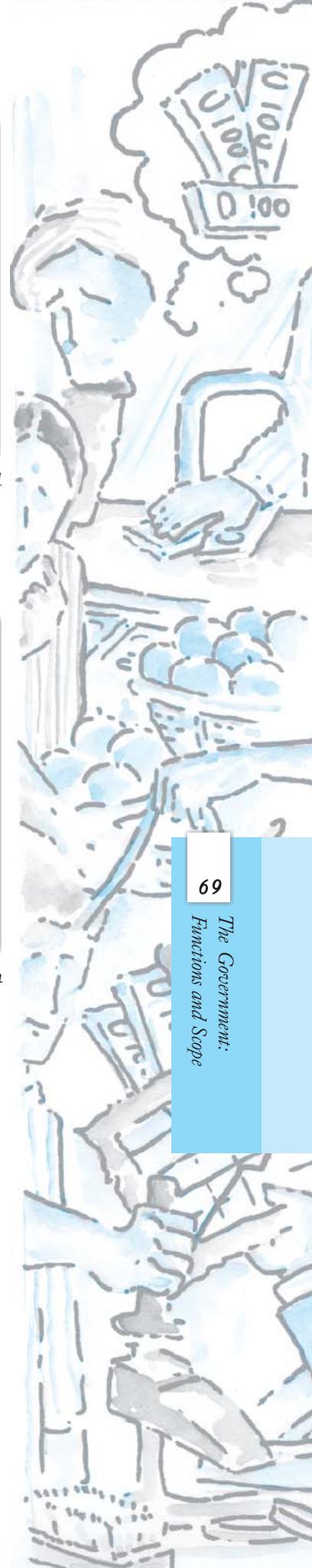


Fig. 5.5

Effects of a Reduction in the Proportional Tax Rate



EXAMPLE 5.2

In Example 5.1, if we take a tax rate of 0.25, we find consumption will now rise by 0.60 ($c(1 - t) = 0.8 \times 0.75$) for every unit increase in income instead of the earlier 0.80. Thus, consumption will increase by less than before. The

government expenditure multiplier will be $\frac{1}{1 - c(1 - t)} = \frac{1}{1 - 0.6} = \frac{1}{0.4} = 2.5$ which is smaller than that obtained with lump-sum taxes. If government expenditure rises by 100, output will rise by the multiplier times the rise in government expenditure, that is, by $2.5 \times 100 = 250$. This is smaller than the increase in output with lump-sum taxes.

The proportional income tax, thus, acts as an **automatic stabiliser** – a shock absorber because it makes disposable income, and thus consumer spending, less sensitive to fluctuations in GDP. When GDP rises, disposable income also rises but by less than the rise in GDP because a part of it is siphoned off as taxes. This helps limit the upward fluctuation in consumption spending. During a recession when GDP falls, disposable income falls less sharply, and consumption does not drop as much as it otherwise would have fallen had the tax liability been fixed. This reduces the fall in aggregate demand and stabilises the economy.

We note that these fiscal policy instruments can be varied to offset the effects of undesirable shifts in investment demand. That is, if investment falls from I_0 to I_1 , government spending can be raised from G_0 to G_1 so that autonomous expenditure ($C + I_0 + G_0 = C + I_1 + G_1$) and equilibrium income remain the same. This deliberate action to stabilise the economy is often referred to as **discretionary fiscal policy** to distinguish it from the inherent automatic stabilising properties of the fiscal system. As discussed earlier, proportional taxes help to stabilise the economy against upward and downward movements. Welfare transfers also help to stabilise income. During boom years, when employment is high, tax receipts collected to finance such expenditure increase exerting a stabilising pressure on high consumption spending; conversely, during a slump, these welfare payments help sustain consumption. Further, even the private sector has built-in stabilisers. Corporations maintain their dividends in the face of a change in income in the short run and households try to maintain their previous living standards. All these work as shock absorbers without the need for any decision-maker to take action. That is, they work automatically. The built-in stabilisers, however, reduce only part of the fluctuation in the economy, the rest must be taken care of by deliberate policy initiative.

Transfers: We suppose that instead of raising government spending in goods and services, government increases transfer payments, \bar{TR} . Autonomous spending, \bar{A} , will increase by $c\Delta\bar{TR}$, so output will rise by less than the amount by which it increases when government expenditure increases because a part of any increase in transfer payments is saved. The change in equilibrium income for a change in transfers is given by

$$\Delta Y = \frac{c}{1 - c} \Delta TR \quad (5.21)$$

or

$$\frac{\Delta Y}{\Delta TR} = \frac{c}{1 - c} \quad (5.22)$$

EXAMPLE 5.3

We suppose that the marginal propensity to consume is 0.75 and we have lump-sum taxes. The change in equilibrium income when government purchases increase by 20 is given by $\Delta Y = \frac{1}{1-0.75} \Delta G = 4 \times 20 = 80$. When taxes increase by 30, equilibrium income will decrease by 90 because $\Delta Y = \frac{-0.75}{1-0.75} \Delta T = -3 \times 30 = -90$. An increase in transfers of 20 will raise equilibrium income by $\Delta Y = \frac{0.75}{1-0.75} \Delta TR = 3 \times 20 = 60$. Thus, we find that income increases by less than it increased with a rise in government purchases.

5.2.3 Debt

Budgetary deficits must be financed by either taxation, borrowing or printing money. Governments have mostly relied on borrowing, giving rise to what is called government debt. The concepts of deficits and debt are closely related. Deficits can be thought of as a *flow* which add to the *stock* of debt. If the government continues to borrow year after year, it leads to the accumulation of debt and the government has to pay more and more by way of interest. These interest payments themselves contribute to the debt.

Perspectives on the Appropriate Amount of Government Debt: There are two interlinked aspects of the issue. One is whether government debt is a burden and two, the issue of financing the debt. The burden of debt must be discussed keeping in mind that what is true of one small trader's debt may not be true for the government's debt, and one must deal with the 'whole' differently from the 'part'. Unlike any one trader, the government can raise resources through taxation and printing money.

By borrowing, the government transfers the burden of reduced consumption on future generations. This is because it borrows by issuing bonds to the people living at present but may decide to pay off the bonds some twenty years later by raising taxes. These may be levied on the young population that have just entered the work force, whose disposable income will go down and hence consumption. Thus, national savings, it was argued, would fall. Also, government borrowing from the people reduces the savings available to the private sector. To the extent that this reduces capital formation and growth, debt acts as a 'burden' on future generations.

Traditionally, it has been argued that when a government cuts taxes and runs a budget deficit, consumers respond to their after-tax income by spending more. It is possible that these people are short-sighted and do not understand the implications of budget deficits. They may not realise that at some point in the future, the government will have to raise taxes to pay off the debt and accumulated interest. Even if they comprehend this, they may expect the future taxes to fall not on them but on future generations.

A counter argument is that consumers are forward-looking and will base their spending not only on their current income but also on their expected future income. They will understand that borrowing today means higher taxes in the future. Further, the consumer will be concerned about future generations because they are the children and grandchildren of the present generation and the family which is the relevant decision making unit, continues living. They would increase savings now, which will fully offset the increased government dissaving so that national savings do not change. This



view is called **Ricardian equivalence** after one of the greatest nineteenth century economists, David Ricardo, who first argued that in the face of high deficits, people save more. It is called ‘equivalence’ because it argues that taxation and borrowing are equivalent means of financing expenditure. When the government increases spending by borrowing today, which will be repaid by taxes in the future, it will have the same impact on the economy as an increase in government expenditure that is financed by a tax increase today.

It has often been argued that ‘debt does not matter because we owe it to ourselves’. This is because although there is a transfer of resources between generations, purchasing power remains within the nation. However, any debt that is owed to foreigners involves a burden since we have to send goods abroad corresponding to the interest payments.

Other Perspectives on Deficits and Debt: One of the main criticisms of deficits is that they are inflationary. This is because when government increases spending or cuts taxes, aggregate demand increases. Firms may not be able to produce higher quantities that are being demanded at the ongoing prices. Prices will, therefore, have to rise. However, if there are unutilised resources, output is held back by lack of demand. A high fiscal deficit is accompanied by higher demand and greater output and, therefore, need not be inflationary.

It has been argued that there is a decrease in investment due to a reduction in the amount of savings available to the private sector. This is because if the government decides to borrow from private citizens by issuing bonds to finance its deficits, these bonds will compete with corporate bonds and other financial instruments for the available supply of funds. If some private savers decide to buy bonds, the funds remaining to be invested in private hands will be smaller. Thus, some private borrowers will get ‘crowded out’ of the financial markets as the government claims an increasing share of the economy’s total savings. However, one must note that the economy’s flow of savings is not really fixed unless we assume that income cannot be augmented. If government deficits succeed in their goal of raising production, there will be more income and, therefore, more saving. In this case, both government and industry can borrow more.

Also, if the government invests in infrastructure, future generations may be better off, provided the return on such investments is greater than the rate of interest. The actual debt could be paid off by the growth in output. The debt should not then be considered burdensome. The growth in debt will have to be judged by the growth of the economy as a whole.

Deficit Reduction: Government deficit can be reduced by an increase in taxes or reduction in expenditure. In India, the government has been trying to increase tax revenue with greater reliance on direct taxes (indirect taxes are regressive in nature – they impact all income groups equally). There has also been an attempt to raise receipts through the sale of shares in PSUs. However, the major thrust has been towards reduction in government expenditure. This could be achieved through making government activities more efficient through better planning of programmes and better administration. A recent study⁴ by the Planning Commission has estimated that to transfer Re1 to the poor, government spends Rs 3.65 in the form of food subsidy, showing that cash transfers would lead to increase in welfare. The other way is to change the scope of the government by withdrawing from some of the areas where it

⁴“Performance Evaluation of the Targeted Public Distribution System” by the Programme Evaluation Organisation, Planning Commission.

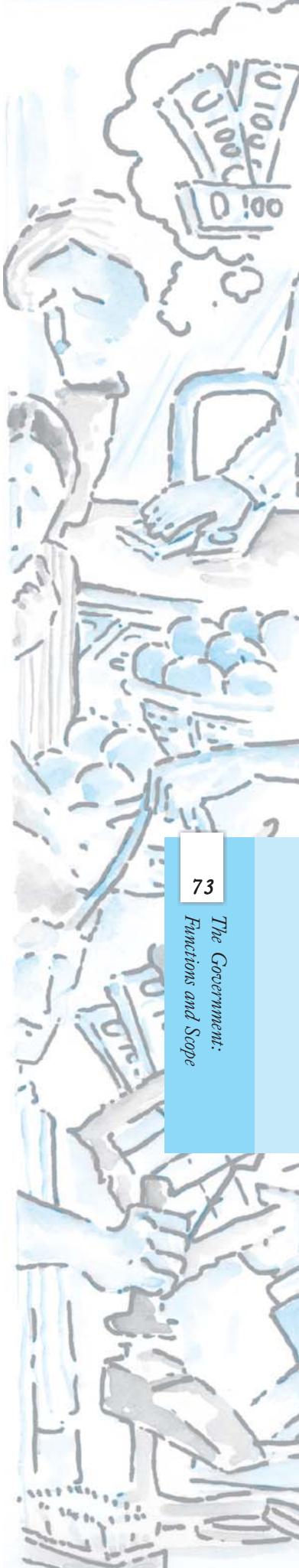
operated before. Cutting back government programmes in vital areas like agriculture, education, health, poverty alleviation, etc. would adversely affect the economy. Governments in many countries run huge deficits forcing them to eventually put in place self-imposed constraints of not increasing expenditure over pre-determined levels (Box 5.1 gives the main features of the FRBMA in India). These will have to be examined keeping in view the above factors. We must note that larger deficits do not always signify a more expansionary fiscal policy. The same fiscal measures can give rise to a large or small deficit, depending on the state of the economy. For example, if an economy experiences a recession and GDP falls, tax revenues fall because firms and households pay lower taxes when they earn less. This means that the deficit increases in a recession and falls in a boom, even with no change in fiscal policy.

1. Public goods, as distinct from private goods, are collectively consumed. Two important features of public goods are – they are non-rivalrous in that one person can increase her satisfaction from the good without reducing that obtained by others and they are non-excludable, and there is no feasible way of excluding anyone from enjoying the benefits of the good. These make it difficult to collect fees for their use and private enterprise will in general not provide these goods. Hence, they must be provided by the government.
2. The three functions of allocation, redistribution and stabilisation operate through the expenditure and receipts of the government.
3. The budget, which gives a statement of the receipts and expenditure of the government, is divided into the revenue budget and capital budget to distinguish between current financial needs and investment in the country's capital stock.
4. The growth of revenue deficit as a percentage of fiscal deficit points to a deterioration in the quality of government expenditure involving lower capital formation.
5. Proportional taxes reduce the autonomous expenditure multiplier because taxes reduce the marginal propensity to consume out of income.
6. Public debt is burdensome if it reduces future growth in output.

-  Public goods
- Automatic stabiliser
- Discretionary fiscal policy
- Ricardian equivalence

Box 5.1: Fiscal Responsibility and Budget Management Act, 2003 (FRBMA)

In a multi-party parliamentary system, electoral concerns play an important role in determining expenditure policies. A legislative provision, it is argued, that is applicable to all governments – present and future – is likely to be effective in keeping deficits under control. The enactment of the FRBMA, in August 2003, marked a turning point in fiscal reforms, binding the



government through an institutional framework to pursue a prudent fiscal policy. The central government must ensure inter-generational equity, long-term macro-economic stability by achieving sufficient revenue surplus, removing fiscal obstacles to monetary policy and effective debt management by limiting deficits and borrowing. The rules under the Act were notified with effect from July, 2004.

Main Features

1. The Act mandates the central government to take appropriate measures to reduce fiscal deficit and revenue deficits so as to eliminate the revenue deficit by March 31, 2009 and thereafter build up adequate revenue surplus.
2. It requires the reduction in fiscal deficit by 0.3 per cent of GDP each year and the revenue deficit by 0.5 per cent. If this is not achieved through tax revenues, the necessary adjustment has to come from a reduction in expenditure.
3. The actual deficits may exceed the targets specified only on grounds of national security or natural calamity or such other exceptional grounds as the central government may specify.
4. The central government shall not borrow from the Reserve Bank of India except by way of advances to meet temporary excess of cash disbursements over cash receipts.
5. The Reserve Bank of India must not subscribe to the primary issues of central government securities from the year 2006-07.
6. Measures to be taken to ensure greater transparency in fiscal operations.
7. The central government to lay before both Houses of Parliament three statements—Medium-term Fiscal Policy Statement, The Fiscal Policy Strategy Statement, The Macroeconomic Framework Statement along with the Annual Financial Statement.
8. Quarterly review of the trends in receipts and expenditure in relation to the budget be placed before both Houses of Parliament.

The Act applies only to the central government. Though few states like Karnataka, Kerala, Punjab, Tamil Nadu and Uttar Pradesh have enacted fiscal responsibility legislations, the objective of fiscal consolidation, growth and macroeconomic stability will not be achieved if all the states do not participate. However, though there has been an effort by the government to widen the tax net and ensure better compliance, there have been fears that welfare expenditure may get reduced to meet the targets mandated by the Act.

Exercises

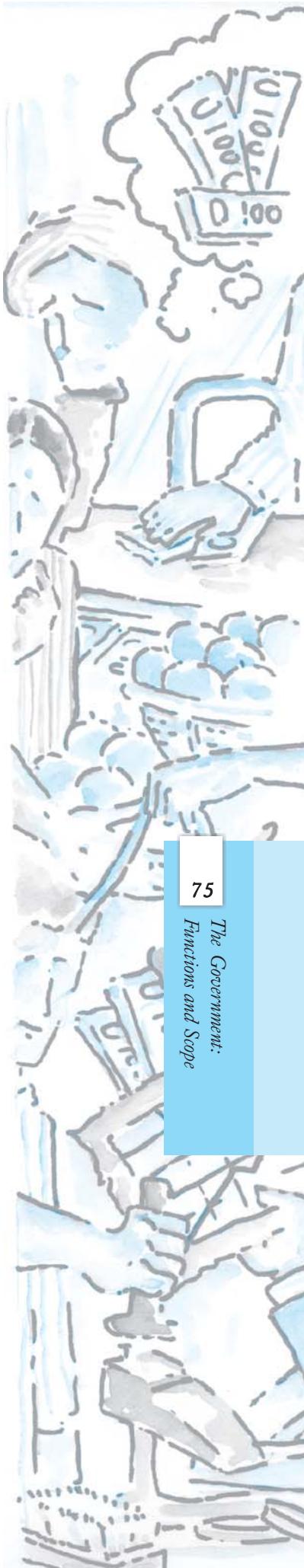


1. Explain why public goods must be provided by the government.
2. Distinguish between revenue expenditure and capital expenditure.
3. 'The fiscal deficit gives the borrowing requirement of the government'. Elucidate.
4. Give the relationship between the revenue deficit and the fiscal deficit.
5. Suppose that for a particular economy, investment is equal to 200, government purchases are 150, net taxes (that is lump-sum taxes minus transfers) is 100 and consumption is given by $C = 100 + 0.75Y$ (a) What is the level of equilibrium income? (b) Calculate the value of the government expenditure multiplier and the tax multiplier. (c) If government expenditure increases by 200, find the change in equilibrium income.
6. Consider an economy described by the following functions: $C = 20 + 0.80Y$, $I = 30$, $G = 50$, $TR = 100$ (a) Find the equilibrium level of income and the

- autonomous expenditure multiplier in the model. (b) If government expenditure increases by 30, what is the impact on equilibrium income? (c) If a lump-sum tax of 30 is added to pay for the increase in government purchases, how will equilibrium income change?
7. In the above question, calculate the effect on output of a 10 per cent increase in transfers, and a 10 per cent increase in lump-sum taxes. Compare the effects of the two.
 8. We suppose that $C = 70 + 0.70Y$, $D = 90$, $G = 100$, $T = 0.10Y$ (a) Find the equilibrium income. (b) What are tax revenues at equilibrium income? Does the government have a balanced budget?
 9. Suppose marginal propensity to consume is 0.75 and there is a 20 per cent proportional income tax. Find the change in equilibrium income for the following (a) Government purchases increase by 20 (b) Transfers decrease by 20.
 10. Explain why the tax multiplier is smaller in absolute value than the government expenditure multiplier.
 11. Explain the relation between government deficit and government debt.
 12. Does public debt impose a burden? Explain.
 13. Are fiscal deficits necessarily inflationary?
 14. Discuss the issue of deficit reduction.

Suggested Readings

1. Dornbusch, R. and S. Fischer, 1994. *Macroeconomics*, sixth edition, McGraw-Hill, Paris.
2. Mankiw, N.G., 2000. *Macroeconomics*, fourth edition, Macmillan Worth publishers, New York.
3. *Economic Survey*, Government of India, various issues.



Chapter 6



Open Economy Macroeconomics

So far, we have simplified the analysis of income determination by assuming a closed economy. In reality, most modern economies are open. Interaction with other economies of the world widens choice in three broad ways

- (i) Consumers and firms have the opportunity to choose between domestic and foreign goods. This is the product market linkage which occurs through international trade.
- (ii) Investors have the opportunity to choose between domestic and foreign assets. This constitutes the financial market linkage.
- (iii) Firms can choose where to locate production and workers to choose where to work. This is the factor market linkage. Labour market linkages have been relatively less due to various restrictions on the movement of people through immigration laws. Movement of goods has traditionally been seen as a substitute for the movement of labour. We focus here on the first two linkages.

An **open economy** is one that trades with other nations in goods and services and, most often, also in financial assets. Indians, for instance, enjoy using products produced around the world and some of our production is exported to foreign countries. Foreign trade, therefore, influences Indian aggregate demand in two ways. First, when Indians buy foreign goods, this spending escapes as a **leakage** from the circular flow of income decreasing aggregate demand. Second, our exports to foreigners enter as an **injection** into the circular flow, increasing aggregate demand for domestically produced goods. Total foreign trade (exports + imports) as a proportion of GDP is a common measure of the **degree of openness** of an economy. In 2004-2005, this was 38.9 per cent for the Indian economy (imports constituted 17.1 per cent and exports 11.8 per cent of GDP). This is substantially higher than a total of 16 per cent that prevailed in 1985-86. However, in comparison to other countries, India is relatively less open. There are several countries whose foreign trade proportions are above 50 per cent of GDP.

Now, when goods move across national borders, **money** must move in the opposite direction. At the international level, there is no single currency that is issued by a central authority. Foreign economic agents will accept a national currency only if they are convinced that the currency will maintain a stable purchasing power. Without this confidence, a currency will not be used as an

international medium of exchange and unit of account since there is no international authority with the power to force the use of a particular currency in international transactions. Governments have tried to gain confidence of potential users by announcing that the national currency will be freely convertible at a fixed price into another asset, over whose value the issuing authority has no control. This other asset most often has been gold, or other national currencies. There are two aspects of this commitment that has affected its credibility – the ability to convert freely in unlimited amounts and the price at which conversion takes place. The **international monetary system** has been set up to handle these issues and ensure stability in international transactions. A nation's commitment regarding the above two issues will affect its trade and financial interactions with the rest of the world.

We begin section 6.1 with the accounting of international trade and financial flows. The next section examines the determination of price at which national currencies are exchanged for each other. In section 6.3, the closed economy income-expenditure model is amended to include international effects.

6.1 THE BALANCE OF PAYMENTS

The balance of payments (BoP) record the transactions in goods, services and assets between residents of a country with the rest of the world. There are two main accounts in the BoP – the current account and the capital account.

The **current account** records exports and imports in goods and services and transfer payments. Trade in services denoted as invisible trade (because they are not seen to cross national borders) includes both factor income (payment for inputs-investment income, that is, the interest, profits and dividends on our assets abroad minus the income foreigners earn on assets they own in India) and non-factor income (shipping, banking, insurance, tourism, software services, etc.). Transfer payments are receipts which the residents of a country receive 'for free', without having to make any present or future payments in return. They consist of remittances, gifts and grants. They could be official or private. The balance of exports and imports of goods is referred to as the **trade balance**. Adding trade in services and net transfers to the trade balance, we get the **current account balance**. The capital account records all international purchases and sales of assets such as money, stocks, bonds, etc. We note that any transaction resulting in a payment to foreigners is entered as a **debit** and is given a negative sign. Any transaction resulting in a receipt from foreigners is entered as a **credit** and is given a positive sign.

6.1.1 BoP Surplus and Deficit

The essence of international payments is that just like an individual who spends more than her income must finance the difference by selling assets or by borrowing, a country that has a deficit in its current account (spending more abroad than it receives from sales to the rest of the world) must finance it by selling assets or by borrowing abroad. Thus, any current account deficit is of necessity **financed** by a net capital inflow. Table 6.1 (given at the end of chapter) shows that there has been a trade deficit throughout the period and a surplus in invisibles except for 1990-91. The current account deficit (which has been observed for 24 years from 1977-78) had started shrinking and turned into surplus from 2001-02. The surplus continued till 2003-04, but turned into a deficit in 2004-05. The large trade deficit could not be bridged by the invisibles surplus. In April-September 2005-06, the current account deficit of

US\$13 billion was financed by a capital inflow of US\$19.5 billion, the extra capital inflow of US\$ 6.5 billion being added to our stock of foreign exchange.

Alternatively, the country could engage in **official reserve transactions**, running down its reserves of foreign exchange, in the case of a deficit by selling foreign currency in the foreign exchange market. The decrease (increase) in official reserves is called the overall balance of payments deficit (surplus). The basic premise is that the monetary authorities are the ultimate financiers of any deficit in the balance of payments (or the recipients of any surplus). A country is said to be in balance of payments equilibrium when the sum of its current account and its non-reserve capital account equals zero, so that the current account balance is financed entirely by international lending without reserve movements. We note that the official reserve transactions are more relevant under a regime of pegged exchange rates than when exchange rates are floating.

Autonomous and Accommodating Transactions: International economic transactions are called **autonomous** when transactions are made independently of the state of the BoP (for instance due to profit motive). These items are called 'above the line' items in the BoP. The balance of payments is said to be in surplus (deficit) if autonomous receipts are greater (less) than autonomous payments. **Accommodating transactions** (termed 'below the line' items), on the other hand, are determined by the net consequences of the autonomous items, that is, whether the BoP is in surplus or deficit. The official reserve transactions are seen as the accommodating item in the BoP (all others being autonomous).

Errors and Omissions constitute the third element in the BoP (apart from the current and capital accounts) which is the 'balancing item' reflecting our inability to record all international transactions accurately.

6.2 THE FOREIGN EXCHANGE MARKET

Having considered accounting of international transactions on the whole, we will now take up a single transaction. Let us assume that an Indian resident wants to visit London on a vacation (an import of tourist services). She will have to pay in pounds for her stay there. She will need to know *where* to obtain the pounds and at what price. Her demand for pounds would constitute a demand for *foreign exchange* which would be supplied in the *foreign exchange market* – the market in which national currencies are traded for one another. The major participants in this market are commercial banks, foreign exchange brokers and other authorised dealers and the monetary authorities. It is important to note that, although the participants themselves may have their own trading centres, the market itself is world-wide. There is close and continuous contact between the trading centres and the participants deal in more than one market.

The price of one currency in terms of the other is known as the **exchange rate**. Since there is a symmetry between the two currencies, the exchange rate may be defined in one of the two ways. First, as the amount of domestic currency required to buy one unit of foreign currency, i.e. a rupee-dollar exchange rate of



*Your currency in exchange for the dollar?
Should exchange rates between two currencies
continue like this? Discuss.*

Rs 50 means that it costs Rs 50 to buy one dollar, and second, as the cost in foreign currency of purchasing one unit of domestic currency. In the above case, we would say that it costs 2 cents to buy a rupee. The practice in economic literature, however, is to use the former definition – as the price of foreign currency in terms of domestic currency. This is the bilateral **nominal exchange rate** – bilateral in the sense that they are exchange rates for one currency against another and they are nominal because they quote the exchange rate in money terms, i.e. so many rupees per dollar or per pound.

However, returning to our example, if one wants to plan a trip to London, she needs to know how expensive British goods are relative to goods at home. The measure that captures this is the **real exchange rate** – the ratio of foreign to domestic prices, measured in the same currency. It is defined as

$$\text{Real exchange rate} = \frac{eP_f}{P} \quad (6.1)$$

where P and P_f are the price levels here and abroad, respectively, and e is the rupee price of foreign exchange (the nominal exchange rate). The numerator expresses prices abroad measured in rupees, the denominator gives the domestic price level measured in rupees, so the real exchange rate measures prices abroad relative to those at home. If the real exchange rate is equal to one, currencies are at **purchasing power parity**. This means that goods cost the same in two countries when measured in the same currency. For instance, if a pen costs \$4 in the US and the nominal exchange rate is Rs 50 per US dollar, then with a real exchange rate of 1, it should cost Rs 200 ($eP_f = 50 \times 4$) in India. If the real exchange rises above one, this means that goods abroad have become more expensive than goods at home. The real exchange rate is often taken as a measure of a country's **international competitiveness**.

Since a country interacts with many countries, we may want to see the movement of the domestic currency relative to all other currencies in a single number rather than by looking at bilateral rates. That is, we would want an index for the exchange rate against other currencies, just as we use a price index to show how the prices of goods in general have changed. This is calculated as the **Nominal Effective Exchange Rate** (NEER) which is a multilateral rate representing the price of a representative basket of foreign currencies, each weighted by its importance to the domestic country in international trade (the average of export and import shares is taken as an indicator of this). The **Real Effective Exchange Rate** (REER) is calculated as the weighted average of the real exchange rates of all its trade partners, the weights being the shares of the respective countries in its foreign trade. It is interpreted as the quantity of domestic goods required to purchase one unit of a given basket of foreign goods.

6.2.1 Determination of the Exchange Rate

The question arises as to why the foreign exchange rate¹ is at this level and what causes its movements? To understand the economic principles that lie behind exchange rate determination, we study the major exchange rate regimes² that have characterised the international monetary system. There has been a move from a regime of commitment of fixed-price convertibility to one without commitments where residents enjoy greater freedom to convert domestic currency into foreign currencies but do not enjoy a price guarantee.

¹Between any two currencies

²An exchange rate regime or system is a set of international rules governing the setting of exchange rates.

6.2.2 Flexible Exchange Rates

In a system of **flexible exchange rates** (also known as **floating exchange rates**), the exchange rate is determined by the forces of market demand and supply. In a completely flexible system, the central banks follow a simple set of rules – they do nothing to directly affect the level of the exchange rate, in other words they do not intervene in the foreign exchange market (and therefore, there are no official reserve transactions). The link between the balance of payments accounts and the transactions in the foreign exchange market is evident when we recognise that all expenditures by domestic residents on foreign goods, services and assets and all foreign transfer payments (debits in the BoP accounts) also represent demand for foreign exchange. The Indian resident buying a Japanese car pays for it in rupees but the Japanese exporter will expect to be paid in yen. So rupees must be exchanged for yen in the foreign exchange market. Conversely, all exports by domestic residents reflect equal earnings of foreign exchange. For instance, Indian exporters will expect to be paid in rupees and, to buy our goods, foreigners must sell their currency and buy rupees. Total credits in the BoP accounts are then equal to the supply of foreign exchange. Another reason for the demand for foreign exchange is for speculative purposes.

Let us assume, for simplicity, that India and the United States are the only countries in the world, so that there is only one exchange rate to be determined. The demand curve (DD) is downward sloping because a rise in the price of foreign exchange will increase the cost in terms of rupees of purchasing foreign goods. Imports will therefore decline and less foreign exchange will be demanded. For the supply of foreign exchange to increase as the exchange rate rises, the foreign demand for our exports must be more than **unit elastic**, meaning simply that a one per cent increase in the exchange rate (which results in a one per cent decline in the price of the export good to the foreign country buying our good) must result in an increase in demand of more than one per cent. If this condition is met, the rupee volume of our exports will rise more than proportionately to the rise in the exchange rate, and earnings in dollars (the supply of foreign exchange) will increase as the exchange rate rises. However, a vertical supply curve (with a unit elastic foreign demand for Indian exports) would not change the analysis. We note that here we are holding all prices other than the exchange rate constant.

In this case of flexible exchange rates without central bank intervention, the exchange rate moves to clear the market, to equate the demand for and supply of foreign exchange. In Fig. 6.1, the equilibrium exchange rate is e^* .

If the demand for foreign exchange goes up due to Indians travelling abroad more often, or increasingly showing a preference for imported goods, the DD curve will shift upward and rightward. The resulting intersection would be at a higher exchange rate. Changes in the price of foreign exchange under flexible exchange

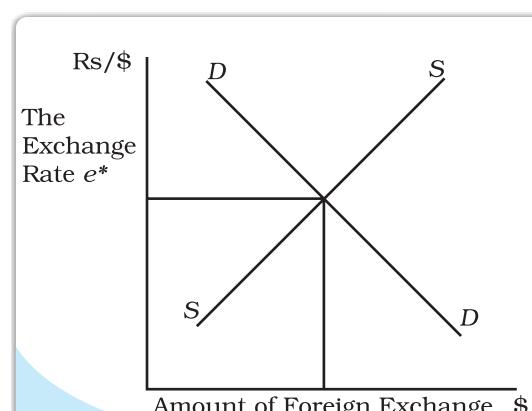


Fig. 6.1

Equilibrium under Flexible Exchange Rates

rates are referred to as currency depreciation or appreciation. In the above case, the domestic currency (rupee) has **depreciated** since it has become less expensive in terms of foreign currency. For instance, if the equilibrium rupee-dollar exchange rate was Rs 45 and now it has become Rs 50 per dollar, the rupee has depreciated against the dollar. By contrast, the currency **appreciates** when it becomes more expensive in terms of foreign currency.

At the initial equilibrium exchange rate e^* , there is now an excess demand for foreign exchange. To clear the market, the exchange rate must rise to the equilibrium value e_1 as shown in Fig. 6.2. The rise in exchange rate (depreciation) will cause the quantity of import demand to fall since the rupee price of imported goods rises with the exchange rate. Also, the quantity of exports demanded will increase since the rise in the exchange rate makes exports less expensive to foreigners. At the new equilibrium with e_1 , the supply and demand for foreign exchange is again equal.

Speculation: Exchange rates in the market depend not only on the demand and supply of exports and imports, and investment in assets, but also on foreign exchange speculation where foreign exchange is demanded for the possible gains from appreciation of the currency. Money in any country is an asset. If Indians believe that the British pound is going to increase in value relative to the rupee, they will want to hold pounds. For instance, if the current exchange rate is Rs 80 to a pound and investors believe that the pound is going to appreciate by the end of the month and will be worth Rs 85, investors think if they took Rs 80,000 and bought 1,000 pounds, at the end of the month, they would be able to exchange the pounds for Rs 85,000, thus making a profit of Rs 5,000. This expectation would increase the demand for pounds and cause the rupee-pound exchange rate to increase in the present, making the beliefs self-fulfilling.

The above analysis assumes that interest rates, incomes and prices remain constant. However, these may change and that will shift the demand and supply curves for foreign exchange.

Interest Rates and the Exchange Rate: In the short run, another factor that is important in determining exchange rate movements is the **interest rate differential** i.e. the difference between interest rates between countries. There are huge funds owned by banks, multinational corporations and wealthy individuals which move around the world in search of the highest interest rates. If we assume that government bonds in country A pay 8 per cent rate of interest whereas equally safe bonds in country B yield 10 per cent, the interest rate differential is 2 per cent. Investors from country A will be attracted by the high interest rates in country B and will buy the currency of country B selling their own currency. At the same time investors in country B will also find investing in their own country more attractive and will therefore demand less

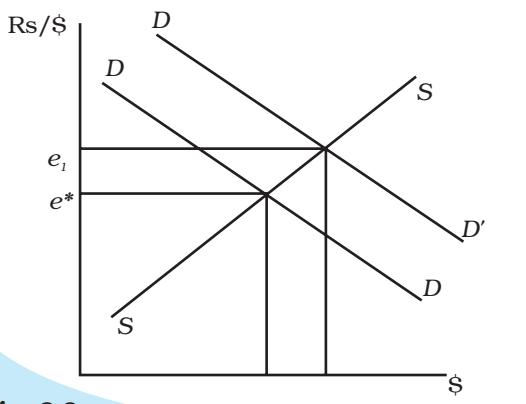
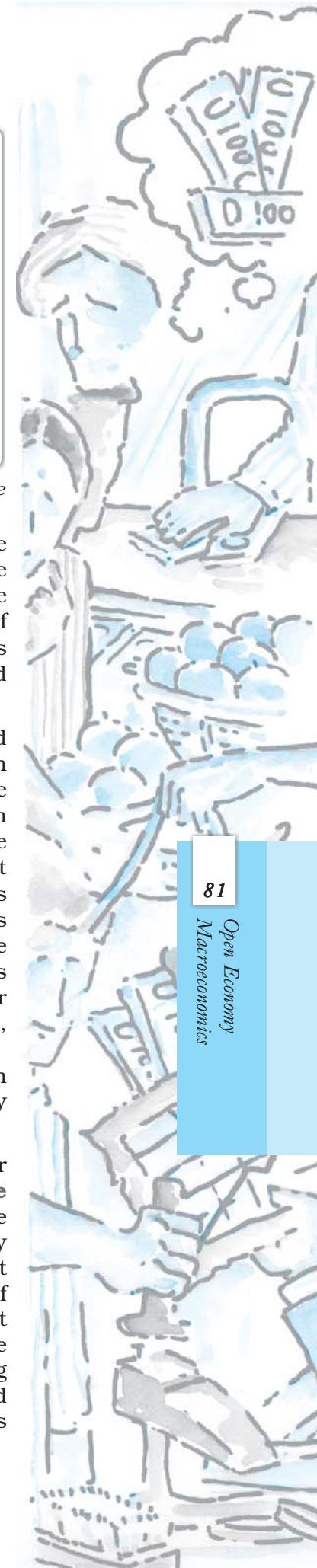


Fig. 6.2

Effect of an Increase in Demand for Imports in the Foreign Exchange Market



of country A's currency. This means that the demand curve for country A's currency will shift to the left and the supply curve will shift to the right causing a depreciation of country A's currency and an appreciation of country B's currency. Thus, *a rise in the interest rates at home often leads to an appreciation of the domestic currency*. Here, the implicit assumption is that no restrictions exist in buying bonds issued by foreign governments.

Income and the Exchange Rate: When income increases, consumer spending increases. Spending on imported goods is also likely to increase. When imports increase, the demand curve for foreign exchange shifts to the right. There is a depreciation of the domestic currency. If there is an increase in income abroad as well, domestic exports will rise and the supply curve of foreign exchange shifts outward. On balance, the domestic currency may or may not depreciate. What happens will depend on whether exports are growing faster than imports. In general, other things remaining equal, a country whose aggregate demand grows faster than the rest of the world's normally finds its currency depreciating because its imports grow faster than its exports. Its demand curve for foreign currency shifts faster than its supply curve.

Exchange Rates in the Long Run: The Purchasing Power Parity (PPP) theory is used to make long-run predictions about exchange rates in a flexible exchange rate system. According to the theory, as long as there are no barriers to trade like tariffs (taxes on trade) and quotas (quantitative limits on imports), exchange rates should eventually adjust so that the same product costs the same whether measured in rupees in India, or dollars in the US, yen in Japan and so on, except for differences in transportation. Over the long run, therefore, exchange rates between any two national currencies adjust to reflect differences in the price levels in the two countries.

EXAMPLE 6.1

If a shirt costs \$8 in the US and Rs 400 in India, the rupee-dollar exchange rate should be Rs 50. To see why, at any rate higher than Rs 50, say Rs 60, it costs Rs 480 per shirt in the US but only Rs 400 in India. In that case, all foreign customers would buy shirts from India. Similarly, any exchange rate below Rs 50 per dollar will send all the shirt business to the US. Next, we suppose that prices in India rise by 20 per cent while prices in the US rise by 50 per cent. Indian shirts would now cost Rs 480 per shirt while American shirts cost \$12 per shirt. For these two prices to be equivalent, \$12 must be worth Rs 480, or one dollar must be worth Rs 40. The dollar, therefore, has depreciated.

According to the PPP theory, differences in the domestic inflation and foreign inflation are a major cause of adjustment in exchange rates. *If one country has higher inflation than another, its exchange rate should be depreciating.*

However, we note that if American prices rise faster than Indian prices and, at the same time, countries erect tariff barriers to keep Indian shirts out (but not American ones), the dollar may not depreciate. Also, there are many goods that are not tradeable and inflation rates for them will not matter. Further, few goods that different countries produce and trade are uniform or identical. Most economists contend that other factors are more important than relative prices for exchange rate determination in the short run. However, in the long run, purchasing power parity plays an important role.

6.2.3 Fixed Exchange Rates

Countries have had flexible exchange rate system ever since the breakdown of the Bretton Woods system in the early 1970s. Prior to that, most countries had fixed or what is called **pegged exchange rate system**, in which the exchange rate is pegged at a particular level. Sometimes, a distinction is made between the fixed and pegged exchange rates. It is argued that while the former is fixed, the latter is maintained by the monetary authorities, in that the value at which the exchange rate is pegged (the par value) is a policy variable – it may be changed. There is a common element between the two systems. Under a fixed exchange rate system, such as the gold standard, adjustment to BoP surpluses or deficits cannot be brought about through changes in the exchange rate. Adjustment must either come about ‘automatically’ through the workings of the economic system (through the mechanism explained by Hume, given below) or be brought about by the government. A pegged exchange rate system may, as long as the exchange rate is not changed, and is not expected to change, display the same characteristics. However, there is another option open to the government – it may change the exchange rate. A **devaluation** is said to occur when the exchange rate is increased by social action under a pegged exchange rate system. The opposite of devaluation is a **revaluation**. Or, the government may choose to leave the exchange rate unchanged and deal with the BoP problem by the use of monetary and fiscal policy. Most governments change the exchange rate very infrequently. In our analysis, we use the terms fixed and pegged exchange rates interchangeably to denote an exchange rate regime where the exchange rate is set by government decisions and maintained by government actions.

We examine the way in which a country can ‘peg’ or fix the level of its exchange rate. We assume that Reserve bank of India (RBI) wishes to fix an exact par value for the rupee at Rs 45 per dollar (e_1 in Fig. 6.3). Assuming that this official exchange rate is below the equilibrium exchange rate (here $e^* = \text{Rs } 50$) of the flexible exchange rate system, the rupee will be **overvalued** and the dollar **undervalued**. This means that if the exchange rate were market determined, the price of dollars in terms of rupees would have to rise to clear the market. At Rs 45 to a dollar, the rupee is more expensive than it would be at Rs 50 to a dollar (thinking of the rate in dollar-rupee terms, now each rupee costs 2.22 cents instead of 2 cents). At this rate, the demand for dollars is higher than the supply of dollars. Since the demand and supply schedules were constructed from the BoP accounts (measuring only autonomous transactions), this excess demand implies a deficit in the BoP. The deficit is bridged by central bank intervention. In this case, the RBI would sell dollars for rupees in the foreign exchange market to meet this excess demand AB, thus neutralising the upward pressure on the exchange rate. The RBI stands ready to buy and sell dollars at that rate to prevent the exchange

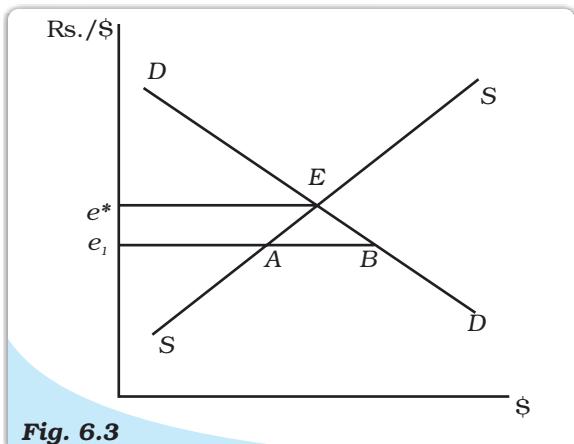


Fig. 6.3

Foreign Exchange Market with Pegged Exchange Rate

rate from rising (since no one would buy at more) or falling (since no one would sell for less).

Now the RBI might decide to fix the exchange rate at a higher level – Rs 47 per dollar – to bridge part of the deficit in BoP. This devaluation of the domestic currency would make imports expensive and our exports cheaper, leading to a narrowing of the trade deficit. It is important to note that repeated central bank intervention to finance deficits and keep the exchange rate fixed will eventually exhaust the official reserves. This is the main flaw in the system of fixed exchange rates. Once speculators believe that the exchange rate cannot be held for long they would buy foreign exchange (say, dollars) in massive amounts. The demand for dollars will rise sharply causing a BoP deficit. Without sufficient reserves, the central bank will have to allow the exchange rate to reach its equilibrium level. This might amount to an even larger devaluation than would have been required before the speculative ‘attack’ on the domestic currency began.

International experience shows that it is precisely this that has led many countries to abandon the system of fixed exchange rates. Fear of such an attack induced the US to let its currency float in 1971, one of the major events which precipitated the breakdown of the Bretton Woods system.

6.2.4 Managed Floating

Without any formal international agreement, the world has moved on to what can be best described as a **managed floating** exchange rate system. It is a mixture of a flexible exchange rate system (the float part) and a fixed rate system (the managed part). Under this system, also called **dirty floating**, central banks intervene to buy and sell foreign currencies in an attempt to moderate exchange rate movements whenever they feel that such actions are appropriate. Official reserve transactions are, therefore, not equal to zero.

6.2.5 Exchange Rate Management: The International Experience

The Gold Standard: From around 1870 to the outbreak of the First World War in 1914, the prevailing system was the gold standard which was the epitome of the **fixed exchange rate system**. All currencies were defined in terms of gold; indeed some were actually made of gold. Each participant country committed to guarantee the free convertibility of its currency into gold at a fixed price. This meant that residents had, at their disposal, a domestic currency which was freely convertible at a fixed price into another asset (gold) acceptable in international payments. This also made it possible for each currency to be convertible into all others at a fixed price. Exchange rates were determined by its worth in terms of gold (where the currency was made of gold, its actual gold content). For example, if one unit of say currency A was worth one gram of gold, one unit of currency B was worth two grams of gold, currency B would be worth twice as much as currency A. Economic agents could directly convert one unit of currency B into two units of currency A, without having to first buy gold and then sell it. The rates would fluctuate between an upper and a lower limit, these limits being set by the costs of melting, shipping and recoining between the two Currencies³. To maintain the official parity each country needed an adequate stock of gold reserves. All countries on the gold standard had stable exchange rates.

³If the difference in the rates were more than those transaction costs, profits could be made through arbitrage, the process of buying a currency cheap and selling it dear.

The question arose – would not a country lose all its stock of gold if it imported too much (and had a BoP deficit)? The mercantilist⁴ explanation was that unless the state intervened, through tariffs or quotas or subsidies, on exports, a country would lose its gold and that was considered one of the worst tragedies. David Hume, a noted philosopher writing in 1752, refuted this view and pointed out that if the stock of gold went down, all prices and costs would fall commensurately and no one in the country would be worse off. Also, with cheaper goods at home, imports would fall and exports rise (it is the real exchange rate which will determine competitiveness). The country from which we were importing and making payments in gold would face an increase in prices and costs, so their now expensive exports would fall and their imports of the first country's now cheap goods would go up. The result of this price-specie-flow (precious metals were referred to as 'specie' in the eighteenth century) mechanism is normally to improve the BoP of the country losing gold, and worsen that of the country with the favourable trade balance, until equilibrium in international trade is re-established at relative prices that keep imports and exports in balance with no further net gold flow. The equilibrium is stable and self-correcting, requiring no tariffs and state action. Thus, fixed exchange rates were maintained by an automatic equilibrating mechanism.

Several crises caused the gold standard to break down periodically. Moreover, world price levels were at the mercy of gold discoveries. This can be explained by looking at the crude Quantity Theory of Money, $M = kPY$, according to which, if output (GNP) increased at the rate of 4 per cent per year, the gold supply would have to increase by 4 per cent per year to keep prices stable. With mines not producing this much gold, price levels were falling all over the world in the late nineteenth century, giving rise to social unrest. For a period, silver supplemented gold introducing 'bimetallism'. Also, **fractional reserve banking** helped to economise on gold. Paper currency was not entirely backed by gold; typically countries held one-fourth gold against its paper currency. Another way of economising on gold was the **gold exchange standard** which was adopted by many countries which kept their money exchangeable at fixed prices with respect to gold but held little or no gold. Instead of gold, they held the currency of some large country (the United States or the United Kingdom) which was on the gold standard. All these and the discovery of gold in Klondike and South Africa helped keep deflation at bay till 1929. Some economic historians attribute the Great Depression to this shortage of liquidity. During 1914-45, there was no maintained universal system but this period saw both a brief return to the gold standard and a period of flexible exchange rates.

The Bretton Woods System: The Bretton Woods Conference held in 1944 set up the International Monetary Fund (IMF) and the World Bank and reestablished a system of fixed exchange rates. This was different from the international gold standard in the choice of the asset in which national currencies would be convertible. A two-tier system of convertibility was established at the centre of which was the dollar. The US monetary authorities guaranteed the convertibility of the dollar into gold at the fixed price of \$35 per ounce of gold. The second-tier of the system was the commitment of monetary authority of each IMF member participating in the system to convert their currency into dollars at a fixed price. The latter was called the official exchange rate. For instance, if French francs

⁴Mercantilist thought was associated with the rise of the nation-state in Europe during the sixteenth and seventeenth centuries.

could be exchanged for dollars at roughly 5 francs per dollar, the dollars could then be exchanged for gold at \$35 per ounce, which fixed the value of the franc at 175 francs per ounce of gold (5 francs per dollar times 35 dollars per ounce). A change in exchange rates was to be permitted only in case of a ‘fundamental disequilibrium’ in a nation’s BoP – which came to mean a chronic deficit in the BoP of sizeable proportions.

Such an elaborate system of convertibility was necessary because the distribution of gold reserves across countries was uneven with the US having almost 70 per cent of the official world gold reserves. Thus, a credible gold convertibility of the other currencies would have required a massive redistribution of the gold stock. Further, it was believed that the existing gold stock would be insufficient to sustain the growing demand for international liquidity. One way to save on gold, then, was a two-tier convertible system, where the key currency would be convertible into gold and the other currencies into the key currency.

In the post-World War II scenario, countries devastated by the war needed enormous resources for reconstruction. Imports went up and their deficits were financed by drawing down their reserves. At that time, the US dollar was the main component in the currency reserves of the rest of the world, and those reserves had been expanding as a consequence of the US running a continued balance of payments deficit (other countries were willing to hold those dollars as a reserve asset because they were committed to maintain convertibility between their currency and the dollar).

The problem was that if the short-run dollar liabilities of the US continued to increase in relation to its holdings of gold, then the belief in the credibility of the US commitment to convert dollars into gold at the fixed price would be eroded. The central banks would thus have an overwhelming incentive to convert the existing dollar holdings into gold, and that would, in turn, force the US to give up its commitment. This was the Triffin Dilemma after Robert Triffin, the main critic of the Bretton Woods system. Triffin suggested that the IMF should be turned into a ‘deposit bank’ for central banks and a new ‘reserve asset’ be created under the control of the IMF. In 1967, gold was displaced by creating the Special Drawing Rights (SDRs), also known as ‘paper gold’, in the IMF with the intention of increasing the stock of international reserves. Originally defined in terms of gold, with 35 SDRs being equal to one ounce of gold (the dollar-gold rate of the Bretton Woods system), it has been redefined several times since 1974. At present, it is calculated daily as the weighted sum of the values in dollars of four currencies (euro, dollar, Japanese yen, pound sterling) of the five countries (France, Germany, Japan, the UK and the US). It derives its strength from IMF members being willing to use it as a reserve currency and use it as a means of payment between central banks to exchange for national currencies. The original installments of SDRs were distributed to member countries according to their quota in the Fund (the quota was broadly related to the country’s economic importance as indicated by the value of its international trade).

The breakdown of the Bretton Woods system was preceded by many events, such as the devaluation of the pound in 1967, flight from dollars to gold in 1968 leading to the creation of a two-tiered gold market (with the official rate at \$35 per ounce and the private rate market determined), and finally in August 1971, the British demand that US guarantee the gold value of its dollar holdings. This led to the US decision to give up the link between the dollar and gold.

The 'Smithsonian Agreement' in 1971, which widened the permissible band of movements of the exchange rates to 2.5 per cent above or below the new 'central rates' with the hope of reducing pressure on deficit countries, lasted only 14 months. The developed market economies, led by the United Kingdom and soon followed by Switzerland and then Japan, began to adopt floating exchange rates in the early 1970s. In 1976, revision of IMF Articles allowed countries to choose whether to float their currencies or to peg them (to a single currency, a basket of currencies, or to the SDR). There are no rules governing pegged rates and no *de facto* supervision of floating exchange rates.

The Current Scenario: Many countries currently have fixed exchange rates. Some countries peg their currency to the dollar. The creation of the European Monetary Union in January, 1999, involved permanently fixing the exchange rates between the currencies of the members of the Union and the introduction of a new common currency, the Euro, under the management of the European Central Bank. From January, 2002, actual notes and coins were introduced. So far, 12 of the 25 members of the European Union have adopted the euro. Some countries pegged their currency to the French franc; most of these are former French colonies in Africa. Others peg to a basket of currencies, with the weights reflecting the composition of their trade. Often smaller countries also decide to fix their exchange rates relative to an important trading partner. Argentina, for example, adopted the **currency board** system in 1991. Under this, the exchange rate between the local currency (the peso) and the dollar was fixed by law. The central bank held enough foreign currency to back all the domestic currency and reserves it had issued. In such an arrangement, the country cannot expand the money supply at will. Also, if there is a domestic banking crisis (when banks need to borrow domestic currency) the central bank can no longer act as a lender of last resort. However, following a crisis, Argentina abandoned the currency board and let its currency float in January 2002.

Another arrangement adopted by Ecuador in 2000 was dollarisation when it abandoned the domestic currency and adopted the US dollar. All prices are quoted in dollar terms and the local currency is no longer used in transactions. Although uncertainty and risk can be avoided, Ecuador has given the control over its money supply to the Central Bank of the US – the Federal Reserve – which will now be based on economic conditions in the US.

On the whole, the international system is now characterised by a multiple of regimes. Most exchange rates change slightly on a day-to-day basis, and market forces generally determine the basic trends. Even those advocating greater fixity in exchange rates generally propose certain ranges within which governments should keep rates, rather than literally fix them. Also, there has been a virtual elimination of the role for gold. Instead, there is a free market in gold in which the price of gold is determined by its demand and supply coming mainly from jewellers, industrial users, dentists, speculators and ordinary citizens who view gold as a good store of value.

6.3 THE DETERMINATION OF INCOME IN AN OPEN ECONOMY

With consumers and firms having an option to buy goods produced at home and abroad, we now need to distinguish between domestic demand for goods and the demand for domestic goods.



6.3.1 National Income Identity for an Open Economy

In a closed economy, there are three sources of demand for domestic goods—Consumption (C), government spending (G), and domestic investment (I). We can write

$$Y = C + I + G \quad (6.2)$$

In an open economy, exports (X) constitute an additional source of demand for domestic goods and services that comes from abroad and therefore must be added to aggregate demand. Imports (M) supplement supplies in domestic markets and constitute that part of domestic demand that falls on foreign goods and services. Therefore, the national income identity for an open economy is

$$Y + M = C + I + G + X \quad (6.3)$$

Rearranging, we get

$$Y = C + I + G + X - M \quad (6.4)$$

or

$$Y = C + I + G + NX \quad (6.5)$$

where, NX is **net exports** (exports – imports). A positive NX (with exports greater than imports) implies a trade surplus and a negative NX (with imports exceeding exports) implies a trade deficit.

To examine the roles of imports and exports in determining equilibrium income in an open economy, we follow the same procedure as we did for the closed economy case—we take investment and government spending as autonomous. In addition, we need to specify the determinants of imports and exports. The demand for imports depends on domestic income (Y) and the real exchange rate (R). Higher income leads to higher imports. Recall that the real exchange rate is defined as the relative price of foreign goods in terms of domestic goods. A higher R makes foreign goods relatively more expensive, thereby leading to a decrease in the quantity of imports. Thus, imports depend positively on Y and negatively on R . The export of one country is, by definition, the import of another. Thus, our exports would constitute foreign imports. It would depend on foreign income, Y_f , and on R . A rise in Y_f will increase foreign demand for our goods, thus leading to higher exports. An increase in R , which makes domestic goods cheaper, will increase our exports. Exports depend positively on foreign income and the real exchange rate. Thus, exports and imports depend on domestic income, foreign income and the real exchange rate. We assume price levels and the nominal exchange rate to be constant, hence R will be fixed. From the point of view of our country, foreign income, and therefore exports, are considered exogenous ($X = \bar{X}$).

The demand for imports is thus assumed to depend on income and have an autonomous component

$$M = \bar{M} + mY, \text{ where } \bar{M} > 0 \text{ is the autonomous component, } 0 < m < 1. \quad (6.6)$$

Here m is the **marginal propensity to import**, the fraction of an extra rupee of income spent on imports, a concept analogous to the marginal propensity to consume.

The equilibrium income would be

$$Y = \bar{C} + c(Y - T) + \bar{I} + \bar{G} + \bar{X} - \bar{M} - mY \quad (6.7)$$

Taking all the autonomous components together as \bar{A} , we get

$$Y = \bar{A} + cY - mY \quad (6.8)$$

or,

$$(1 - c + m)Y = \bar{A} \quad (6.9)$$

or,

$$Y^* = \frac{1}{1 - c + m} \bar{A} \quad (6.10)$$

In order to examine the effects of allowing for foreign trade in the income-expenditure framework, we need to compare equation (6.10) with the equivalent expression for the equilibrium income in a closed economy model. In both equations, equilibrium income is expressed as a product of two terms, the autonomous expenditure multiplier and the level of autonomous expenditures. We consider how each of these change in the open economy context.

Since m , the marginal propensity to import, is greater than zero, we get a smaller multiplier in an open economy. It is given by

$$\text{The open economy multiplier} = \frac{\Delta Y}{\Delta \bar{A}} = \frac{1}{1 - c + m} \quad (6.11)$$

EXAMPLE 6.2

If $c = 0.8$ and $m = 0.3$, we would have the open and closed economy multiplier respectively as

$$\frac{1}{1 - c} = \frac{1}{1 - 0.8} = \frac{1}{0.2} = 5 \quad (6.12)$$

and

$$\frac{1}{1 - c + m} = \frac{1}{1 - 0.8 + 0.3} = \frac{1}{0.5} = 2 \quad (6.13)$$

If domestic autonomous demand increases by 100, in a closed economy output increases by 500 whereas it increases by only 200 in an open economy.

The fall in the value of the autonomous expenditure multiplier with the opening up of the economy can be explained with reference to our previous discussion of the multiplier process (Chapter 4). A change in autonomous expenditures, for instance a change in government spending, will have a direct effect on income and an induced effect on consumption with a further effect on income. With an mpc greater than zero, a proportion of the induced effect on consumption will be a demand for foreign, not domestic goods. Therefore, the induced effect on demand for domestic goods, and hence on domestic income, will be smaller. The increase in imports per unit of income constitutes an additional leakage from the circular flow of domestic income at each round of the multiplier process and reduces the value of the autonomous expenditure multiplier.

The second term in equation (6.10) shows that, in addition to the elements for a closed economy, autonomous expenditure for an open economy includes the level of exports and the autonomous component of imports. Thus, the changes in their levels are additional shocks that will change equilibrium income. From equation (6.10) we can compute the multiplier effects of changes in \bar{X} and \bar{M} .

$$\frac{\Delta Y^*}{\Delta \bar{X}} = \frac{1}{1 - c + m} \quad (6.14)$$

$$\frac{\Delta Y^*}{\Delta \bar{M}} = \frac{-1}{1 - c + m} \quad (6.15)$$

An increase in demand for our exports is an increase in aggregate demand for domestically produced output and will increase demand just as would an

increase in government spending or an autonomous increase in investment. In contrast, an autonomous rise in import demand is seen to cause a fall in demand for domestic output and causes equilibrium income to decline.

6.3.2 Equilibrium Output and the Trade Balance

We shall provide a diagrammatic explanation of the above mechanisms and, in addition, their impact on the trade balance. Net exports, ($NX = X - M$), as we saw earlier, depend on Y , Y_f and R . A rise in Y raises import spending and leads to trade deficit (if initially we had trade balance, $NX = 0$). A rise in Y_f , other things being equal, raises our exports, creates a trade surplus and raises aggregate income. A real depreciation would raise exports and reduce imports, thus increasing our net exports.

In the upper panel of Fig. 6.4, the line AD plots domestic demand, $C + I + G$, as a function of income (the familiar closed economy relation of Chapter 5). Under our standard assumptions, its slope is positive but less than one. To get the demand for domestic goods, we first subtract imports obtaining the line AA . The distance between AD and AA is equal to the value of imports, M . Because the quantity of imports increases with income, the distance between the two lines increases with income. AA is flatter than AD because as income increases, some of the additional domestic demand falls on foreign goods. Thus, with an increase in income, the domestic demand for domestic goods increases less than total domestic demand. Second, we add exports and get the line DD , which is above AA . The distance between DD and AA is equal to exports and remains constant because exports do not depend on domestic income (the two lines are parallel). Now, the open economy aggregate demand curve, DD , is flatter than the closed economy one (because AA is flatter than AD).

In lower panel of Fig. 6.4, we examine the behaviour of net exports, NX , as a function of income. For example, at income level Y , exports are given by the distance AC and imports by the distance AB , so that net exports are given by the distance BC .

Net exports are a decreasing function of domestic income. As income increases, imports increase and exports are unaffected leading to lower net exports. At Y_{tb} (' t ' for trade balance), the level of income at which the value of

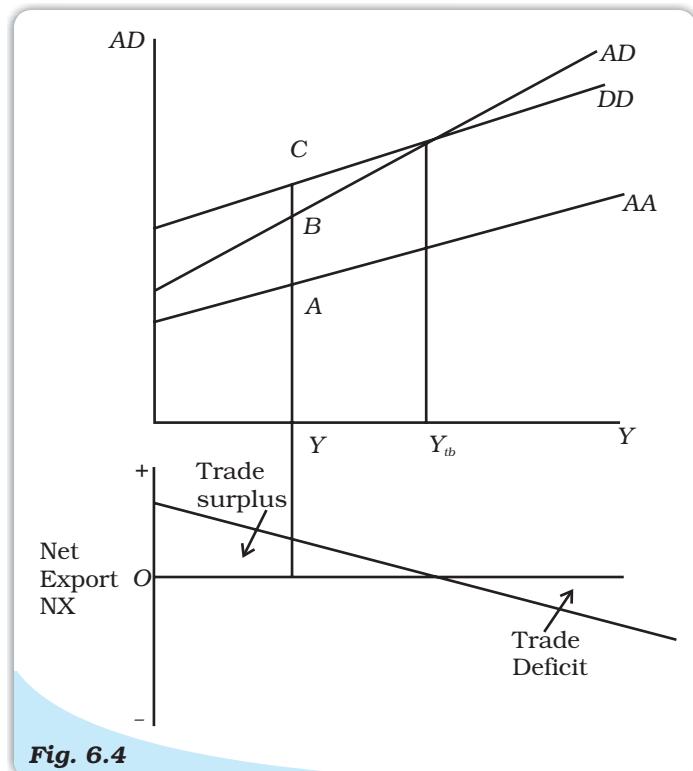


Fig. 6.4

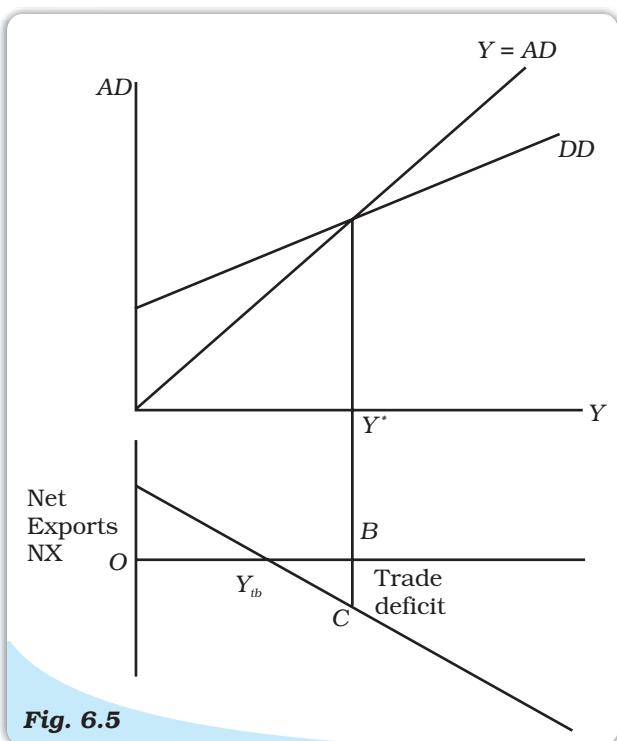
Aggregate Demand in an Open Economy and the net Export Schedule

imports is just equal to exports, net exports are equal to zero. Levels of income above Y_{tb} lead to higher imports, and thus a trade deficit. Levels of income below Y_{tb} lead to lower imports, and thus to a trade surplus.

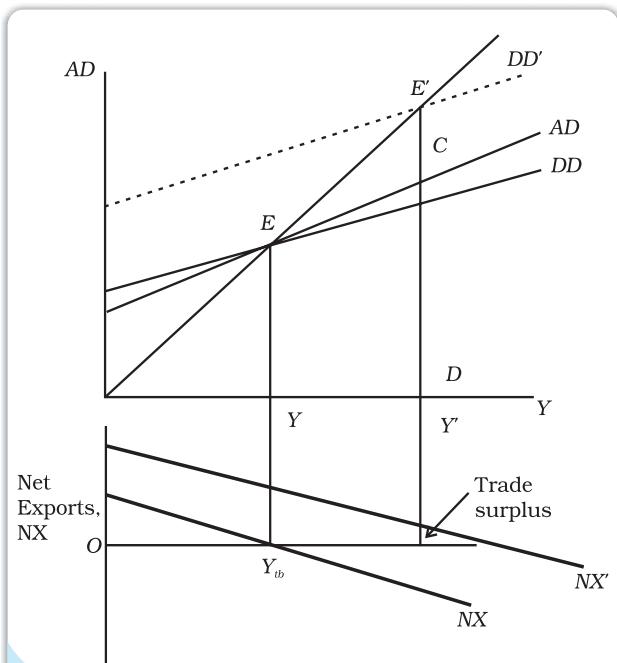
The goods market is in equilibrium when the supply of domestic output is equal to the demand for domestic output, at point E in Fig. 6.5 at the intersection of the line DD with the 45-degree line. There is no reason for the equilibrium level of output, Y^* , to be the same as the level of output at which trade is balanced, Y_{tb} . In Fig. 6.5, equilibrium output is associated with a trade deficit equal to the distance BC .

To examine the effects of an increase in autonomous expenditure (say, G), we assume a situation when, at the equilibrium level of income, Y , trade is balanced, so that Y and Y_{tb} are the same. If the government increases spending, as shown in Fig. 6.6, the aggregate demand line moves up from DD to DD' , and equilibrium moves up from E to E' and income increases from Y to Y' . The NX schedule as a function of output does not shift as G does not enter the X or M relation directly. The increase in output is clearly larger than the increase in G , there is a multiplier effect. This is similar to the closed economy case, only that the multiplier is smaller. The DD curve is flatter than the closed economy AD curve.

However, the increase in output from Y to Y' leads to a trade deficit equal to BC . The trade deficit and the smaller multiplier both arise from the same cause – an increase in demand now falls not only on



Equilibrium Income and Net Exports



Effect of Higher Government Spending

domestic goods but also on foreign goods. This, as explained earlier, leads to a smaller multiplier. And because some of the increase falls on imports and exports remain unchanged, the result is a trade deficit.

These two implications are important. The more open the economy, the smaller the effect on income and the larger the adverse effect on the trade balance. For example, suppose a country has a ratio of imports to GDP of around 70 per cent. This implies that when demand increases, roughly 70 per cent of this increased demand goes to higher imports and only 30 per cent to an increase in demand for domestic goods. An increase in G is thus likely to result in a large increase in the country's trade deficit and a small increase in output and income, making domestic demand expansion an unattractive policy for the country.

Interdependent Incomes – Increase in Foreign Demand: We have so far assumed that foreign income, prices and exchange rate remain unchanged. First, we consider an increase in foreign income, Y_f , keeping prices and the exchange rate fixed. The initial demand for domestic goods is given by DD in Fig. 6.7. The equilibrium is at point E , with output level Y . We assume that initially trade is balanced so that net exports associated with Y are equal to zero.

As was explained in Fig. 6.4., the line AD is steeper than DD , the difference is equal to net exports so that if trade is balanced at E , DD intersects AD at E . The direct effect of an increase in Y_f is to increase exports. For a given level of domestic income, this increases demand for domestic goods so that DD shifts up to DD' . As exports increase at a given level of income the net exports line also increases to NX' . The new equilibrium is at point E' , with net output level Y' . The increase in Y_f leads to an increase in domestic income through the multiplier.

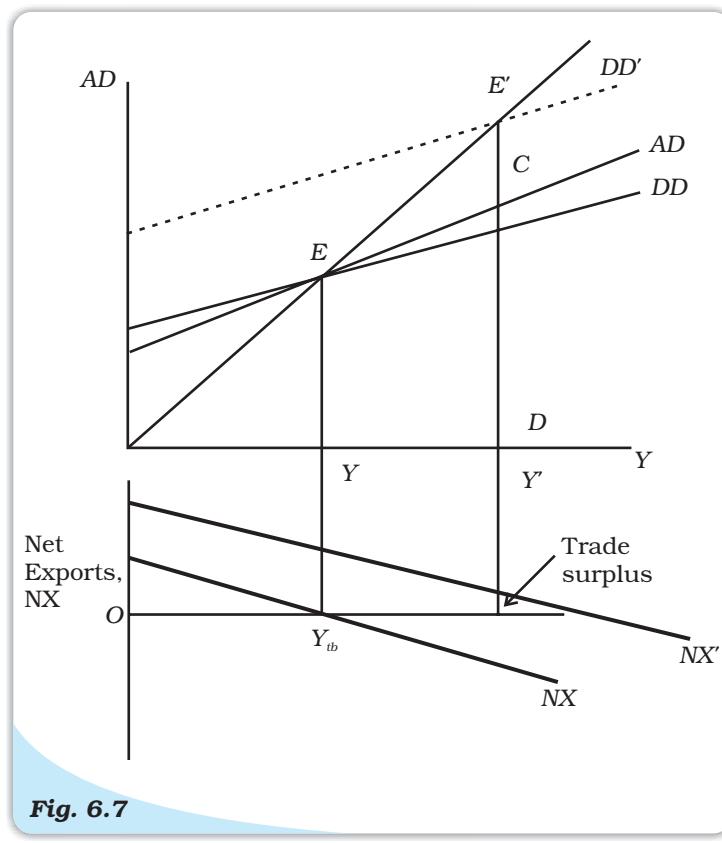


Fig. 6.7

The Effects of Higher Foreign Demand

What happens to the trade balance? If the increase in Y leads to a large increase in imports, the trade balance could deteriorate. But it does not. At the new level of income, domestic demand is given by DE' . Net exports are thus given by CE' – which, because AD is necessarily below DD' , is necessarily positive. Thus, while imports increase, they do not offset the increase in exports, and there is a trade surplus. Conversely, a recession abroad would reduce domestic exports and cause a trade deficit. Thus, booms and recessions in one country tend to be transmitted to other countries through international trade in goods and services.

Change in Prices: Next we consider the effects of changes in prices, assuming the exchange rate to be fixed. If prices of domestic products fall, while say foreign prices remain constant, domestic exports will rise, adding to aggregate demand, and hence will raise our output and income. Analogously, a rise in prices of a country's exports will decrease that country's net exports and output and income. Similarly, a price increase abroad will make foreign products more expensive and hence again raise net exports and domestic output and income. Price decreases abroad have the opposite effects.

Exchange Rate Changes: Changes in nominal exchange rates would change the real exchange rate and hence international relative prices. A depreciation of the rupee will raise the cost of buying foreign goods and make domestic goods less costly. This will raise net exports and therefore increase aggregate demand. Conversely, a currency appreciation would reduce net exports and, therefore, decrease aggregate demand. However, we must note that international trade patterns take time to respond to changes in exchange rates. A considerable period of time may elapse before any improvement in net exports is apparent.

6.4 TRADE DEFICITS, SAVINGS AND INVESTMENT

The question arises – are trade deficits a cause for alarm? We note that an essential difference between a closed economy and an open economy is that while in a closed economy saving and investment must always be equal, in an open economy, they can differ. From equation (6.5) we get

$$Y - C - G = I + NX \quad (6.16)$$

or

$$S = I + NX \quad (6.17)$$

We distinguish between private saving, S^P , (that part of disposable income that is saved rather than consumed — $Y - T - C$) and government saving, S^G , (government's 'income', its net tax revenue minus its 'consumption', government purchases, $T - G$). The two together add up to national saving

$$S = Y - C - G = (Y - T - C) + (T - G) = S^P + S^G \quad (6.18)$$

Thus, from (6.16) and (6.17), we get

$$S = S^P + S^G = I + NX$$

or

$$NX = (S^P - I) + S^G = (S^P - I) + (T - G) \quad (6.19)$$

Summary

When a country runs a trade deficit⁵, it is important to look at the right side of equation (6.18) to see whether there has been a decrease in saving, increase in investment, or an increase in the budget deficit. There is reason to worry about a country's long-run prospects if the trade deficit reflects smaller saving or a larger budget deficit (when the economy has both trade deficit and budget deficit, it is said to be facing twin deficits). The deficit could reflect higher private or government consumption. In such cases, the country's capital stock will not rise rapidly enough to yield enough growth (called the 'growth dividend') it needs to repay its debt. There is less cause to worry if the trade deficit reflects a rise in investment, which will build the capital stock more quickly and increase future output. However, we must note that since private saving, investment and the trade deficit are jointly determined, other factors too must be taken into account.

⁵Here, to simplify the analysis, we take trade balance to be synonymous with the current account balance, ignoring invisibles and transfer payments. As Table 6.1 shows, invisibles can help bridge the trade deficit in an important way.

1. Openness in product and financial markets allows a choice between domestic and foreign goods and between domestic and foreign assets.
2. The BOP records a country's transactions with the rest of the world.
3. The current account balance is the sum of the balance of merchandise trade, services and net transfers received from the rest of the world. The capital account balance is equal to capital flows from the rest of the world, minus capital flows to the rest of the world.
4. A current account deficit is financed by net capital flows from the rest of the world, thus by a capital account surplus.
5. The nominal exchange rate is the price of one unit of foreign currency in terms of domestic currency.
6. The real exchange rate is the relative price of foreign goods in terms of domestic goods. It is equal to the nominal exchange rate times the foreign price level divided by the domestic price level. It measures the international competitiveness of a country in international trade. When the real exchange rate is equal to one, the two countries are said to be in purchasing power parity.
7. The epitome of the fixed exchange rate system was the gold standard in which each participant country committed itself to convert freely its currency into gold at a fixed price. The pegged exchange rate is a policy variable and may be changed by official action (devaluation).
8. Under clean floating, the exchange rate is market-determined without any central bank intervention. In case of managed floating, central banks intervene to reduce fluctuations in the exchange rate.
9. In an open economy, the demand for domestic goods is equal to the domestic demand for goods (consumption, investment and government spending) plus exports minus imports.
10. The open economy multiplier is smaller than that in a closed economy because a part of domestic demand falls on foreign goods. An increase in autonomous demand thus leads to a smaller increase in output compared to a closed economy. It also results in a deterioration of the trade balance.
11. An increase in foreign income leads to increased exports and increases domestic output. It also improves the trade balance.
12. Trade deficits need not be alarming if the country invests the borrowed funds yielding a rate of growth higher than the interest rate.

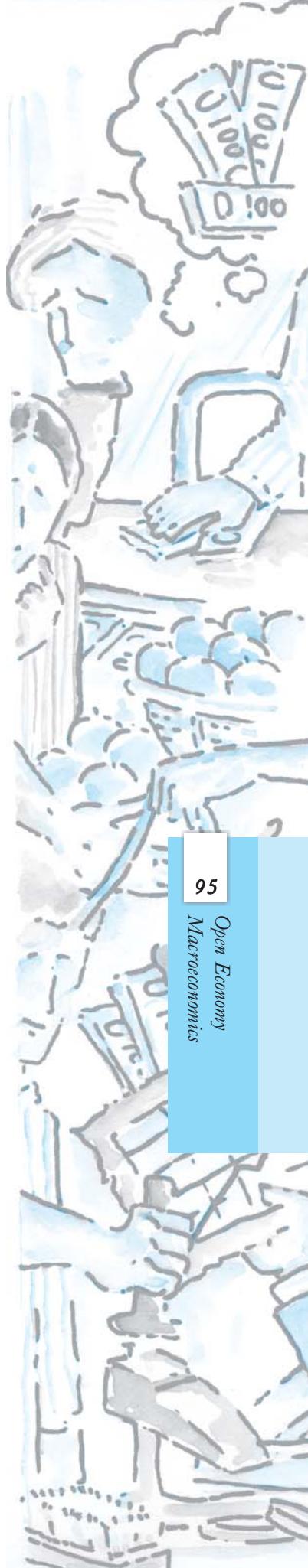
Open economy
Current account deficit
Autonomous and accommodating transactions
Purchasing power parity
Depreciation
Fixed exchange rate
Managed floating
Marginal propensity to import
Open economy multiplier

Balance of payments
Official reserve transactions
Nominal and real exchange rate
Flexible exchange rate
Interest rate differential
Devaluation
Demand for domestic goods
Net exports

Box 6.1: Exchange Rate Management: The Indian Experience

India's exchange rate policy has evolved in line with international and domestic developments. Post-independence, in view of the prevailing Bretton Woods system, the Indian rupee was pegged to the pound sterling due to its historic links with Britain. A major development was the devaluation of the rupee by 36.5 per cent in June, 1966. With the breakdown of the Bretton Woods system, and also the declining share of UK in India's trade, the rupee was delinked from the pound sterling in September 1975. During the period between 1975 to 1992, the exchange rate of the rupee was officially determined by the Reserve Bank within a nominal band of plus or minus 5 per cent of the weighted basket of currencies of India's major trading partners. The Reserve Bank intervened on a day-to-day basis which resulted in wide changes in the size of reserves. The exchange rate regime of this period can be described as an adjustable nominal peg with a band.

The beginning of 1990s saw significant rise in oil prices and suspension of remittances from the Gulf region in the wake of the Gulf crisis. This, and other domestic and international developments, led to severe balance of payments problems in India. The drying up of access to commercial banks and short-term credit made financing the current account deficit difficult. India's foreign currency reserves fell rapidly from US \$ 3.1 billion in August to US \$ 975 million on July 12, 1991 (we may contrast this with the present; as of January 27, 2006, India's foreign exchange reserves stand at US \$ 139.2 billion). Apart from measures like sending gold abroad, curtailing non-essential imports, approaching the IMF and multilateral and bilateral sources, introducing stabilisation and structural reforms, there was a two-step devaluation of 18–19 per cent of the rupee on July 1 and 3, 1991. In March 1992, the Liberalised Exchange Rate Management System (LERMS) involving dual exchange rates was introduced. Under this system, 40 per cent of exchange earnings had to be surrendered at an official rate determined by the Reserve Bank and 60 per cent was to be converted at the market-determined rates. The dual rates were converged into one from March 1, 1993; this was an important step towards current account convertibility, which was finally achieved in August 1994 by accepting Article VIII of the Articles of Agreement of the IMF. The exchange rate of the rupee thus became market determined, with the Reserve Bank ensuring orderly conditions in the foreign exchange market through its sales and purchases.



Exercises

1. Differentiate between balance of trade and current account balance.
2. What are official reserve transactions? Explain their importance in the balance of payments.
3. Distinguish between the nominal exchange rate and the real exchange rate. If you were to decide whether to buy domestic goods or foreign goods, which rate would be more relevant? Explain.
4. Suppose it takes 1.25 yen to buy a rupee, and the price level in Japan is 3 and the price level in India is 1.2. Calculate the real exchange rate between India and Japan (the price of Japanese goods in terms of Indian goods). (**Hint:** First find out the nominal exchange rate as a price of yen in rupees).
5. Explain the automatic mechanism by which BoP equilibrium was achieved under the gold standard.
6. How is the exchange rate determined under a flexible exchange rate regime?
7. Differentiate between devaluation and depreciation.
8. Would the central bank need to intervene in a managed floating system? Explain why.
9. Are the concepts of demand for domestic goods and domestic demand for goods the same?
10. What is the marginal propensity to import when $M = 60 + 0.06Y$? What is the relationship between the marginal propensity to import and the aggregate demand function?
11. Why is the open economy autonomous expenditure multiplier smaller than the closed economy one?
12. Calculate the open economy multiplier with proportional taxes, $T = tY$, instead of lump-sum taxes as assumed in the text.
13. Suppose $C = 40 + 0.8YD$, $T = 50$, $I = 60$, $G = 40$, $X = 90$, $M = 50 + 0.05Y$ (a) Find equilibrium income. (b) Find the net export balance at equilibrium income (c) What happens to equilibrium income and the net export balance when the government purchases increase from 40 and 50?
14. In the above example, if exports change to $X = 100$, find the change in equilibrium income and the net export balance.
15. Explain why $G - T = (S^g - I) - (X - M)$.
16. If inflation is higher in country A than in Country B, and the exchange rate between the two countries is fixed, what is likely to happen to the trade balance between the two countries?
17. Should a current account deficit be a cause for alarm? Explain.
18. Suppose $C = 100 + 0.75YD$, $I = 500$, $G = 750$, taxes are 20 per cent of income, $X = 150$, $M = 100 + 0.2Y$. Calculate equilibrium income, the budget deficit or surplus and the trade deficit or surplus.
19. Discuss some of the exchange rate arrangements that countries have entered into to bring about stability in their external accounts.

Suggested Readings

1. Dornbusch, R. and S. Fischer, 1994. *Macroeconomics*, sixth edition, McGraw-Hill, Paris.
2. *Economic Survey*, Government of India, 2006-07.
3. Krugman, P.R. and M. Obstfeld, 2000. *International Economics, Theory and Policy*, fifth edition, Pearson Education.

Table 6.1: Balance of Payments : Summary # (in US \$ million)

	1990 -91	1989 -99	2000 -01	2001 -02	2002 -03	2003 -04
1. Exports	18,477	34,298	45,452	44,703	53,774	66,285
2. Imports	27,915	47,544	57,912	56,277	64,464	80,003
of which POL	6,028	6,399	15,650	14,000	17,640	20,569
3. Trade balance	-9,438	-13,246	-12,460	-11,574	-10,690	-13,718
4. Invisibles (net)	-242	9,208	9,794	14,974	17,035	27,801
Non-factor services	980	2,165	1,692	3,324	3,643	10,144
Income	-3,752	-3,544	-5,004	-4,206	-3,446	-4,505
Pvt. transfers	2,069	10,280	12,854	15,398	16,387	21,608
Official transfers	461	307	252	458	451	554
5. Current Account Balance	-9,680	-4,038	-2,666	3,400	6,345	14,083
6. External assistance (net)	2,204	799	410	1,117	-3,128	-2,858
7. Commercial borrowings (net)	2,254	4,367	4,303	-1,585	-1,692	-2,925
8. IMF (net)	1,214	-393	-26	0	0	0
9. NR deposits (net)	1,536	961	2,316	2,754	2,978	3,642
10. Rupee debt service	-1,192	-802	-617	-519	-474	-376
11. Foreign investment (net) of which	101	2,312	5,862	6,686	4,161	13,744
(i) FDI(net)	96	2,380	3,272	4,734	3,217	2,388
(ii) FIIs	0	-390	1,847	1,505	377	10,918
(iii) Euro equities & others	5	322	743	447	567	438
12. Other flows (net)+	2,284	623	-3,739	-96	8,795	6,111
13. Capital account total (net)	8,401	7,867	8,509	8,357	10,640	17,338
14. Reserve use (-increase)	1,279	-3,829	-5,842	-11,757	-16,985	-31,421

Source: Economic Survey, 2005-06.

Glossary

Adam Smith (1723 – 1790) Regarded as the father of modern Economics. Author of *Wealth of Nations*.

Aggregate monetary resources Broad money without time deposits of post office savings organisation (M3).

Automatic stabilisers Under certain spending and tax rules, expenditures that automatically increase or taxes that automatically decrease when economic conditions worsen, therefore, stabilising the economy automatically.

Autonomous change A change in the values of variables in a macroeconomic model caused by a factor exogenous to the model.

Autonomous expenditure multiplier The ratio of increase (or decrease) in aggregate output or income to an increase (or decrease) in autonomous spending.

Balance of payments A set of accounts that summarise a country's transactions with the rest of the world.

Balanced budget A budget in which taxes are equal to government spending.

Balanced budget multiplier The change in equilibrium output that results from a unit increase or decrease in both taxes and government spending.

Bank rate The rate of interest payable by commercial banks to RBI if they borrow money from the latter in case of a shortage of reserves.

Barter exchange Exchange of commodities without the mediation of money.

Base year The year whose prices are used to calculate the real GDP.

Bonds A paper bearing the promise of a stream of future monetary returns over a specified period of time. Issued by firms or governments for borrowing money from the public.

Broad money Narrow money + time deposits held by commercial banks and post office savings organisation.

Capital Factor of production which has itself been produced and which is not generally entirely consumed in the production process.

Capital gain/loss Increase or decrease in the value of wealth of a bondholder due to an appreciation or reduction in the price of her bonds in the bond market.

Capital goods Goods which are bought not for meeting immediate need of the consumer but for producing other goods.

Capitalist country or economy A country in which most of the production is carried out by capitalist firms.

Capitalist firms These are firms with the following features (a) private ownership of means of production (b) production for the market (c) sale and purchase of labour at a price which is called the wage rate (d) continuous accumulation of capital.

Cash Reserve Ratio (CRR) The fraction of their deposits which the commercial banks are required to keep with RBI.

Circular flow of income The concept that the aggregate value of goods and services produced in an economy is going around in a circular way. Either as factor payments, or as expenditures on goods and services, or as the value of aggregate production.

Consumer durables Consumption goods which do not get exhausted immediately but last over a period of time are consumer durables.

Consumer Price Index (CPI) Percentage change in the weighted average price level. We take the prices of a given basket of consumption goods.

Consumption goods Goods which are consumed by the ultimate consumers or meet the immediate need of the consumer are called consumption goods. It may include services as well.

Corporate tax Taxes imposed on the income made by the corporations (or private sector firms).

Currency deposit ratio The ratio of money held by the public in currency to that held as deposits in commercial banks.

Deficit financing through central bank borrowing Financing of budget deficit by the government through borrowing money from the central bank. Leads to increase in money supply in an economy and may result in inflation.

Depreciation A decrease in the price of the domestic currency in terms of the foreign currency under floating exchange rates. It corresponds to an increase in the exchange rate.

Depreciation Wear and tear or depletion which capital stock undergoes over a period of time.

Devaluation The decrease in the price of domestic currency under pegged exchange rates through official action.

Double coincidence of wants A situation where two economic agents have complementary demand for each others' surplus production.

Economic agents or units Economic units or economic agents are those individuals or institutions which take economic decisions.

Effective demand principle If the supply of final goods is assumed to be infinitely elastic at constant price over a short period of time, aggregate output is determined solely by the value of aggregate demand. This is called effective demand principle.

Entrepreneurship The task of organising, coordinating and risk-taking during production.

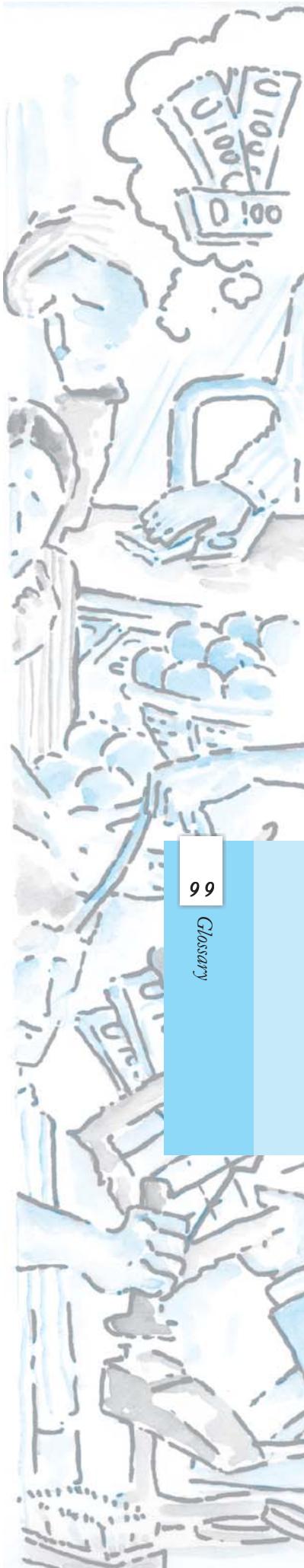
Ex ante consumption The value of planned consumption.

Ex ante investment The value of planned investment.

Ex ante The planned value of a variable as opposed to its actual value.

Ex post The actual or realised value of a variable as opposed to its planned value.

Expenditure method of calculating national income Method of calculating the national income by measuring the aggregate value of final expenditure for the goods and services produced in an economy over a period of time.



Exports Sale of goods and services by the domestic country to the rest of the world.

External sector It refers to the economic transaction of the domestic country with the rest of the world.

Externalities Those benefits or harms accruing to another person, firm or any other entity which occur because some person, firm or any other entity may be involved in an economic activity. If someone is causing benefits or good externality to another, the latter does not pay the former. If someone is inflicting harm or bad externality to another, the former does not compensate the latter.

Fiat money Money with no intrinsic value.

Final goods Those goods which do not undergo any further transformation in the production process.

Firms Economic units which carry out production of goods and services and employ factors of production.

Fiscal policy The policy of the government regarding the level of government spending and transfers and the tax structure.

Fixed exchange rate An exchange rate between the currencies of two or more countries that is fixed at some level and adjusted only infrequently.

Flexible/floating exchange rate An exchange rate determined by the forces of demand and supply in the foreign exchange market without central bank intervention.

Flows Variables which are defined over a period of time.

Foreign exchange Foreign currency, all currencies other than the domestic currency of a given country.

Foreign exchange reserves Foreign assets held by the central bank of the country.

Four factors of production Land, Labour, Capital and Entrepreneurship. Together these help in the production of goods and services.

GDP Deflator Ratio of nominal to real GDP.

Government expenditure multiplier The numerical coefficient showing the size of the increase in output resulting from each unit increase in government spending.

Government The state, which maintains law and order in the country, imposes taxes and fines, makes laws and promotes the economic wellbeing of the citizens.

Great Depression The time period of 1930s (started with the stock market crash in New York in 1929) which saw the output in the developed countries fall and unemployment rise by huge amounts.

Gross Domestic Product (GDP) Aggregate value of goods and services produced within the domestic territory of a country. It includes the replacement investment of the depreciation of capital stock.

Gross fiscal deficit The excess of total government expenditure over revenue receipts and capital receipts that do not create debt.

Gross investment Addition to capital stock which also includes replacement for the wear and tear which the capital stock undergoes.

Gross National Product (GNP) $\text{GDP} + \text{Net Factor Income from Abroad}$. In other words GNP includes the aggregate income made by all citizens of the country, whereas GDP includes incomes by foreigners within the domestic economy and excludes incomes earned by the citizens in a foreign economy.

Gross primary deficit The fiscal deficit minus interest payments.

High powered money Money injected by the monetary authority in the economy. Consists mainly of currency.

Households The families or individuals who supply factors of production to the firms and which buy the goods and services from the firms.

Imports Purchase of goods and services by the domestic country to the rest of the world.

Income method of calculating national income Method of calculating national income by measuring the aggregate value of final factor payments made (= income) in an economy over a period of time.

Interest Payment for services which are provided by capital.

Intermediate goods Goods which are used up during the process of production of other goods.

Inventories The unsold goods, unused raw materials or semi-finished goods which a firm carries from a year to the next.

John Maynard Keynes (1883 – 1946) Arguably the founder of Macroeconomics as a separate discipline.

Labour Human physical effort used in production.

Land Natural resources used in production – either fixed or consumed.

Legal tender Money issued by the monetary authority or the government which cannot be refused by anyone.

Lender of last resort The function of the monetary authority of a country in which it provides guarantee of solvency to commercial banks in a situation of liquidity crisis or bank runs.

Liquidity trap A situation of very low rate of interest in the economy where every economic agent expects the interest rate to rise in future and consequently bond prices to fall, causing capital loss. Everybody holds her wealth in money and speculative demand for money is infinite.

Macroeconomic model Presenting the simplified version of the functioning of a macroeconomy through either analytical reasoning or mathematical, graphical representation.

Managed floating A system in which the central bank allows the exchange rate to be determined by market forces but intervene at times to influence the rate.

Marginal propensity to consume The ratio of additional consumption to additional income.

Medium of exchange The principal function of money for facilitating commodity exchanges.

Money multiplier The ratio of total money supply to the stock of high powered money in an economy.

Narrow money Currency notes, coins and demand deposits held by the public in commercial banks.

National disposable income Net National Product at market prices + Other Current Transfers from the rest of the World.

Net Domestic Product (NDP) Aggregate value of goods and services produced within the domestic territory of a country which does not include the depreciation of capital stock.

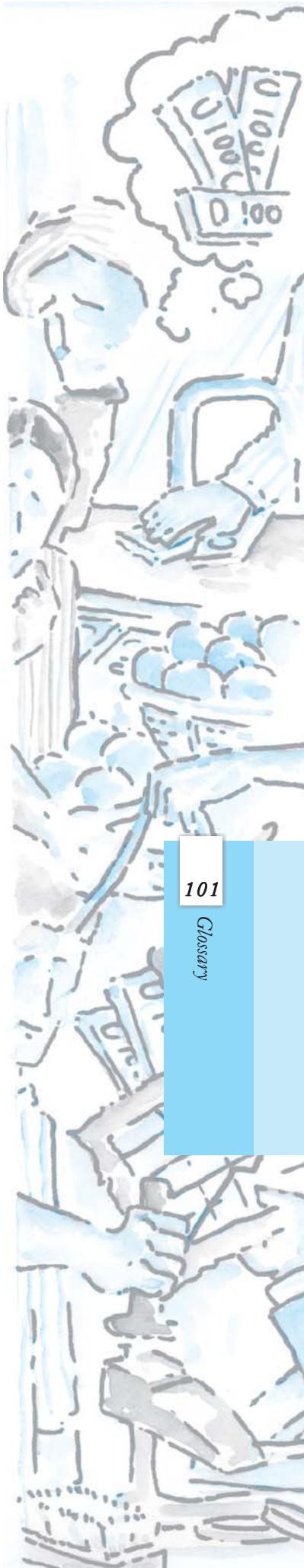
Net interest payments made by households Interest payment made by the households to the firms – interest payments received by the households.

Net investment Addition to capital stock; unlike gross investment, it does not include the replacement for the depletion of capital stock.

Net National Product (NNP) (at market price) GNP – depreciation.

NNP (at factor cost) or National Income (NI) NNP at market price – (Indirect taxes – Subsidies).

Nominal exchange rate The number of units of domestic currency one must give



up to get an unit of foreign currency; the price of foreign currency in terms of domestic currency.

Nominal (GDP) GDP evaluated at current market prices.

Non-tax payments Payments made by households to the firms or the government as non-tax obligations such as fines.

Open market operation Purchase or sales of government securities by the central bank from the general public in the bond market in a bid to increase or decrease the money supply in the economy.

Paradox of thrift As people become more thrifty they end up saving less or same as before in aggregate.

Parametric shift Shift of a graph due to a change in the value of a parameter.

Personal Disposable Income (PDI) PI – Personal tax payments – Non-tax payments.

Personal Income (PI) NI – Undistributed profits – Net interest payments made by households – Corporate tax + Transfer payments to the households from the government and firms.

Personal tax payments Taxes which are imposed on individuals, such as income tax.

Planned change in inventories Change in the stock of inventories which has occurred in a planned way.

Present value (of a bond) That amount of money which, if kept today in an interest earning project, would generate the same income as the sum promised by a bond over its lifetime.

Private income Factor income from net domestic product accruing to the private sector + National debt interest + Net factor income from abroad + Current transfers from government + Other net transfers from the rest of the world.

Product method of calculating national income Method of calculating the national income by measuring the aggregate value of production taking place in an economy over a period of time.

Profit Payment for the services which are provided by entrepreneurship.

Public good Goods or services that are collectively consumed; it is not possible to exclude anyone from enjoying their benefits and one person's consumption does not reduce that available to others.

Purchasing power parity A theory of international exchange which holds that the price of similar goods in different countries is the same.

Real exchange rate The relative price of foreign goods in terms of domestic goods.

Real GDP GDP evaluated at a set of constant prices.

Rent Payment for services which are provided by land (natural resources).

Reserve deposit ratio The fraction of their total deposits which commercial banks keep as reserves.

Revaluation A decrease in the exchange rate in a pegged exchange rate system which makes the foreign currency cheaper in terms of the domestic currency.

Revenue deficit The excess of revenue expenditure over revenue receipts.

Ricardian equivalence The theory that consumers are forward looking and anticipate that government borrowing today will mean a tax increase in the future to repay the debt, and will adjust consumption accordingly so that it will have the same effect on the economy as a tax increase today.

Speculative demand Demand for money as a store of wealth.

Statutory Liquidity Ratio (SLR) The fraction of their total demand and time deposits which the commercial banks are required by RBI to invest in specified liquid assets.

Sterilisation Intervention by the monetary authority of a country in the money

market to keep the money supply stable against exogenous or sometimes external shocks such as an increase in foreign exchange inflow.

Stocks Those variables which are defined at a point of time.

Store of value Wealth can be stored in the form of money for future use. This function of money is referred to as store of value.

Transaction demand Demand for money for carrying out transactions.

Transfer payments to households from the government and firms Transfer payments are payments which are made without any counterpart of services received by the payer. For examples, gifts, scholarships, pensions.

Undistributed profits That part of profits earned by the private and government owned firms which are not distributed among the factors of production.

Unemployment rate This may be defined as the number of people who were unable to find a job (though they were looking for jobs), as a ratio of total number of people who were looking for jobs.

Unit of account The role of money as a yardstick for measuring and comparing values of different commodities.

Unplanned change in inventories Change in the stock of inventories which has occurred in an unexpected way.

Value added Net contribution made by a firm in the process of production. It is defined as, Value of production – Value of intermediate goods used.

Wage Payment for the services which are rendered by labour.

Wholesale Price Index (WPI) Percentage change in the weighted average price level. We take the prices of a given basket of goods which is traded in bulk.

