



Macroeconomics for Financial Markets



NATIONAL STOCK EXCHANGE OF INDIA LIMITED

Test Details:

Sr. No.	Name of Module	Fees (Rs.)	Test Duration (in minutes)	No. of Questions	Maximum Marks	Pass Marks (%)	Certificate Validity
1	Financial Markets: A Beginners' Module *	1500	120	60	100	50	5
2	Mutual Funds : A Beginners' Module	1500	120	60	100	50	5
3	Currency Derivatives: A Beginner's Module	1500	120	60	100	50	5
4	Equity Derivatives: A Beginner's Module	1500	120	60	100	50	5
5	Interest Rate Derivatives: A Beginner's Module	1500	120	60	100	50	5
6	Commercial Banking in India: A Beginner's Module	1500	120	60	100	50	5
7	Securities Market (Basic) Module	1500	105	60	100	60	5
8	Capital Market (Dealers) Module *	1500	105	60	100	50	5
9	Derivatives Market (Dealers) Module *	1500	120	60	100	60	3
10	FIMMDA-NSE Debt Market (Basic) Module	1500	120	60	100	60	5
11	Investment Analysis and Portfolio Management Module	1500	120	60	100	60	5
12	Fundamental Analysis Module	1500	120	60	100	60	5
13	Banking Sector Module	1500	120	60	100	60	5
14	Insurance Module	1500	120	60	100	60	5
15	Macroeconomics for Financial Markets Module	1500	120	60	100	60	5
16	NISM-Series-I: Currency Derivatives Certification Examination	1000	120	60	100	60	3
17	NISM-Series-II-A: Registrars to an Issue and Share Transfer Agents – Corporate Certification Examination	1000	120	100	100	50	3
18	NISM-Series-II-B: Registrars to an Issue and Share Transfer Agents – Mutual Fund Certification Examination	1000	120	100	100	50	3
19	NISM-Series-IV: Interest Rate Derivatives Certification Examination	1000	120	100	100	60	3
20	NISM-Series-V-A: Mutual Fund Distributors Certification Examination *	1000	120	100	100	50	3
21	NISM-Series-VI: Depository Operations Certification Examination	1000	120	100	100	60	3
22	NISM Series VII: Securities Operations and Risk Management Certification Examination	1000	120	100	100	50	3
23	Certified Personal Financial Advisor (CPFA) Examination	4000	120	80	100	60	3
24	NSDL-Depository Operations Module	1500	75	60	100	60 #	5
25	Commodities Market Module	1800	120	60	100	50	3
26	Surveillance in Stock Exchanges Module	1500	120	50	100	60	5
27	Corporate Governance Module	1500	90	100	100	60	5
28	Compliance Officers (Brokers) Module	1500	120	60	100	60	5
29	Compliance Officers (Corporates) Module	1500	120	60	100	60	5
30	Information Security Auditors Module (Part-1)	2250	120	90	100	60	2
	Information Security Auditors Module (Part-2)	2250	120	90	100	60	
31	Options Trading Strategies Module	1500	120	60	100	60	5
32	FPSB India Exam 1 to 4**	2000 per exam	120	75	140	60	NA
33	Examination 5/Advanced Financial Planning **	5000	240	30	100	50	NA
34	Equity Research Module ##	1500	120	65	100	55	2
35	Issue Management Module ##	1500	120	80	100	55	2
36	Market Risk Module ##	1500	120	50	100	55	2
37	Financial Modeling Module ###	1000	150	50	75	50	NA

* Candidates have the option to take the tests in English, Gujarati or Hindi languages.

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** Following are the modules of Financial Planning Standards Board India (Certified Financial Planner Certification)

- FPSB India Exam 1 to 4 i.e. (i) Risk Analysis & Insurance Planning (ii) Retirement Planning & Employee Benefits (iii) Investment Planning and (iv) Tax Planning & Estate Planning
- Examination 5/Advanced Financial Planning

Modules of Finitatives Learning India Pvt. Ltd. (FLIP)

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Chapter 1: Introduction to Macro Economics

1.1 Introduction:

Understanding of economics is a key to knowing how the financial markets operate. There are intricate linkages between various economic factors and financial variables. For example, any tax rate changes by a government or a decision to change the amount of money in the system can have both direct and indirect impact on the financial markets. This module provides in very simple terms various macroeconomic concepts and a glimpse of macroeconomic behavior with frequent references to the Indian economy. This perspective forms an integral part of understanding that discerning finance professionals need to possess, as it would help them identify the causes of different economic developments and issues as well as anticipate the possible impact of changes in economic policies. A successful professional is one who applies this understanding to think ahead and formulate strategies for likely future scenarios.

Macroeconomics is a vast and complex subject. The literature is large, the issues diverse, and opinion divided on both diagnosis of the problems and prescriptions for solving them. It is also an evolving subject. Therefore, in preparing a short course material like this module, the author had to be selective. Further, the author had to strike a balance between theory, historical experiences and recent developments, while ensuring that the practical aspects of macroeconomic fundamentals and their impact on the Indian economy are adequately covered. For more advanced material, interested students are requested to refer to various books, websites on the subject.

1.2 Microeconomics and Macroeconomics

It is said that Economics is the social science that studies the production, distribution, and consumption of goods and services. Resources are scarce, while human wants are unlimited. Economics is the study of how societies use scarce resources to produce goods and services and distribute them efficiently among different people to satisfy their consumption needs. The essence of Economics is to explore ways to optimize the use of scarce resources and to organize the society in a way that leads to the most efficient use of those resources.

Economic theory can be broadly divided into two categories: Microeconomics and Macroeconomics. Microeconomics focuses on the individual level of the economy. It studies the behavior of individual economic agents such as individual consumers or workers or firms. For example, microeconomics studies how a firm attempts to maximize its profits under the constraints of its resources or how an individual makes decisions about his purchases given the income constraint that he or she has. In other words, Microeconomics analyzes and

studies decisions of individual economic agents and how they interact in specific markets and allocate their limited resources to optimize their own wellbeing.

Macroeconomics, on the other hand, looks at the economy as a whole. It deals with aggregate economic behavior of a nation, a region or the global economy. In other words, Macroeconomics deals with economy-wide phenomena such as inflation, unemployment, and economic growth. Macroeconomics tells us about what determines level of output in an economy, how are employment and prices determined; how money supply affects rate of interest, how do the monetary and fiscal policies of the government affect the economy etc. Macroeconomics tries to address some key issues which are of great practical importance and are being discussed and debated regularly among the press, media and politicians. Some of the key subjects which are dealt with in macroeconomics include:

Long-term Economic growth: Currently, we see that there is significant divergence of standard of living among different countries. The main reason for this varying standard of living among countries is the different levels of economic growth in the past. Over the past several decades, economies of the currently developed countries have shown moderate to high growth rates for a sustained period, while the economies of developing countries have not. The developing countries may have had occasional periods of high growth; but they have not sustained high growth performance over a long period. In other words, the developed countries have experienced higher long-term economic growth than the developing countries. Macroeconomics analyzes how and why different countries are growing at different rates, and suggests how countries can accelerate their growth rates.

Business Cycles: Growth of most countries—developed as well as developing countries -- go through ups and downs. The term **business cycle** refers to economy-wide fluctuations in production or economic activity over time between periods of relatively rapid economic growth, and periods of relative stagnation or decline. The duration of a business cycle can be several months or even a few years. Despite being termed cycles, these fluctuations in economic activity usually do not follow a mechanical or predictable periodic pattern.

The downward phase of business cycle, when economic activity contracts, is called recession. Recession can lead to job losses and other hardships for the population in the concerned economy. Macroeconomics studies business cycles and suggests policies so that recession can be avoided as far as possible or made short-lived. The upward phase of the business cycle is called economic boom. During this period, many new jobs are created and the unemployment rate in the economy falls.

Inflation: When prices of goods and services increase in an economy, it is said that the economy is experiencing 'inflation'. Inflation is thus the rate of increase in general price level over a period of time. Inflation is usually measured over a year and is expressed

in percentage terms. When we say that annual inflation on April 1, 2011 is 7 percent, it means that the general price level increased by 7 percent between April 1, 2010 and April 1, 2011. Inflation can be high, moderate or low. If the general price level falls, inflation turns negative; this phenomenon is called 'deflation'. Deflation is a very rare phenomenon. High inflation and deflation are both not desirable for an economy. High inflation hurts consumers as it reduces their purchasing power. Suppose during a year, an individual's income goes up by 6 percent, but the inflation during the year is 15 percent. Then the purchasing power of the individual has gone down by 9 percent, even though his income has risen by 6 percent. On the other hand, deflation leads the producers of goods and services to slow down their activities, because they get a lower price for their products than they used to earlier. This reduces their profits or even forces them to incur losses. As a result, the economic growth slows down. The economy may even get into a recession. Study of Macroeconomics gives insights into why inflation rises or falls and what policies help avoid periods of high inflation or deflation.

Global economic linkages: Currently, most countries of the world trade with each other and experience capital inflows and outflows. Macroeconomics studies the factors which drive movements of goods and services as well as capital across countries. It also studies the impact of such flows on the rest of the economy. Note that foreign capital flows play a very important role in the financial markets of developing countries and hence is becoming an increasingly important aspect of the economy of these countries.

Macroeconomic Policies: Performance of a country's economy is based on a number of factors like its endowment of resources, its stock of human capital, its technology and so on. In addition to all these, one other factor that plays a key role in determining the economic performance of a country is the economic policy followed by the government of the country. Governments of different countries use different policies to run the economy as efficiently as possible. These policies can be broadly divided into two segments: monetary policy and fiscal policy. Monetary policy involves the use of some monetary tools to influence the money supply in an economy and thereby influence other aspects on the economy. Money supply growth is regulated by the central bank of a country. The central bank of India is called the Reserve Bank of India.

Fiscal policy is the use of government expenditure and taxation to impact the economy. What should be the growth in government expenditures? How much of it should be on creation of assets? What should be taxed and at what rates? What should be the direction and magnitude of change in tax rates? These are some of the questions that fiscal policies, which are part of macroeconomic policies, deal with. Macroeconomics suggests when and how to use these policies and analyzes how these policies can be used for a particular economy in a given set of circumstances.

1.3 Why Macroeconomics is important for the financial sector

For people in finance, understanding macroeconomics is very important because each of the major macroeconomic factors mentioned above (such as growth, inflation, business cycles etc.) have strong impact on the financial markets. Macroeconomic factors can have strong impact on the financial sector. For example, when the economy gets into downturn, many firms find it difficult to repay their loans and as a result, the financial health of banks gets affected. Furthermore, changes in macroeconomic policies influence key variables of financial markets such as interest rates, liquidity and capital flows.

On the other hand, what is happening in the financial market can have a strong impact on the rest of the economy. Some examples of such transmission can be observed during the financial crises. In the United States, weaknesses in the financial sector stemming from a sudden and substantial decline in the prices of real estate, led to a downturn for the entire economy. In fact, almost all the countries of the world were affected because of this problem in the United States. In many countries across the world, this crisis hit not only the financial markets but also the entire economy, causing major recession and unemployment. The governments of these countries had to undertake serious coordinated policy measures to pull their economies out from recession.

As finance and macroeconomics are intimately interlinked, it becomes imperative for a finance professional to have at least a working knowledge of macroeconomics, so that they can better predict how the economic agents (firms and individuals) behave in different situations, what risks and opportunities arise in what macroeconomic situation, how changes in policy changes can affect different macroeconomic variables and so on.

1.4. The concept of 'equilibrium' in economics

During our subsequent discussion, we will often talk about 'equilibrium'. It may be important to understand the basics of equilibrium. In economics, equilibrium is simply a state of the world where economic forces at work balance each other. In the absence of external influences the (equilibrium) values of economic variables will not change. Market equilibrium, for example, refers to a condition where a market price is established through competition such that the amount of goods or services sought by buyers is equal to the amount of goods or services produced by sellers. This price at which such a balance of demand and supply occur is often called the equilibrium price or market clearing price and will tend not to change unless demand or supply change.

1.5 Broad outline

Chapter 2 discusses on two important macroeconomic variables, that is inflation and interest rate. Besides discussing various aspects of inflation and interest rate, the chapter also

analyses their impact on the overall economy. Chapter 3 discusses how to measure the size of an economy and what are the possible ways to measure the total income of an economy. It also looks into some key relationships among macroeconomic variables. In the context of the Indian economy, it analyzes how some major macroeconomic aggregates have behaved over the years. Chapter 4 analyzes the role of government in the economy. It highlights the revenue and expenditure pattern of Government of India and tries to analyze the possible impact of fiscal measures on the economy and on the financial sector. Chapter 5 focuses on money and the role of the central bank. As money is a key factor in the financial system, policy implications of some monetary policy instruments are also discussed. The next chapter analyzes how integration with the global economy affects the economy of a country. An open economy brings forth a new set of challenges and opportunities for an economy. Economic policies try to maximize the gains and minimize the costs of opening up the economy. This chapter discusses these issues in the Indian context. Chapter 7 is devoted to the financial market of India. It discusses how financial markets are different from other markets. It then goes on to analyze the structure and components of various financial institutions in India. Chapter 8 sums up the discussion by analyzing the roles of some key financial regulatory institutions in the Indian economy.

Chapter 2 : Inflation and Interest Rates

2.1 What is inflation?

Inflation denotes a rise in general level of prices. More specifically, inflation refers to the rate of general price increase over a period of one year. For example, if we say that the current inflation is 8 percent, it means the general price level has increased by 8 percent over the last one year.

It has been observed that inflation the world over has generally remained in the positive territory, implying that the general price level typically rises. There have however been exceptions, when there have been sustained decline in the price level of goods and services. This phenomenon is called deflation. For example, if we say that the current deflation rate is 4 percent, it means that the inflation is (-) 4 percent. In other words, the general price level has fallen by 4 percent over the last one year. Japan suffered from deflation for almost a decade in 1990s.

2.2 How to measure inflation?

Now, what do we mean by general price level and why do we use general price levels to measure inflation? Supposing an economy produces 1000 goods. During a given year, the price of these goods may have changed by different percentages; some may have risen by 5 %, some by 7 %, some by 20 % and there may even be some goods, whose prices may have actually fallen. No single commodity will give us correct picture of the general price increase in the economy. So, we must create a price index by taking into account either all the commodities in the economy or a basket of sufficiently large number of commodities that broadly represent the economy. Generally, the latter (that is, a given basket of commodities) is chosen to create a price index. The purpose of a price index is to quantify the overall increase or decrease in prices of several commodities through a single number. The price index is measured at regular intervals and changes in price index are an indicator of the average price movement of a fixed basket of goods and services (that represent the entire economy). The Inflation at any given time is measured by computing the percentage changes in the price index at that point of time over the index prevailing one year previously.

To measure the rate of inflation, the following formula is used:

$$\text{Rate of Inflation in year X: } [(P_x - P_{x-1}) / (P_{x-1})] * 100$$

Where:

P_x is the price index for the year X.

P_{x-1} is the price index of the preceding year.

The wholesale price index and the wholesale price inflation in India during 1993/94 to 2009/10 is given below.

Table 2.1 : Computation of Inflation through Wholesale Price Index values

Financial Year	Wholesale Price Index	Inflation Rate (in %)
1993-1994	100.0	--
1994-1995	112.8	12.8
1995-1996	121.6	7.8
1996-1997	127.2	4.6
1997-1998	132.8	4.4
1998-1999	140.7	5.9
1999-2000	145.3	3.3
2000-2001	155.7	7.2
2001-2002	161.3	3.6
2002-2003	166.8	3.4
2003-2004	175.9	5.5
2004-2005	187.3	6.5
2005-2006	195.6	4.4
2006-2007	206.2	5.4
2007-2008	215.7	4.6
2008-2009	233.9	8.4
2009-2010	242.9	3.8

Source: *Office of the Economic Adviser, Ministry of Commerce and Industry*

An important point to note from the Table 2.1. is that while the price level increased consistently over the period (indicated by a consistent increase in index), the inflation rate fluctuated; that is rose in some years and fell in other years. This is so, because inflation is the *rate* of price increase, which can fluctuate both ways even when prices continually increase.

2.3 Measurement of Inflation

Primarily, two types of price indices used are – Wholesale Price Index (WPI) and Consumer Price Index (CPI). Inflation measured through wholesale price index is called wholesale price inflation or headline inflation and inflation measured through consumer price index is called consumer price inflation. The WPI and the CPI as they exist in India are given below.

Wholesale Price Index (WPI) is the index of prices prevailing in the wholesale market. The concept of wholesale price adopted in practice represents the quoted price of bulk transaction generally at primary stage. For example, the price pertaining to bulk transaction of agricultural commodities may be farm harvest prices, or prices at the village mandi / market. Similarly, for manufactured goods, the wholesale prices are ex- factory gate level or ex-mine level. In India, wholesale price index is calculated by the Government on monthly and yearly basis. What you see in Table 2.1 is the yearly wholesale price index and yearly wholesale inflation. The wholesale price index and wholesale price inflation are keenly watched by the observers of the economy and policy makers. The wholesale price inflation

Is also called the headline inflation.¹ Please note that it is only since November 2009 that the WPI has begun to be announced on a monthly basis; earlier, it used to be on a weekly basis. The switch to monthly inflation from weekly inflation was made to ensure that the policy makers are not misled by the week-to-week fluctuations in inflation to make policy prescriptions. The WPI is compiled by the Office of Economic Advisor to the Ministry of Commerce and Industry of the Government of India.

There are three major groups in India's wholesale price index: 1) Primary Articles 2) Fuel, Power, Lights & Lubricants and 3) Manufacturing Items. (See Box). Note that the indexes of the three major groups and each of the subgroups under them are publicly available. So, it is possible for us to calculate not only general inflation, but also the inflation rate of a particular group (such as primary articles) or sub-group (such as leather and leather products).

Box: Major Groups in Wholesale Price Index of India

I. Primary Articles (3 sub-groups)

- i) Food Articles
- ii) Non-Food Articles
- iii) Minerals

II. Fuel, Power, Light & Lubricants (3 sub-groups)

- iv) Coal
- v) Mineral oils
- vi) Electricity

III. Manufactured Products (12 sub groups)

- vii) Food Products
- viii) Beverages, Tobacco & Tobacco Products
- ix) Textiles
- x) Leather & Leather Products
- xi) Wood & Wood Products
- xii) Paper & Paper Products
- xiii) Rubber & Plastic products
- xiv) Chemicals & Chemical Products
- xv) Non-Metallic Mineral products
- xvi) Basic Metals, Alloys & Metal Products
- xvii) Machinery & Machine tools Transport Equipment & parts
- xviii) Transport Equipment & Parts

The commodity basket for the computation of WPI consists of 435 commodities, of which 98 are under primary articles, 19 under 'Fuel, Power, Light and Lubricants' and 318 under manufactured products.

¹ From the headline inflation if the effect of changes in prices of food and energy (ptroleum etc), which are prone to volatile price movements, are removed, what we get is called **Core inflation**. The concept of core inflation rate was introduced by Robert J. Gordon in 1975. (Robert J. Gordon, 1975. "Alternative Responses of Policy to External Supply Shocks," Brookings Papers on Economic Activity, Economic Studies Program, The Brookings Institution, vol. 6(1975-1), pages 183-206)

Consumer Price Index is the index of prices prevailing in the retail market. CPI is more relevant to the consumer, since it measures changes in retail prices. The Consumer Price Index represents the basket of essential commodities purchased by the average consumer – food, fuel, lighting, housing, clothing, articles etc. Inflation measured by using CPI is called consumer price inflation. There are three measures of CPI, which track the cost of living of three different categories of consumers—industrial workers (IW), agricultural laborers (AL) and rural laborers (RL). Each category has its own basket of commodities that represent the consumption pattern of the respective consumer groups. Not only does the basket of commodities differ, but also the weights assigned to the same commodity may be different under different CPI series. For example, food gets a weight of only 48 percent under CPI-IW, but 73 percent under CPI-AL. Among the three, CPI-IW is most popular. In the organized sector, CPI –IW is used as the cost of living index. Consumer Price Index is measured on a monthly basis in India. All the three series of CPI are compiled by Labour Bureau of the Labour Ministry of the Government of India. While wholesale price inflation is more popular in India, the Consumer Price Index is a popular measure in developed nations like USA, UK.

2.4 Theories of Inflation

Various theories have been propounded to explain the cause of inflation. However, in this book we will limit our explanation to the demand pull and cost push inflation theories.

Aggregate **demand pull inflation** occurs when the aggregate demand ² for output is in excess of maximum feasible or potential or full-employment output (at the going price level). Since the level of output is taken as a given data, the excess demand is supposed to be generated by the factors influencing only the demand side of the commodities market. Demand-pull inflation simply means that aggregate demand has been 'pulled' above what the economy is capable of producing in the short run.

Cost push inflation occurs due to an increase in the cost of production. In contrast to the demand-pull inflation, the cost-push inflation emphasizes increases in some important component or the other cost as the true source of inflation. It works through some important cost components in the production process such as wages or materials cost. Note that according to this theory, the upward push in costs is independent of the demand conditions of the concerned market; for example, wages could rise because of trade union activities rather than shortage of labour. The second important aspect to note is that the higher cost is passed on to the consumers in terms of higher prices and are not absorbed by the producers.

² The total amount of goods and services demanded in the economy at a given overall price level and in a given time period.

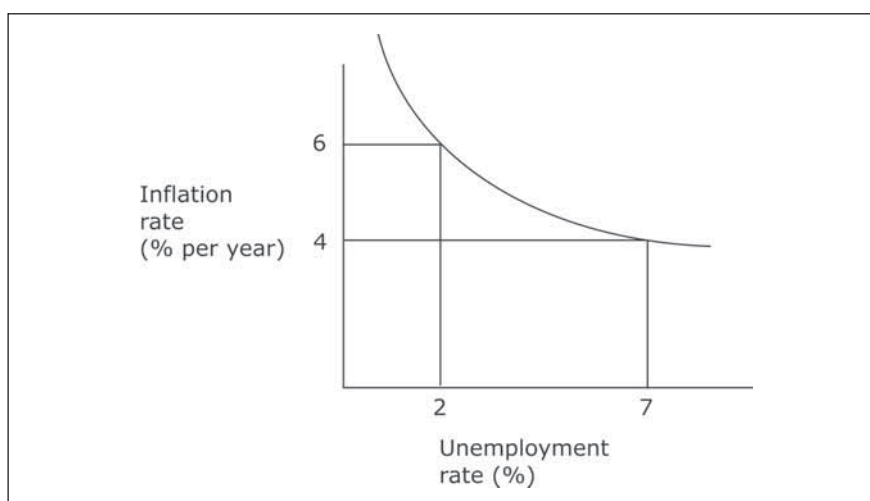
2.5 Impact of Inflation on macroeconomic variables

Exchange Rate: Persistently higher inflation in a country (say Country A) relative to the inflation in another country (say Country B) generally leads to depreciation of a currency in country A. Depreciation of the currency of country A means decrease in the value of the currency of country A relative to the currencies of country B. In other words, if country A persistently experiences higher inflation than country B, in exchange for the same number of units of Currency A, the residents of country A will get fewer units of currency B than before.

Exports and Imports: As stated in the preceding paragraph, relatively higher inflation in a country leads to the depreciation of its currency vis-à-vis that of the country with lower inflation. If the two countries happen to be trading partners, then the commodities produced by the higher inflation country will lose some of their price competitiveness and hence will experience lesser exports to the country with lower inflation. A currency depreciation resulting from relatively higher inflation leads not only to lower exports but also to higher imports.

Interest Rates: When the price level rises, each unit of currency can buy fewer goods and services than before, implying a reduction in the purchasing power of the currency. So, people with surplus funds demand higher interest rates, as they want to protect the returns of their investment against the adverse impact of higher inflation. As a result, with rising inflation, interest rates tend to rise. The opposite happens when inflation declines.

Unemployment: There is an inverse relationship between the rate of unemployment and the rate of inflation in an economy. It has been observed that there is a stable short run trade-off between unemployment and inflation. This inverse relationship between unemployment and inflation is called the Phillip's Curve (see below).



As shown in the above graph, when an economy is witnessing higher growth rates, unless it is a case of stagflation, it typically accompanies a higher rate of inflation as well. However, the surging growth in total output also creates more job opportunities and hence, reduces the overall unemployment level in the economy. On the flip side, if the headline inflation

breaches the comfort level of the respective economy, then suitable fiscal and monetary measures follow to douse the surging inflationary pressure. In such a scenario, a reduction in the inflation level also pushes up the unemployment level in the economy.

2.6 Controlling Inflation

There are broadly two ways of controlling inflation in an economy – Monetary measures and fiscal measures. The most important and commonly used method to control inflation is monetary policy of the Central Bank. Most central banks use high interest rates as the traditional way to fight or prevent inflation. Monetary measures used to control inflation include (i) bank rate policy (ii) cash reserve ratio and (iii) open market operations. Besides these monetary policy steps, the fiscal measures to control inflation include taxation, government expenditure and public borrowings. The government can also take some protectionist measures (such as banning the export of essential items such as pulses, cereals and oils to support the domestic consumption, encourage imports by lowering duties on import items etc.). These monetary and fiscal measures have been discussed in detail in later chapters of this module.

2.7 Interest Rates

Interest rate is the price demanded by the lender from the borrower for the use of borrowed money. In other words, interest is a fee paid by the borrower to the lender on borrowed cash as a compensation for forgoing the opportunity of earning income from other investments that could have been made with the loaned cash. Thus, from the lender's perspective, interest can be thought of as an "opportunity cost" or "rent of money" and interest rate as the rate at which interest (or 'opportunity cost') accumulates over a period of time. The longer the period for which money is borrowed, the larger is the interest (or the opportunity cost). The amount lent is called the principal. Interest rate is typically expressed as percentage of the principal and in annualized terms. From a borrower's perspective, interest rate is the cost of capital. In other words, it is the cost that a borrower has to incur to have access to funds.

2.8 Factors affecting the level of Interest Rate

Interest rates are typically determined by the supply of and demand for money in the economy. If at any given interest rate, the demand for funds is higher than supply of funds, interest rates tend to rise and vice versa. Theoretically speaking, this continues to happen as interest rates move freely until equilibrium is reached in terms of a match between demand for and supply of funds. In practice, however, interest rates do not move freely. The monetary authorities in the country (that is the central bank of the country) tend to influence interest rates by increasing or reducing the liquidity in the system. This has been discussed later. Broadly the following factors affect the interest rates in an economy:

Monetary Policy – The central bank of a country controls money supply in the economy through its monetary policy. In India, the RBI's monetary policy primarily aims at price stability and economic growth. If the RBI loosens the monetary policy (i.e., expands money supply or liquidity in the economy), interest rates tend to get reduced and economic growth gets spurred; at the same time, it leads to higher inflation. On the other hand, if the RBI tightens the monetary policy, interest rates rise leading to lower economic growth; but at the same time, inflation gets curbed. So, the RBI often has to do a balancing act. The key policy rate the RBI uses to inject (or reduce) liquidity from the monetary system is the repo rates (or reverse repo rates).³ Changes in repo rates influence other interest rates in the economy too.

Growth in the economy – If the economic growth of an economy picks up momentum, then the demand for money tends to go up, putting upward pressure on interest rates.

Inflation – Inflation is a rise in the general price level of goods and services in an economy over a period of time. When the price level rises, each unit of currency can buy fewer goods and services than before, implying a reduction in the purchasing power of the currency. So, people with surplus funds demand higher interest rates, as they want to protect the returns of their investment against the adverse impact of higher inflation. As a result, with rising inflation, interest rates tend to rise. The opposite happens when inflation declines.

Global liquidity – If global liquidity is high, then there is a strong chance that the domestic liquidity of any country will also be high, which would put a downward pressure on interest rates.

Uncertainty – If the future of economic growth is unpredictable, the lenders tend to cut down on their lending or demand higher interest rates from individuals or companies borrowing from them as compensation for the higher default risks that arise at the time of uncertainties or do both. Thus, interest rates generally tend to rise at times of uncertainty. Of course, if the borrower is the Government of India, then the lenders have little to worry, as the government of a country can hardly default on its loan taken in domestic currency.

2.9 Impact of interest rates

There are individuals, companies, banks and even governments, who have to borrow funds for various investment and consumption purposes. At the same time, there are entities that have surplus funds. They use their surplus funds to purchase bonds or Money Market instruments. Alternatively, they can deposit their surplus funds with borrowers in the form of fixed deposits/ wholesale deposits.

³ Repo rate is the rate at which the RBI lends money to the commercial banks and reverse repo rate is the interest rate that commercial banks get for parking their excess funds with the RBI. These concepts have been discussed later in this module.

Interest rates receive a lot of attention in the media and play an important role in formulation of Government policy. Changes in the rate of interest can have significant impact on the way individuals or other entities behave as investors and savers. These changes in investment and saving behavior subsequently impact the economic activity in a country. For example, if interest rates rise, some individuals may stop taking home loans, while others may take smaller loans than what they would have taken otherwise, because of the rising cost of servicing the loan. This will negatively impact home prices as demand for homes will come down. Also, if interest rates rise, a company planning an expansion will have to pay higher amounts on the borrowed funds than otherwise. Thus the profitability of the company would be affected. So, when interest rates rise, companies tend to borrow less and invest less. As the demand for investment and consumption in the economy declines with rising interest, the economic growth slows down. On the other hand, a decline in interest rates spurs investment spending and consumption spending activities and the economy tends to grow faster.

2.10 Concept of Real Interest Rate

Real interest rate is the interest rate that is adjusted to remove the effects of inflation to reflect the real cost of funds to the borrower. In simple terms, it is the rate of interest an investor expects to receive after subtracting inflation. The real interest rate of an investment is calculated as the amount by which the nominal interest rate is higher than the inflation rate.

Real Interest Rate = Nominal Interest Rate - Inflation (Expected or Actual)

The concept of real interest rate can be explained with the help of a simple example. If an individual is earning an interest of 8% per year on the savings in his bank account and inflation is 4% per year, then the real interest rate that the individual receives is 4% ($8\% - 4\% = 4\%$). Thus, the real value of savings increases by 4% per year.

Chapter 3 : National Income Accounting

3.1 National Income Accounting: Measuring Economic Activity

During his Budget speech for the year 2010-11, the Finance Minister of India said “The fiscal year 2009-10 was a challenging year for the Indian economy. The significant deceleration in the second half of 2008-09, brought the real GDP growth down to 6.7 per cent, from an average of over 9 per cent in the preceding three years”. In newspapers and television channels also, one often finds reference to the GDP growth rate of a country. It is important to understand what does GDP mean, how it is measured and what does changes in its growth rate mean for the economy.

The most common measure used to estimate the size of an economy is called the **Gross Domestic Product or GDP**. **GDP** is a comprehensive measure of a country’s overall economic output. GDP is defined as the *market value of all final goods and services produced within an economy in a given period of time, usually in a financial year*. Therefore, India’s GDP in 2008-09 is Rs 5,574,449 crores means that the total value of goods and services produced in India during 2008-09 is Rs 5,574,449 crores. ⁴

To understand how the GDP is calculated, let us take an example of a very small economy. Suppose a hypothetical economy produces only three products: wheat, bicycles and cloth. In year 1, it produces 5 tonnes of wheat, 100 bicycles and 500 meters of cloth. In Table 3.1, with the help of the prices and the number of units of different items produced in an economy, it is shown how the GDP is calculated.

Table 3.1 : Calculation of GDP for a hypothetical economy

Item	Price in Rs. / unit	No of Units	Total value of Output (Rs.)
Wheat	5,000 per tonne	5 tonnes	=25,000
Bicycles	2,000 per unit	100	=2,00,000
Cloth	200 per meter	500 meters	=1,00,000
Gross Domestic Product for year 1			Rs. 3,25,000

There are a few things to be noted from Table 3.1. First, as the production of wheat, bicycles and cloth is measured in different units (for example, production of wheat is measured in tonnes, while that of cloth is measured in meters), the production of these three products cannot be added to find out the size of the economy. If however we find out their value, all the three products can be expressed in the same unit, (namely rupee). To get the value of

⁴ The financial year in India is from April to March. Thus, the financial year 2008-09 means the period from April 1, 2008 to March 31, 2009.

each good in rupee terms, we need to multiply their production volumes by their respective prices. Once that is done, these values can be added up to arrive at the GDP value.

Secondly, it should be clear from the table that GDP can increase either due to an increase in production volume of the goods or due to an increase in the prices. These two situations for the year 2 are shown in Table 3.2. In scenario 1, in our hypothetical economy, the output of each of the product doubles but prices do not change. In this case, the value of GDP will be Rs.6,50,000. But suppose as an alternative scenario (Scenario 2), there is no change in output but only the price of each good doubles. In this case also the value of GDP will be the same as in the previous case (see Table 3.2).

Table 3.2 : Two different Scenarios but same GDP (year 2)

Scenario 1 (same price, output doubles)				Scenario 2 (same output, price doubles)			
Item	Price in Rs./ unit	No of Units	Total value of Output (Rs.)	Item	Price in Rs./ unit	No of Units	Total value of Output (Rs.)
Wheat	5,000 per tonne	10 tonnes	50,000	Wheat	10,000 per tonne	5 tonnes	50,000
Bicycles	2,000 per unit	200	4,00,000	Bicycles	4,000 per unit	100	4,00,000
Cloth	200 per meter	1000	2,00,000	Cloth	400 per meter	500	2,00,000
Gross Domestic Product for year 2			Rs. 6,50,000	Gross Domestic Product for year 2			Rs.6,50,000

But obviously, these two situations are completely different. In the first case, there has been a genuine increase in the level of economic activity in the country, while in the second case it is only a case of increase in prices. To know whether there has been a genuine increase in economic activity and by how much, GDP measures need to be taken at constant prices (that is, the price level of a particular year). For the hypothetical economy, this can be done by using the prices of a particular year (say year 1, as given in Table 3.1) to measure GDP for year 2 for both scenarios. If we use prices of year 1 (given in Table 3.1), Scenario 1 shows a genuine increase in economic activity, while Scenario 2 shows no increase in GDP. Thus, using GDP estimates at constant prices helps us eliminate the effects of price level changes on the GDP. When GDP calculations are made using constant prices, it is called 'real' GDP.

When GDP calculations are done using current prices, it is called 'nominal' GDP. For example, in Scenario 1 of Table 3.2, since calculations of GDP in Year 2 have been made using current prices (that is, prices of year 2), it is called the nominal GDP for year 2, which is Rs. 6,50,000. If instead, in the same Scenario 1, the calculation of GDP for year 2 were made using constant prices (that is prices of Year 1), it would have been called real GDP for year 2, which would have been Rs. 3,25,000.

To measure how fast a country's economy is growing, the rate of growth of real GDP is used. Annual rate of growth of real GDP is calculated using the following formula :

Real GDP growth rate for year (t+1)

$$= \frac{(\text{GDP at constant prices for year (t+1)} - \text{GDP at constant prices for year (t)}) \times 100}{\text{GDP at constant prices for year (t)}}$$

So, unless otherwise mentioned, the economic growth of a country means growth of its real GDP. "Real" implies adjusted for inflation. If it is not adjusted for price level, then it is "nominal". Figure 3.1 shows the GDP growth rates of India at current and at constant prices. In any given year, the difference between the two lines can be accounted for by inflation in India. For example, in 1997/98, the GDP growth rate at current prices (that is, nominal growth rate) was 11 %, while the GDP growth rate at constant prices (that is, real growth rate) was 4 percent. The difference is on account of inflation of 7 % (= 11%- 4%) in that year.

Figure 3.1 : GDP Growth Rate of India



Source: Handbook of Statistics on Indian Economy, Reserve Bank of India

In real life, the calculation of GDP is much more complex than the overly simplistic example given above. This is mainly because of four reasons.

- First, some goods may be produced not for direct consumption, but to be used in the production of other goods. ⁵ For example, let us assume that a farmer produces wheat worth Rs 1000 and sells this wheat to a baker. The baker makes flour and bread and

⁵ Final goods are goods that are subject to direct consumption. If a good is used not for direct consumption, but for the production of other goods, it is not a final good, but an intermediate good. Thus, if milk is used for direct consumption it is called final good; but if it is used to make curd, it is being used as an intermediate good and not a final good.

sells the bread at Rs 2000. Therefore, the price of bread now includes the cost of production of bread (including the cost of wheat) and the profit of the baker. So, if the values of production of both wheat and bread are added for GDP calculation, it will lead to double counting and GDP will be mistakenly shown as high. It is important to avoid such problems.

- Second, a farmer may not sell the entire amount of rice that he produces. Some amount may be kept for self consumption. The amount held back for self-consumption will not be reflected in GDP if one only takes only the value of rice that is sold in the market for GDP calculation. Hence, in this case, GDP will be underestimated. In India, particularly, it is important to estimate the self-consumed amount for calculating GDP. This is because in India, a large share of the population is engaged in subsistence farming, where the agricultural output produced is largely used for self consumption.
- Third, along with intermediate goods, there are other types of goods which are not final goods and which are used in the production process. For example, for baking the bread, the baker needs ovens. But unlike wheat, the ovens are not used up during the production of bread. In other words, while wheat becomes an ingredient for producing the bread, the oven is only a tool to produce it. Such goods are called **Capital Goods**. Capital goods are used to produce other goods but unlike intermediate goods, they are not used up right away during the production of the final good. It is important to take the value of capital goods in GDP calculation. In economics, the total value of a country's capital goods at a given point of time is called the capital stock at that point of time. Addition to the capital stock during a certain period is called '**investment**' during that period. For example, if the baker had ovens worth Rs. 30,000 on April 1, 2008 and had ovens worth Rs. 50,000 on April 1, 2009, then it implies that he bought capital goods worth Rs. 20,000 in the financial year 2008-2009. This amount, which is an addition to his capital stock, will be taken as his investment in the financial 2008-09. In calculating GDP for a year, it is very important to incorporate investment during the year (that is the change in the value of capital stock during the year). Here, it is important to learn the concept of depreciation (see box 3.1)
- Finally, in a big economy like India there is a significant underground economy or illegal economy. Incomes are not reported fully; there might be bribery involved. The underground economy is the part of the economy that people hide from the government either because they wish to evade taxation or because the activity is illegal. These activities are not reported in government statistics and therefore these are not captured in the GDP figures.

Box 3.1: What is depreciation?

Capital goods tend to have a finite lifetime. For example, the oven bought by the baker might have a lifetime of 10 years and at the end of the 10th year, the baker will have to replace it. This gradual erosion of capital goods is called **depreciation**. The erosion in value of capital goods during a year is called depreciation during that year. When GDP figures are adjusted for depreciation, the resultant measure is called **Net Domestic Product or NDP**. Therefore, NDP is:

$$\text{NDP} = \text{GDP} - \text{depreciation of capital stock}$$

In India, the Central Statistical Organization (CSO) estimates GDP data for the country. The website of CSO is <http://www.mospi.gov.in>

3.2 Some other ways to measure National Income

Discussion in the previous section shows that national income can be measured as the value of total output produced, excluding the value of output used in the intermediate stages of production. This is called the 'production approach' for measuring GDP. However, there are two other ways to measure GDP - the 'income approach' and the 'expenditure approach'. Whichever approach is adopted, we get the same measure of GDP.

3.2.1 The Expenditure Approach

Let us initially assume that there are two sets of economic agents in the system-the firms and the households. The firms are producers of goods and households are the consumers of these goods. Firms employ the people from household as workers, pay them wages and earn their profit by selling their goods and services.

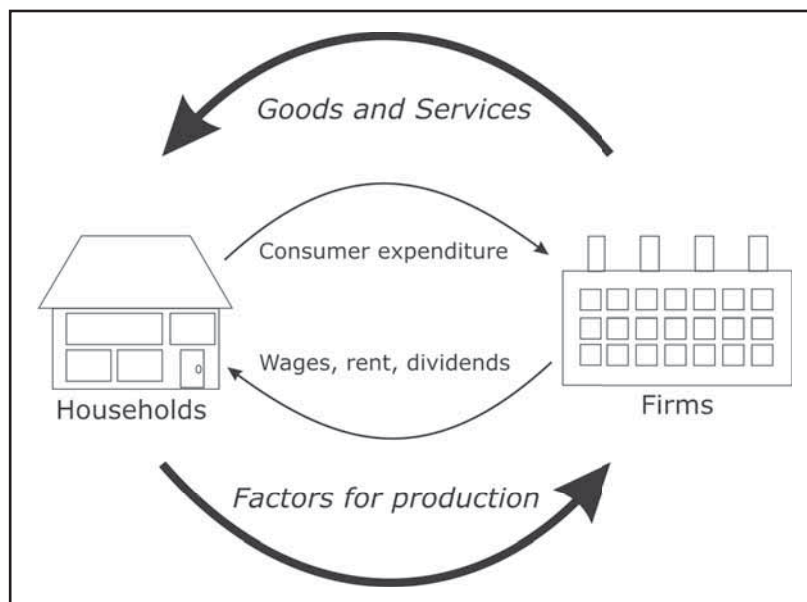
In economics, the resources which are used to produce goods and services are called "factors of production". Labour, capital and land are considered to be factors of production. The factors of production earn a return for their contribution to the production process; for example, labour earns wage, capital earns interest and dividend, and land earns rent.

Therefore, the economic system will look like the following:

Firms produce and sell goods and services. They hire and use factors of production.

Households buy and consume goods and services. They own and sell factors of production. (See Figure 3.2)

Figure 3.2 : Diagram showing Circular Flow of Income in an Economy



Assuming that all goods and services produced during a year are sold during the same year and there are no unsold goods at the end of the year, we can define the GDP of this economic system as:

GDP = Consumption expenditure by the household sector (this should equal the total value of final goods and services produced) + Investment expenditures by the firms (this should include expenditure on all capital goods by the firms in a certain period)

If we denote GDP as **Y**; Consumption as **C** and Investment as **I**, then the above equation becomes:

$$Y = C + I \quad \dots\dots\dots (i)$$

At this point, it is important to learn the concept of inventory (see Box 3.2).

Box 3.2: What is inventory?

We made a simplifying assumption that all goods and services produced during a period are completely sold. This is a restrictive assumption. In real life there can be unsold goods during a period. A firm may produce a quantity of goods in a specific year, but not sell all of those goods within that same year. These unsold goods are called “inventories” and are counted as part of investment by the firm.

So far we have assumed that there are only two sets of economic agents in the system: firms and household. We now introduce a third economic agent, which is the ‘Government’. The Government plays a very important role in an economy. Government can act as consumer (while purchasing goods such as stationery or food grains for distribution in ration shops) or

act as a producer (while purchasing capital goods such as machinery).⁶

Therefore, if one includes the government in equation (i), the system will become:

$$Y = C + I + G; \dots\dots\dots(ii)$$

Where, government spending is denoted by **G**

So far, we have assumed a close economy with no foreign trade. Once we relax this assumption, there are two more important components which should be added to our equations. Once we open up the economy, it is possible that along with domestic economic agents, foreign buyers will also be buying goods and services from an economy. The goods and services that foreign buyers procure from the domestic markets are called 'Exports' and are denoted by X. On the other hand, domestic economic agents can also procure goods and services from the foreign market. These are 'Imports' and are denoted by M. Exports add to the GDP value because it increases the total expenditure on domestic goods and services. Imports, on the other hand, have just the opposite effect. Therefore, the new equation will now look like:

$$Y = C + I + G + (X-M) \dots\dots\dots (iii)$$

The national income accounts divide GDP into four broad categories of spending:

- Consumption (C)
- Investment (I)
- Government spending (G)
- Net Exports (X-M).

The right hand side of equation (iii) actually shows the aggregate demand generated for the goods and services of the economy.

Equation (iii) is an extremely important accounting equation in economics. It is not only used to measure GDP but it also has significant relevance in understanding how an economy works. We will come back to this equation soon.

3.2.2 The Income Approach

GDP can be measured from the income side as well. The 'income approach' measures economic activity by adding all the incomes received by all the producers of output. This includes wages received by workers and profits received by the owners of the firms. To be more specific, there can be five types of income:

- **Compensation of employees:** This is the income of workers, including self-employed workers, and includes salaries, wages, pensions etc.

⁶ To raise revenue to finance its purchases, the government imposes taxes on the household and firms. Taxation lowers the amount of income of households and firms and thereby reduces their spending.

- **Proprietor's income:** These are the profits of partnerships and solely owned businesses, like a family restaurant.
- **Rental income of persons:** Income earned by individuals who own land or structures that they rent to others.
- **Corporate profits:** Corporate profits are the profits earned by the corporations and represent the remainder of corporate revenue after wages, rents, interest payments and other costs.
- **Net interest:** Net interest is the interest earned by individuals from business and foreign sources

GDP measurement based on income or expenditure should result in the same GDP figures⁷. Therefore, GDP sometimes is also called the total income of the economy.

3.3 National Income Accounting and relationship among macroeconomic variables

3.3.1 The relationship among macroeconomic variables

The basic macroeconomic equation that shows the different components of aggregate demand is

$$Y = C + I + G + (X-M) \dots\dots\dots (iv)$$

If we

- 1) Include government consumption under C and government investment under I ⁸and
- 2) Assume exports and imports balance each other out (or $X=M$), then the equation becomes:

$$Y = C + I$$

Rearranging, we get

$$Y - C = I \dots\dots\dots (V)$$

Now C is consumption and Y is the total income of the economy and savings is defined as income which has not been spent.

Therefore, $Y - C$ is nothing but the total savings generated in the economy.

$$\text{If we denote savings by } S, \text{ then } Y - C = S \dots\dots\dots (VI)$$

⁷ But due to measurement issues, sometimes there can be small differences among these measures.

⁸ As stated earlier Government expenditure includes Government Consumption Expenditure (such as food subsidy, fertilizer subsidy etc) and Government Investment Expenditure (government expenditure on plants and machinery).

From Equation (V) and (VI), $I = S$ or, savings is equal to investment

At one level, this equation will always hold true and it is an identity. This is because of the way Y , C , S and I are defined, S will always be equal to I . Remember that this happens when $X = M$

If we go back to figure 3.2, we can understand that the household sector earns income through its supply of different factors of production. Some amount of this income is spent on purchasing goods and services produced by the firms. The residual income is saved.

On the other hand, firms need to buy capital goods to replace their worn out machines and to add capacity to their production process. Adding capital goods and replacing worn out machines is nothing but investment. Therefore, firms need funds for their investment.

Therefore, in this economy there is a sector with excess funds and there is another sector which is requiring funds. It will be mutually beneficial if there is an institution which channelizes the savings from the household sector to cater to the investment needs of the firms. In fact, this is the main role which the financial sector plays in an economy. A well functioning financial sector encourages and mobilizes savings and allocates that to the most productive uses in the firm sector.

Remember that $S = I$ is only an accounting identity. In reality, even in a very simple economy, the amount of fund required by the firms for their planned investment and the amount of actual savings generated by the household sector may not be same. However, if and when the planned investment by the firm sector matches exactly the actual savings by the household sector, the economy is said to be in equilibrium. Therefore, the $S = I$ equation can also be viewed as an equilibrium condition for an economy, provided the equation is changed to read as

$$\text{Savings}_{\text{actual}} = \text{Investment}_{\text{Planned}} \text{ (Equilibrium condition)}$$

This also tells us that if an economy does not generate enough savings, then the amount of investment made by the firms will be low. In other words, investment will be constrained by the low savings generated in the economy. This is the reason why governments of developing countries have taken a number of measures to improve the savings rate of an economy such as giving tax exemptions.

Let us now relax the condition that $X = M$.

If suppose, X was not equal to M , then it can be shown from Equation (IV) and (V) that

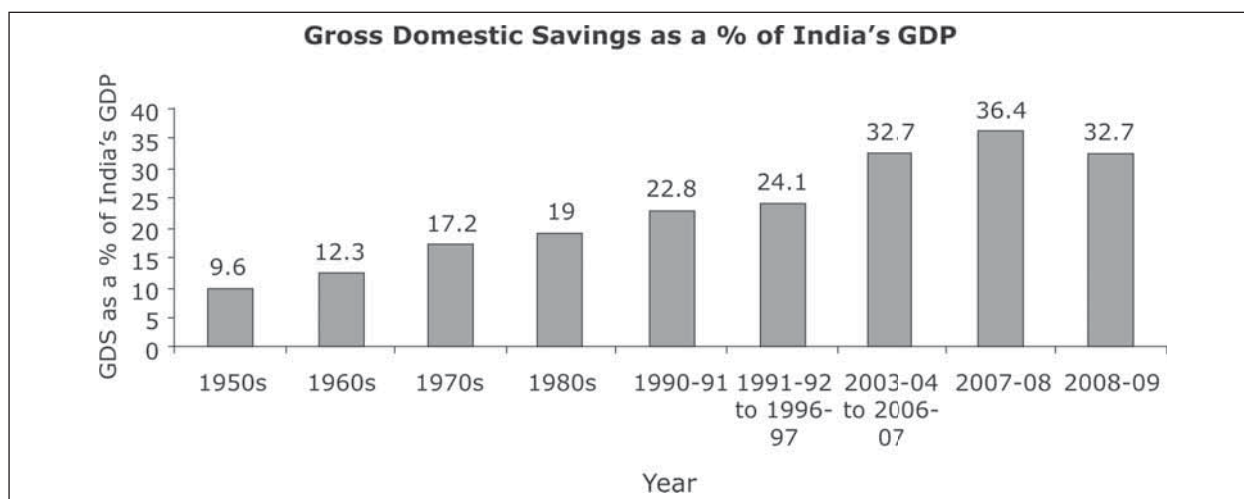
$$I = S + (M - X)$$

While S is called domestic savings, $(M - X)$ is called foreign savings.

Note that if in a country in any given year, M exceeds X , the country has positive foreign savings in that year. In such a case, it is possible for the country to invest more than its domestic savings in that year.

3.4 Saving and Investment in India

Figure 3.3 : Gross Domestic Saving as a percentage of GDP in India



Source: Reserve Bank of India

Over the years, with the increase in per capita income, India's gross domestic savings (GDS) continued to rise.⁹ During the 1950s, the GDS of India as a percentage of GDP was around 9.6 percent. Latest figures indicate that the GDS as a percentage of GDP has become around 32.7 percent. India is currently among the countries with the highest saving rates. For a low income country, this has been a commendable achievement.

Gross Domestic Savings constitutes savings of (a) public sector, (b) private corporate sector and (c) household sectors. In India, household sector is the most dominant sector among these, generating about 70 percent of total savings of the economy in the current years.

Household savings is composed of both financial and physical savings. About half of the household savings are in the form of physical assets such as property and gold and the rest are in the form of financial assets. Among the financial assets of the household sector, safe and traditional assets such as bank deposits and life insurance funds account for the bulk. According to RBI data, less than 5 percent of the total household saving in financial asset is in capital market instruments such as shares and debentures and units of mutual funds (see Table 3.3).

⁹ Poor countries tend to have a low saving rate. The reason is not difficult to understand. A poor person saves a very small fraction of his income because he is compelled to consume a very high proportion of his low income to meet his basic needs (such as food, shelter, clothing and security). If the majority of the population is poor (and the income distribution is not very unequal) then the aggregate saving as a percentage of income for a poor country is also likely to be low. As income grows, people tend to spend lesser and lesser fraction of their income and save more and more. While income is an important factor determining savings, it is not the only one. Cultural factors also influence the saving habits. That is why many countries having higher per capita income have lower saving rates.

Table 3.3 : Components of Household Saving in Financial Assets

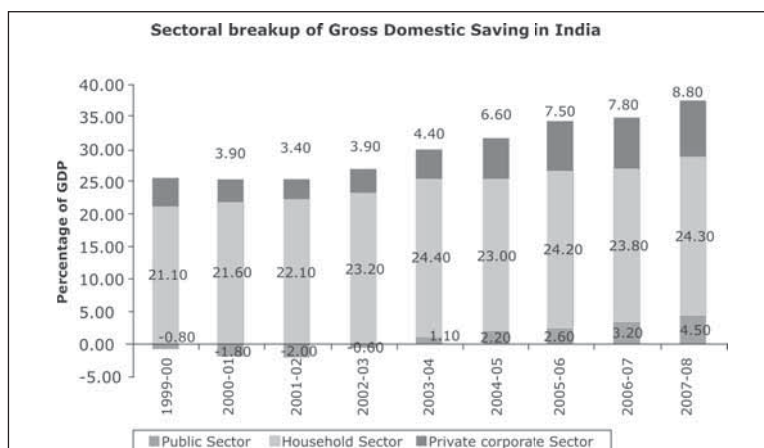
Item							
	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
Currency	8.9	10.5	9.2	8.9	10.2	11.4	12.5
Deposits	40.9	41.6	39.4	47	49.1	52.2	58.5
i) With Banks	35.5	36.7	37.1	46	47.8	50.4	54.9
ii) With Non-banking Companies	2.7	0.9	0.4	1	0.2	0.5	1.8
iii) With Coperative Banks and Societies	2.8	4	2	0	0	0	0
iv) Trade Debt (Net)	-0.1	0	0	0	1	1.3	1.8
Share and Debentures	1.7	0.1	1.1	5.1	9	12.4	2.6
i) Private Corporate Business	0.8	1.1	1.4	1.3	3.7	4.4	4.2
ii) Banking	0	0	0	0.1	0	0.1	0.1
iii) Units of Unit Trust of India	-0.5	-2.2	-0.7	(0.1)	0	0	-0.4
iv) Bonds of public Sector undertakings	0.1	0	0	0	0	0	0.1
v) Mutual Funds (Other than UTI)	1.3	1.2	0.4	3.8	5.3	7.9	-1.4
Claims on Government	17.4	20.2	24	14.6	3	-4	-3.1
i) Investment in Government securities	2.5	4.7	5	2.4	0.3	-2.1	-4.5
ii) Investment in Small Savings, etc.	14.9	15.5	19	12.2	2.7	-1.9	1.4
Insurance Funds	16.1	13.5	13.2	14	17.7	18	20.1
i) Life Insurance Funds	15.5	12.8	12.4	13.4	17.1	17.4	19.5
ii) Postal Insurance	0.3	0.3	0.3	0.3	0.3	0.4	0.3
iii) State Insurance	0.4	0.4	0.4	0.3	0.3	0.2	0.3
Provident and Pension Funds	15	14.1	13.2	10.5	11.1	9.9	9.5
Total Financial Savings	100	100	100	100	100	100	100

Source: Reserve Bank of India

Among the other sectors which generate savings in India, **the private corporate sector** is becoming important. It has increased from 1.0 per cent of GDP in the 1950s to 1.7 per cent of GDP in the 1980s, to 3.8 per cent of GDP in the 1990s and further to 7.8 per cent of GDP in 2006-07. Currently, it accounts for about 23-24 percent of total savings in India.

As regards the public sector (comprising government and its enterprises), the contribution of public sector in total savings has been the lowest and in some years it was negative. Negative savings mean that the sector consumed more than its income. However, since 2003-04, it has made a positive contribution to the GDS (see figure 3.4).

Figure. 3.4 : Sectoral breakup of Gross Domestic Saving in India



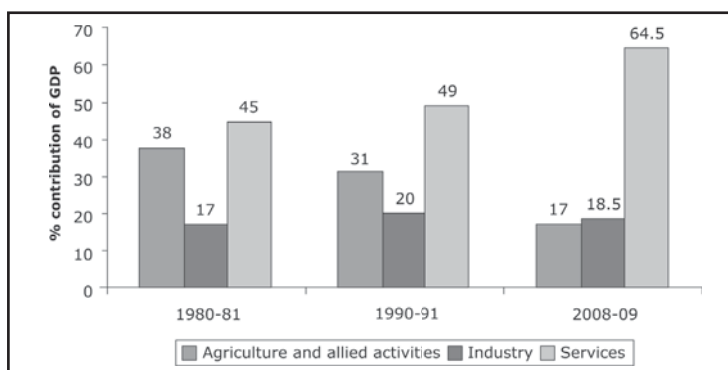
Source: Reserve Bank of India

Because of steady increase in gross domestic savings over the years, India has been able to finance its rising investment primarily from domestic savings and the reliance on foreign savings has been relatively modest.

3.5 The changing composition of India's economic environment

There are three broad sectors in a country's economy. They are (a) agriculture and allied activities, (b) industry and manufacturing sector and (c) the services sector. The structure of Indian economy has gone through some remarkable changes over the years. At the time of independence, agriculture accounted for more than 50 percent of the country's GDP. But since India started liberalizing during the 1980s, the economy has gone through a major structural shift. The contribution of agriculture has gone down drastically over the years and the share of services sector has increased sharply. The contribution of industry has largely remained stagnant (Figure 3.5).

Figure 3.5 : Sectoral Contribution to India's GDP



Source: *Handbook of Statistics on Indian Economy*, Reserve Bank of India

Most countries go through such a transition during their phase of development, where the share of agriculture comes down and the share of industry and services goes up. What is worrying for India is that, though the contributions of these sectors have changed, more than 60 per cent of the population continues to depend on agriculture for its livelihood.

Chapter 4 : Government and Fiscal Policy

4.1. Role of the Government in an Economy

The government plays many important roles in the overall economic system of a country. Though India is slowly moving towards a market based economic system, there is hardly any sector in the economy which is not touched by the government. In fact, even in most developed countries with highly developed markets, the role of the government continues to be important, as can be seen below.

- 1. Providing a platform for improving economic efficiency:** A well functioning legal and stable political system are essential for markets to operate efficiently. The basic role of the government is to provide these facilities. For example, a strong defense is required to protect the country from any external and internal threat. Maintaining an efficient police force and ensuring a good legal system assures domestic and foreign economic agents of a safe and predictable economic environment.

Secondly, there are many sectors which fail to attract any major private investment as they may not be profitable in the short and medium run. Examples of such sectors include education and healthcare services. It is the role of the government to invest in these sectors. Similarly, development of roads, ports, telecommunication network in economically backward areas is also a responsibility of the government. In many of these areas, investment is usually below the desired level if investment decisions are left completely to the private sector which is typically driven by profit maximizing motives.

The government also plays a regulatory role. For certain industries such as drugs and pharmaceuticals, it is important for governments to spell out technical standards for companies to follow, to protect the interests of the consumers. Sometimes the government also sets up regulatory bodies to protect consumer interest. For example, the Indian government has set up regulatory bodies to supervise the telecom sector. By facilitating increasing competition in the sector, the telecom regulator has played a key role in developing the telecom industry tremendously.

- 2. Ensuring an equitable distribution of income:** Distribution of income arising out of completely market driven economic forces can potentially lead to serious imbalances in an economy. If income inequality becomes too large in an economy, it creates both social and economic tension in the system. The government uses its taxation policies to deal with this situation. For example, by taxing the income of the rich at a much higher rate than the income of the poor, the government

attempts to reduce income inequality. Further, some of the tax revenue is used to subsidize the poor in different ways. Taxation thus gives the government a chance to transfer income from the relatively better-off classes to the needy segment of the society.

- 3. Stabilizing the Economy through economic policies:** When the economy slows down or faces a major economic crisis, most often it is the government which comes to the rescue by proper use of monetary and fiscal policies. This is explained in details later. For example, during the recent financial crisis, most governments gave massive stimulus packages to boost demand in the economy.
- 4. Conducting International Economic Policies:** As the economy of a country gradually becomes more integrated with the global economy, the government plays a key role in facilitating and monitoring this integration, so as to maximize the potential benefits for the country. This requires a number of coordinated policy responses, including gradual removal of trade barriers, introducing measures to attract foreign capital into the country, work with other nations to protect the global environment and so on.

To sum up, even when countries move toward more open and market-based economy, the government needs to guide the economy based on a long term strategic vision and decide on the priorities of the nation. In this respect, India has been no exception. To understand the way the Government plays a role in the economic development of a country, it is important to understand government finances. Following is an attempt to explain the concepts necessary to understand government finances in the Indian context.

4.2. Government Expenditure and Revenue: Understanding the government accounts

To fulfill the aforementioned roles, it is important for a government to generate or raise resources and then spend those resources in the most efficient possible manner. Governments raise resources mostly using taxes and spend that money according to the priorities of the society. The use of taxes and government expenditure for attaining policy objectives constitutes the core of fiscal policy.

4.2.1. Government Receipts

Government's total receipt is divided under two heads, Revenue Receipt and Capital Receipts. Revenue receipts include tax and non-tax revenue received by the government. On the other hand, capital receipts include recoveries of loans and borrowing and other liabilities.

Revenue Receipts

Taxes

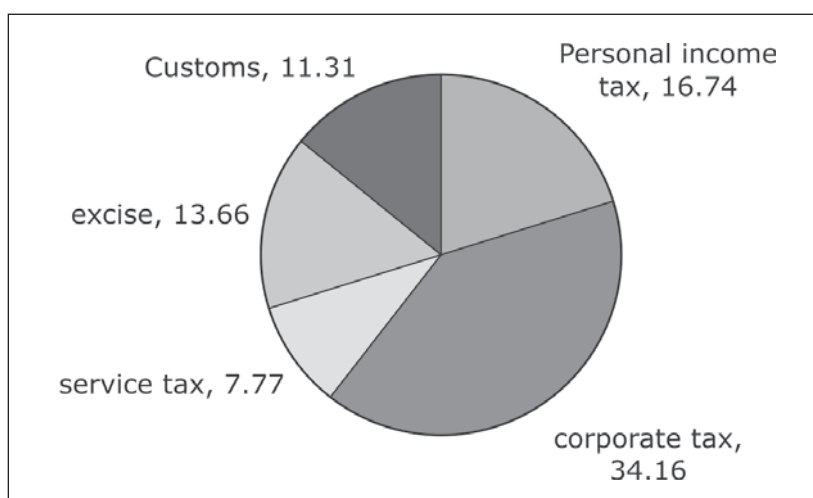
A tax can be defined as a compulsory contribution imposed by a public authority. The public authority can be the central or state government or a local public authority like a municipality.

Taxes can be broadly divided into direct taxes and indirect taxes. A direct tax is imposed and collected directly from an individual (or a legal entity like a company). Examples of direct taxes are income tax, capital gains tax, gift tax, wealth tax etc. These taxes are borne directly by the entity it is levied on. For example, personal income tax, which is levied on the salary earner, has to be borne directly by the salary earner. The salary earners cannot pass on their tax liability to others.

Indirect taxes include customs (a tax on imports) and excise (a tax on production). Such a tax is called 'Indirect tax' because, it is a tax which is collected by an intermediary. The person on whom the tax is levied passes on the tax burden to some other persons. He acts as an intermediary between the government and the ultimate taxpayer. Thus, while a direct tax cannot be shifted to others, an indirect tax can be passed over by the taxpayer to someone else.

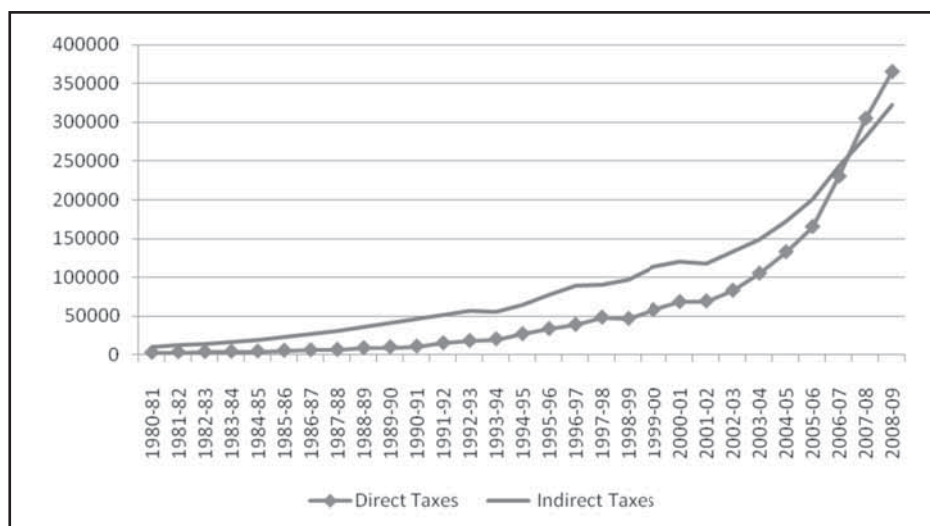
Figure 4.1 shows the composition of India's tax revenue in the year 2009-10, while the Figure 4.2 shows the contribution of direct and indirect taxes of the Central Government from 1980/81. Please note that although the government finances in India include the finances of the Central, State and Municipal Governments, we have focused here only on the Central Government finances.

Figure 4.1 : Percentage Breakup of Government of India's Tax Revenue (2009-10)



Source: Economic Survey

Figure 4.2 : Direct and Indirect Tax Revenue of the Central Government (Rs. Crores)



Source: Handbook of Statistics on Indian Economy

Non-tax Revenue

Besides the revenue collection from taxes, government also collects non-tax revenue. The non-tax revenue of the Union Government includes administrative receipts, net contribution of public sector undertakings including railways, posts, currency and mint and other revenues. In 2008-09, the total non-tax revenue collection was about 17.5 percent of the total tax revenue.

Capital Receipts

Capital receipts do not occur during the normal course of business. These arise when the government sells some of its assets or when it borrows from external or internal sources. Capital receipts can be non-debt receipts or debt receipts. Recoveries of loans and advances and receipts due to sale of government assets and PSUs are classified as non-debt capital receipts. On the other hand, government borrowing from different sources makes up most of the debt-creating capital receipts. For 2010-11, budget estimates indicate that 'market loans' by the government will account for more than 90 percent of total debt-creating capital receipts and 81 percent of total capital receipts (see Table 4.1)

Table 4.1 Capital Receipts by Government of India, Budget Estimates, 2010-11

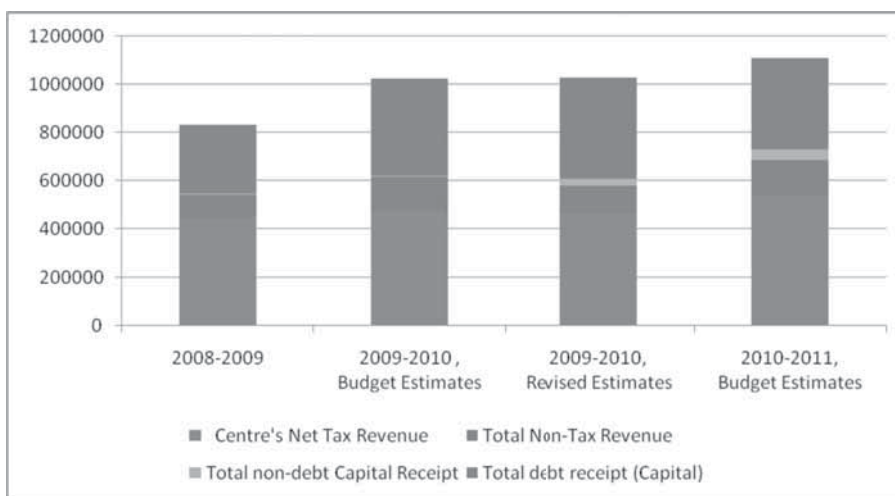
A. Non-debt Receipts	Rs. Crores
1. Recoveries of Loans & Advances	5,129
2. Miscellaneous Capital receipts	4,0000
Total (A)	45,129
B. Debt Receipts	
3. Market Loans	3,45,010
4. Short term borrowings	...

5. External assistance (Net)	22,464
6. Securities issued against Small Savings	13,256
7. State Provident Funds (Net)	7,000
8. Other Receipts (Net)	-6,322
Total (B)	3,81,408
Total Capital Receipts (A+B)	4,26,537

Source: Union Budget 2010-11 (Indiabudget.nic.in)

It is important to be conceptually clear that receipts of the Government include tax and non-tax revenue, non-debt creating capital receipts and debt creating capital receipts. The government needs to raise debt creating capital receipts (for example, by taking market loans) because it cannot fund all of its expenditures from the revenue (tax and non-tax) and non-debt capital receipts. Overall, it can be seen from Figure 4.3 that tax revenue and debt creating capital receipts (essentially market loans) form the bulk of receipts for the government. The next section deals with government expenditures.

Figure 4.3 : Government Receipts from various sources (in Rs Crores)



Source: Union Budget 2010-11

4.2.2 Government Expenditure

All revenue received and loans raised by the Government are credited to the Consolidated Fund of India and all expenditure of the Government are incurred from this fund. Money can be spent through this fund only after getting approval from the Parliament. The Consolidated Fund has further been divided into 'Revenue' and 'Capital' divisions.

4.2.2.1 Revenue Expenditures

Revenue expenditure involves routine government expenditure, which does not create any asset for the government. In other words, revenue expenditure is incurred by the government for the normal running of government departments and various services. Examples of revenue

expenditure are salaries and pensions of government employees, subsidy payments for food fertilizers etc, goods and services consumed within the accounting period, interest charges on debt incurred by government etc.

4.2.2.2 Capital Expenditures

Capital expenditure can be defined as an expenditure which leads to addition of material assets for the economy. One feature of capital expenditure is that the benefits from capital expenditure are reaped over a period of time. Capital expenditure does not include operating expenditure. Examples of capital expenditure are building infrastructure projects like roads and ports, buying land, making buildings, purchase of machinery and equipment etc.

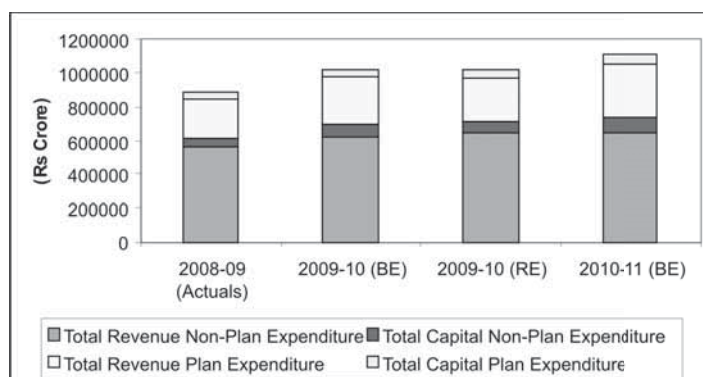
To sum up, while revenue expenditure is for the normal running of government departments and various services; capital expenditure results in creation of assets in the economy.

4.2.2.3 Plan and Non-Plan Expenditures

Since the country follows a plan based model of an economy, the total expenditure of the government is divided under plan and non-plan expenditures. The plan expenditure is directly related to expenditure on schemes and programmes budgeted in the government's plans. The non-plan expenditure is the expenditure incurred on establishment and maintenance activities. Non-plan capital expenditure mainly includes defence, loans to public enterprises, loans to States, Union Territories and foreign governments. On the other hand, non-plan revenue expenditure includes expenses on interest payments, subsidies (mainly on food and fertilizers), wage and salary payments to government employees, grants to governments of States and Union Territories, pensions, police services, economic services in various sectors, other general services such as tax collection, social services, and grants to foreign governments.

In India, revenue expenditure tends to be much higher than capital expenditures under both plan and non-plan heads (Figure 4.4). Low capital expenditure can be a problem for a country like India because it suffers from weak infrastructure such as road, electricity, water etc. Low investment in these areas can impede the pace of economic growth.

Figure 4.4 : Revenue and Capital Expenditures under Plan and Non-Plan head (in Rs. Crores)

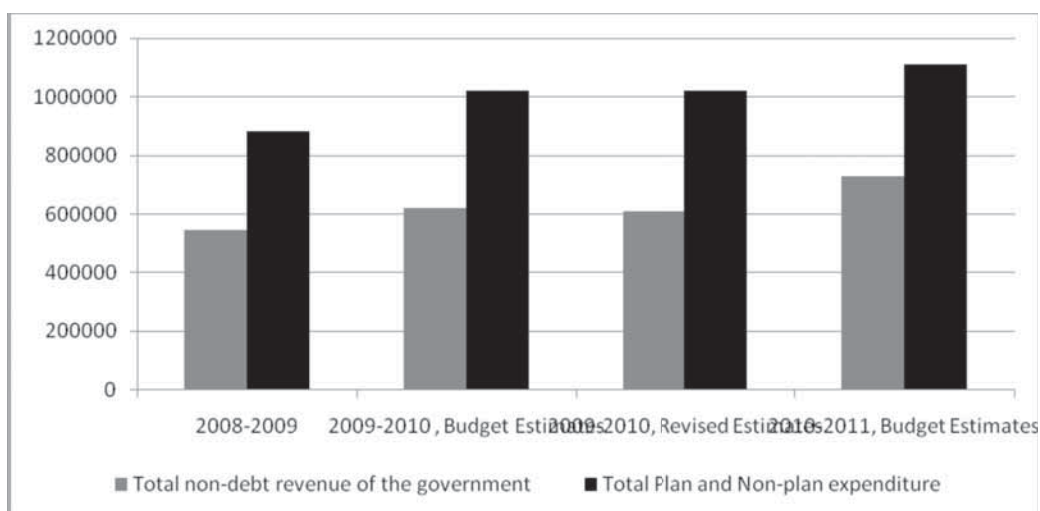


Source: Union Budget, 2010-11

4.3 Bringing together the Revenue and the Expenditure side

As the revenue and expenditure of the government depends on a number of variables, there is no guarantee that these will exactly match each other. For most years, Indian government's expenditure has exceeded its revenue. Figure 4.5 shows the gap between total plan and non-plan expenditure by the government in the last few years and the total non-debt creating revenue of the government. The figure shows that there is a significant gap between these two. The government finances this deficit either by borrowing from the open market through sale of government bonds or by printing money. However, each of these measures has their own limitations which will be discussed in more detail in Chapter-5. But before we discuss that, it will be important to understand the different deficit indicators that are associated with the budget.

Figure 4.5 : Income and Expenditure of government of India (Rs. crores)



Source: Union Budget, 2010-11

4.4 The Deficit Indicators

Government uses several deficit indicators to ascertain the state of government finances and each of these has its own implication and importance in government finances.

Revenue Deficit: Revenue Deficit refers to the excess of revenue expenditure over revenue receipts.

In other words, Revenue Deficit (RD) = Revenue Receipts (RR) – Revenue Expenditure (RE)

Gross Fiscal Deficit is the excess of total expenditure over the sum total of revenue receipts and recovery of loans. This indicates the total borrowing requirements of government from all sources.

In other words, Fiscal Deficit (FD) = {Total Expenditure – (Revenue receipts + recovery of loans)}

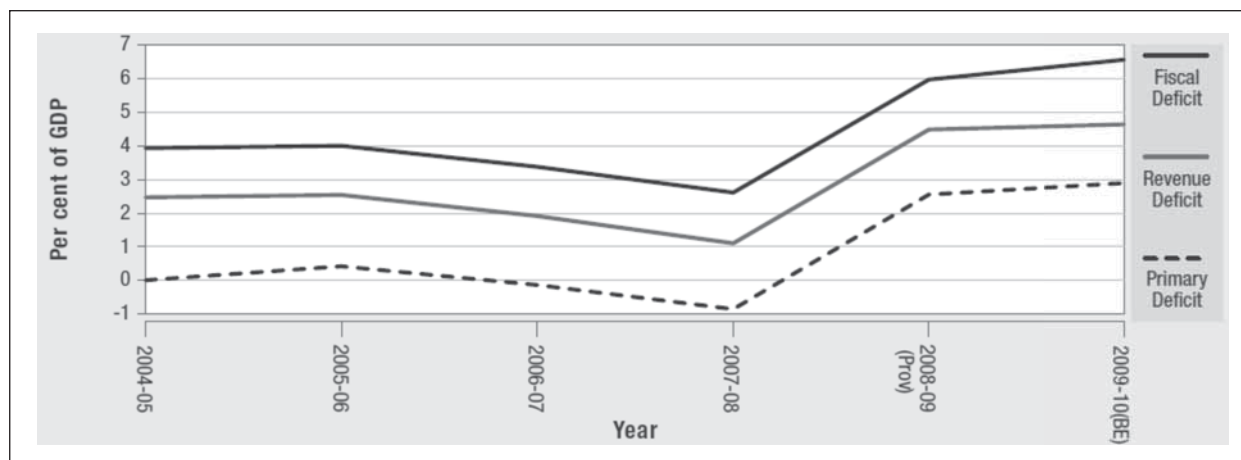
Net fiscal deficit is the gross fiscal deficit less net lending of the Central Government.

Primary deficit is measured by deducting interest payments from gross fiscal deficit.

4.5 Financing of the deficit by the government

India's fiscal deficit is estimated to have touched around 400 thousand crore rupees in 2009-10. This amounts to around 6.5 percent of the country's GDP. Figure 4.6 shows how different deficit indicators have moved during the last few years.

Figure 4.6 : Different Deficit Indicators of India (as a % of GDP)



Source: Economic Survey, 2009-10

It is noteworthy that historically both revenue and fiscal deficit have been at elevated levels in India. Between 2004-05 and 2007-08, deficit indicators showed signs of moderation. While both high revenue and fiscal deficits are detrimental to the economy, higher revenue deficit is a matter of greater concern. Because revenue deficit essentially implies that the government is living beyond its means and is borrowing money to fund current consumption. This reduces the country's capacity to incur capital expenditure, which is basically used to build productive assets in the country,. On the other hand, fiscal deficit involves borrowing money to finance capital expenditure. This might not be a bad thing as long as long-run returns from the investment projects (or assets that are being built) generate resources to offset the initial borrowing. Therefore, it is important to understand what type of deficit a country is running.

High deficits incurred by the government are detrimental for the economy, because they lead to not only higher inflation, but also higher interest rates. Financing huge deficits is a difficult task for any government. The government can finance the fiscal deficit by borrowing from the central bank or it can borrow from the domestic market by selling government bonds in the open market. If the government borrows money from the central bank, it is essentially financing deficit by printing money. If too much money gets into the system without any potential increase in output, then this increase in money supply can become inflationary.

Secondly, it is also argued that if an economy is operating close to full employment level, that is if there is no excess production capacity among the major sectors of the economy, then an increase in fiscal deficit may lead to inflationary pressures. This is so, because high fiscal deficit means high aggregate domestic demand and since the production cannot adjust to match the higher demand (because of lack of extra production capacity), then it results in higher inflation. For example, if the government plans to build a stadium in a country where the cement and steel industry is operating close to their optimum capacity, a sudden increase in demand from steel and cement might lead to a rise in prices of cement and steel. Consequently, this may push up the rate of inflation in the country.

Finally, if the government raises money from the domestic market, which is typically done by selling government bonds to the banks, the supply of bonds increases in the market and as a result of which rate of interest goes up. Increase in the rate of interest increases the cost of capital for the private sector and dampens the flow of private investment which is known as 'crowding out' of private investment. However, in developing countries like India, if fiscal deficit is increasing because of high capital expenditure on building domestic infrastructure, then it can actually attract more private capital in spite of the increase in rate of interest.

In recent years, financing of deficit in India has been done by market borrowings to a large extent. It has often been argued that high fiscal and revenue deficits are affecting capital formation in the Indian economy by reducing private investment through an increase in interest rate ('crowding out') and at the same time reduced government expenditure as a significant portion of its resources are channelized to fund consumption expenditure or revenue deficit. Such a trend can pose as a major impediment to the sustainability of India's high economic growth rate.

4.6 Fiscal Deficit and Sustainability of Internal Debt

Financing of persistent fiscal deficit creates another set of problems for policymakers. If the government uses domestic debt to finance the fiscal deficit, the debt obligation of the government increases. Also, debt service requirements increase. This may lead to a situation where a major part of the revenue earned by the government is spent on debt service requirements. This will limit the ability of the government to develop capital stock and physical infrastructure for the economy which is crucial to enhance and sustain a high level of economic growth. How much domestic debt a government can handle, is a difficult question to answer as the debt sustainability depends on a number of economic parameters.

As high fiscal deficit can lead to a number of problems including debt sustainability, inflation (under certain circumstances) and crowding-out, the government of India has been trying to maintain fiscal prudence by containing fiscal deficit level. Toward this end, in 2003, the government enacted the Fiscal Responsibility and Budget Management Act (FRBMA) for

medium-term management of the fiscal deficit. The FRBMA imposes some constraints on the expenditure pattern of the government. It requires that the government to reduce the revenue deficit gradually, so that it eventually disappears and also to reduce the fiscal deficit gradually to a level below 3 percent of GDP within a specified period. However, government has failed to achieve these targets, particularly in the last couple of years because of fiscal stimulus packages that it introduced to tackle the economic slump.

4.7 Fiscal policies and their impact on the financial markets

The most direct impact of fiscal policies on the financial market is through taxation. In our discussion on government revenue, we have seen that tax revenue plays a very important role in government finances. The government can alter tax rates in a bid to influence tax revenue generation. The government can try to change the tax rates, it can impose new taxes or abolish existing ones or can use measures to broaden the tax base. In each of these cases, it will affect the income and consumption pattern of a large number of people. Depending upon the tax measure, it will have a positive or a negative impact on the financial market. For example, if personal income tax rate is lowered then it is likely to increase the disposable income of people and can have a positive impact on the financial markets through an enhanced level of financial savings. On the other hand, introduction of a long-term capital gains tax ¹⁰ may have the adverse impact on the market.

¹⁰ If any Capital Asset is sold or transferred, the profits arising out of such sale are taxable as capital gains in the year in which the transfer takes place.

Table 4 A.1 : Calculation of Deficits as done in the budget documents

	2004-05	2005-06	2006-07	2007-08*	2003-09 (B.E.)	2008-09 (Prov.)	2009-10 (B.E.)
				{Rs. crore}			
1. Revenue Receipts (a+b)	3,05,991	3,47,077	4,34,387	5,41,864	6,02,935	5,44,651	6,14,497
(a) Tax Revenue (Net of States' share)	2,24,798	2,70,264	3,51,182	4,39,547	5,07,150	4,47,726	4,74,218
(b) Non-tax Revenue	81,193	76,813	83,205	1,02,317	95,785	96,925	1,40,279
2. Revenue Expenditure	3,84,329	4,39,376	5,14,609	5,94,433	6,58,118	7,91,697	8,97,232
of which:							
(a) Interest Payments	1,26,934	1,32,630	1,50,272	1,71,030	1,90,807	1,90,485	2,25,511
(b) Major Subsidies	44,753	44,480	53,495	67,498	67,037	1,23,640	1,06,004
(c) Defence Expenditure	43,862	48,211	51,682	54,219	57,593	72,836	86,879
3. Revenue Deficit (2-1)	78,338	92,299	80,222	52,569	55,183	2,47,046	2,82,735
4. Capital Receipts	1,92,261	1,58,661	1,49,000	1,70,807	1,47,949	3,36,818	4,06,341
of which:							
(a) Recovery of Loans*	62,043	10,645	5,893	5,100	4,497	6,158	4,225
(b) Other Receipt (Mainly PSU Disinvestment)	4,424	1,581	534	38,795	10,165	546	1,120
(c) Borrowings and Other Liabilities \$	1,25,794	1,46,435	1,42,573	1,26,912	1,33,287	3,30,114	4,00,996
5. Capital Expenditure"	1,13,923	66,362	68,778	1,18,238	92,766	89,772	1,23,606
6. Total Expenditure [2+5=6(a)+6(b)]	4,98,252	5,05,738	5,83,387	7,12,671	7,50,884	8,81,469	10,20,838
of which:							
(a) Plan Expenditure	1,32,292	1,40,638	1,69,860	2,05,082	2,43,386	2,75,450	3,25,149
(b) Non-Plan Expenditure	3,65,960	3,65,100	4,13,527	5,07,589	5,07,498	6,06,019	6,95,689
7. Fiscal Deficit [6-1-4(a)-4(b)]	1,25,794	1,46,435	1,42,573	1,26,912	1,33,287	3,30,114	4,00,996
8. Primary Deficit [7 -2 (a)]	-1,140	13,805	-7,699	-44,118	-57,520	1,39,629	1,75,485
		(As per cent of GDP)					
1. Revenue Receipts (a+b)	9.4	9.4	10.1	11.0	11.4	9.8	10.0
(a) Tax Revenue (Net of States' Share)	6.9	7.3	8.2	8.9	9.6	8.0	7.7
(hi Non-tax Rsvsniiie	2.5	2.1	1.9	2.1	1.8	1.7	2.3
2. Revenue Expenditure	11.9	11.9	12.0	12.0	12.4	14.2	14.6
of which:							
(a) Interest Payments	3.9	3.6	3.5	3.5	3.6	3.4	3.7
(b) Major Subsidies	1.4	1.2	1.2	1.4	1.3	2.2	1.7
(c) Defence Expenditure	1.4	1.3	1.2	1.1	1.1	1.3	1.4
3. Revenue Deficit (2-1)	2.4	2.5	1.9	1.1	1.0	4.4	4.6
4. Capital Receipts	5.9	4.3	3.5	3.5	2.8	6.0	6.6
of which:							
(a) Recovery of Loans*	1.9	0.3	0.1	0.1	0.1	0.1	0.1
(b) Other Receipts (Mainly PSU Disinvestment)	0.1	0.0	0.0	0.8	0.2	0.0	0.0
(c) Borrowings and Other Liabilities \$	3.9	4.0	3.3	2.6	2.5	5.9	6.5
5. Capital Expenditure** i	3.5	1.8	1.6	2.4	1.7	1.6	2.0
6. Total Expenditure [2+5=6(a)+6(b)]	15.4	13.6	13.6	14.4	14.2	15.8	16.6
of which:							
(a) Plan Expenditure	4.1	3.8	4.0	4.1	4.6	4.9	5.3
(b) Non-Plan Expenditure	11.3	9.9	9.7	10.3	9.6	10.9	11.3
7. Fiscal Deficit [6-1-4(a)-4(b)]	3.9	4.0	3.3	2.6	2.5	5.9	6.5
8. Primary Deficit [7-2{a)]	0.0	0.4	-0.2	-0.9	-1.1	2.5	2.3
Memorandum Items				{Rs crore}			
(a) Interest Receipts	32,387	22,032	22,524	21,060	19,135	20,556	19,174
(b) Dividend and Profit	15,934	18,549	18,969	21,531	24,758	20,653	19,340
(c) Non-Plan Revenue Expenditure	2,96,835	3,27,518	3,72,191	4,20,861	4,48,351	5,56,521	6,18,834

Source : Union Budget documents.

Based on Provisional Actuals for 2007-08.

* Includes receipts from States on account of Debt Swap Scheme for 2004-05. " Includes repayment to National Small Savings Fund for 2004-05.

\$ Does not include receipts in respect of Market Stabilization Scheme, which will remain in the cash balance of the Central Government and will not be used for expenditure.

Note: 1. The ratios to GDP at current market prices are based on CSO's National Accounts 2004-05 series.

2. The figures may not add up to the total due to roundingJ approximations.

Source: Union Budget 2009-10 (Indiabudget.nic.in)

Chapter 5 : Money and Monetary Policy

This chapter will talk about the role of money in an economy. It will also introduce the concept of demand for and supply of money. Understanding the functioning of the monetary system is important because money market constitutes an important segment of the financial market.

5.1 What is the role of Money?

Money plays a number of extremely important roles in a modern economy. The most obvious role of money is as a **medium of exchange**. During the early days of human civilization, it was realized that the barter system suffers from the problem of “double coincidence of wants”. This means that a barter system will only work if two persons can be found whose disposable possessions mutually suit each other’s wants. In a country or in an economy, there may be many people wanting a particular good and there may be many people who possess those things wanted, but to allow a barter or a direct exchange of goods to happen, there has to be a double coincidence of wants. For example, to have his food, a hungry tailor will have to find a farmer who needs a shirt. This is unlikely to happen.

The second problem with a pure barter system is that it must have a rate of exchange, where each commodity is quoted in terms of every other commodity. This complication can be avoided if any one commodity be chosen, and its ratio of exchange with each other commodity is known. Such a commodity can be used as a unit of account or a numeraire.

To overcome these problems of barter, use of a commonly accepted medium of exchange started. This medium also acted as a **measure of value**. Different civilizations used different commodities as the medium of exchange. In some African countries, the medium of exchange was decorative metallic objects called Manillas. The Fijians used whales’ teeth for the same purpose. In some parts of India, cowry or sea shells were used as the medium of exchange and measure of value. Such usages of commodities as the medium of exchange and measure of value correspond to what we presently call ‘*Money*’. By the 19th century, commodity money narrowed down to usages of precious metals like silver and gold.¹¹ This however limits the amount of money in the economy as it is constrained by the availability of precious metals which are exhaustible resources. Since then we have moved to an era of paper money. The use of paper money has become widespread because it is a convenient medium of exchange, is easy to carry and store and is also a measure of value for the large number of goods and services produced in a modern economy.

¹¹ Interestingly, during the World War II, cigarettes emerged as a form of commodity money in prisoner of war (POW) camps.

The value of money stems from the fact that private individuals cannot legally create money. Only designated authorities are allowed to supply money. This limitation in the supply of money ensures that money retains its value. This also means that money can also be viewed as a **store of wealth**.

Therefore, to summarize, money has three broad roles in an economy:

- a) It is a medium of exchange
- b) It is a measure of value
- c) It can be used as a store of wealth

It is worth pointing out here that modern currencies are not backed by any equivalent gold or silver reserves. Based on a host of macroeconomic factors, the government or the central bank decides the amount of money to be supplied to an economy.

5.2 Components of Money in India

In general terms, it can be said that money consists of coins, paper money and withdrawable bank deposits. Bank deposits are part of money supply because one can write cheques on these accounts and the cheque possesses the essential qualities of money. Moreover, increasingly credit cards and electronic cash are becoming an important component of the payment system. Continuing financial innovations are causing widening of the definition of money. The Reserve Bank of India (RBI) publishes 4 measures of monetary aggregates in India. These measures define money based on progressive liquidity or spendability¹².

- a. $M1 = \text{currency held by the public (currency notes and coins)} + \text{Demand deposits with the banking system (on current and saving bank accounts)} + \text{Other demand deposits with RBI.}$
- b. $M2 = M1 + \text{saving deposits with Post office savings banks.}$
- c. $M3 = M1 + \text{time deposits with the banking system.}$
- d. $M4 = M3 + \text{total deposits with the post office savings organization (excluding National Savings Certificates).}$

M1 represents the most liquid form of money among the four money stock measures adopted by RBI. As we proceed from M1 to M4, the liquidity gets reduced. In other words, M4 possesses the lowest liquidity among all these measures. The importance of all these four money stock measures varies from the point of view of monetary policy.

¹² These definitions are based on RBI's Third Working Group on Money Supply. The formal report of this group is published as "Report of the Working Group on Money Supply: Analytics and Methodology of Compilation", Reserve Bank of India, 1998, Mumbai.

5.3 Demand for Money

There are three motives underlying the demand for money i.e. transaction demand for money, speculative demand for money and precautionary demand for money. These three motives are explained below.

First, the transaction motive of demand for money (also called transaction demand for money) means that money is demanded to carry out certain transactions. It is likely to be positively related with income. This is simply because higher the income of an economic agent, higher is the expected volume of economic transaction. To facilitate higher volume of economic transactions, more money is required. However, the transaction demand for money is influenced by the prevailing rates of interest and the expected rate of return on alternative assets like shares. This is because money held in the form of idle cash provides liquidity and facilitates economic transactions but it does not give a positive return. Therefore, the economic agents will be facing a tradeoff between the utility they derive from the liquidity of the available cash and the expected return they are forgoing on alternative assets. So, they will try to economize on their money holding, when the expected returns on alternative assets go up.

The second motive to demand money is called speculative motive. The demand for money arising out of speculative motive is called speculative demand for money. The speculative demand for money depends on people's expectation of the future interest rate movements. John Maynard Keynes, in laying out speculative reasons for holding money, stressed the choice between money and bonds. If agents expect the future nominal interest rate (the return on bonds) to be lower than the current rate they will then reduce their holdings of money and increase their holdings of bonds. If the future interest rate does fall, then the price of bonds will increase and the agents will have realized a capital gain on the bonds they purchased. This means that the demand for money in any period will depend on both the current nominal interest rate and the expected future interest rate. The speculative demand for money is low when people expect interest rates to fall in future and vice versa.

Thirdly, the precautionary demand for money arises because of uncertainty regarding future income. For example, one does not know when one would fall sick or have accident or need money for some unforeseen requirement. The money demanded to cover these expenses is called precautionary demand.

5.4 Supply of Money

The world has transited from commodity money to paper money. A 'commodity money' like gold, silver or copper has some intrinsic value. That means that even if the commodity is not used as money, it will have some value of its own. However, the same cannot be told

about paper currencies. A paper currency note does not have any intrinsic value or value of its own. Such type of money is called "fiat money". A 'fiat' is an order and fiat money is established as money by government order. When an economy relies on fiat money, some agency is required to regulate and support fiat money. In most countries, a 'Central Bank' has been created to support fiat money, oversee the banking system and regulate the quantity of money supply in the economy. In India, the Reserve bank of India (RBI) is the central bank. Other examples of central banks are Federal Reserve or Fed in the USA, the Bank of England in UK and the European Central Bank in the Euro area.

5.5 Different Roles of RBI in India

The Reserve Bank, established through the Reserve Bank of India Act, 1934 commenced its operations in 1935. It draws its powers and responsibilities through other legislations also such as the Banking Regulation Act, 1949. The important roles RBI undertakes in the Indian economy are as follows:

1. Issuer of Currency: it issues coins and currency notes in adequate quantity,
2. Supervisor of the Financial System: it prescribes regulations for sound functioning of banks and financial institutions, including non-banking finance companies. It promotes best practices in risk management and corporate governance to protect depositors' interest and to enhance public confidence in the financial system of the country.
3. Banker to the Government: It maintains accounts of central and state governments. It performs merchant banking function for the central and the state governments.
4. Bankers' Bank: It ensures adequate liquidity in the financial system and in individual banks, on a daily basis. When a financially troubled bank look for funds, the RBI also performs the 'lender of the last resort' function for such banks.
5. It conducts monetary policy in India with a view of price and exchange rate management.

5.5.1 How RBI regulates Money Supply in the Economy

Like other central banks of the world, one of the most important responsibilities of RBI is to control the amount of money that is available to the Indian economy. This is called money supply management. The decisions regarding the supply of money in the economy come under the purview of 'Monetary Policy'. Monetary Policy is the process by which the central bank regulates the supply of money in the economy and influences the cost of liquidity in the financial system. The RBI announces changes in the monetary policy periodically depending on its assessment of the macroeconomic and monetary developments in the economy. The next few sections will discuss how money supply is regulated in the Indian economy.

In the era of gold standard, money supply by each central bank of the world was constrained by the amount of gold it possessed. As we are currently in a fiat money system, the supply of money is no longer constrained by the availability of gold. In other words, a central bank can print as much money as it wants to put in the system. What determines the volume of banknotes in a certain period? According to the RBI,

"The Reserve Bank decides the volume and value of banknotes to be printed each year. The quantum of banknotes that needs to be printed, broadly depends on the requirement for meeting the demand for banknotes due to inflation, GDP growth, replacement of soiled banknotes and reserve stock requirements".¹³

The most usual way for a central bank to change money supply is through open market operations (OMOs). OMOs are sales and purchases of government securities or bonds. If a central bank buys bonds from the public in the nation's bond markets, then it is increasing money supply in the economy. Conversely, when the central bank is selling bonds, it is withdrawing money from the system and reducing the money supply.

5.6 What are the roles of Commercial Banks in Money Supply?

Commercial banks play a very important supplementary role in the creation of money in the economy. Banking systems in India, like most other countries, work on the principle of fractional reserve system. In this system, banks are required to keep a certain fraction of its total deposits in reserves with the central bank (this is called Cash Reserve Requirement or CRR) and lend out the rest of the money to their borrowers. The reserve requirements play a very important role in 'creating' money in a modern economy.

To see how a fractional reserve system can create money, let us first consider the case where all deposits are held as reserves with the central bank: banks accept deposits, place the money as reserve with the central bank, and leave the money there until the depositor makes a withdrawal or writes a check against the balance. Therefore, if an economic agent is depositing x amount of money in a bank, the amount of total currency available with the public goes down by x and amount of demand deposits goes up by x . So money supply will not change. To summarize one can say that in a 100% CRR system, all deposits are held in reserve and thus the commercial banking system does not affect the supply of money.

Now, suppose the reserve requirement tells the banks that they need to keep only 10 percent of their deposits as reserves. Assume that the RBI has bought a Rs 1,000 government bond from a person Mr. A.

¹³ <http://www.rbi.org.in/scripts/FAQView.aspx?Id=39>

Mr. A now deposits that Rs. 1,000 in his account at Bank 1. Bank 1, will not want to keep the entire Rs 1,000 as reserves as it will hardly earn any interests on the reserves. So Bank 1, keeps Rs. 100 as reserves and lends out Rs 900 to Mr. B. Therefore, the total money supply is now Rs. 1,000 (Mr. A's deposit with Bank 1) + Rs. 900 (Cash with Mr. B) = Rs 1,900

Mr. B buys a book with that amount and the book seller again deposits Rs 900 in his bank account in Bank 2. Bank 2 will again keep Rs 90 as reserves and will lend out the rest to Mr C. So the total money supply now becomes Rs 1,900 + Rs 900 (bookseller's deposit with Bank 2) + Rs 810 (cash with Mr C) = Rs 2,710.

Table 5.1 : Creation of Money through Fractional Reserve System

		Total Money Supply= Currency + Deposits with the banks
Stage 1. RBI buys bond	Releases Rs 1,000	1000
Bank 1	Keeps Rs 100 as reserve Lends out Rs 900	1000 + 900 = 1900
Bank 2	Keeps 10% of 900 as reserve Lends out Rs 810	1900+810= 2710

Therefore, between the Bank 1 and Bank 2, it has been possible to increase the original supply of Rs 1,000 from RBI to Rs 2710 (check Table 5.1 for a summarized version). This process can go on. If rr is the reserve requirement, then in mathematical terms it can be shown that the total money supply will be:

$$\begin{aligned}
 \text{Total Money Supply} &= [1 + (1-rr) + (1-rr)^2 + (1-rr)^3 + \dots] \times \text{Rs } 1000 \\
 &= (1/rr) \times \text{Rs } 1000 \\
 &= (1/.1) \times \text{Rs } 1000 \text{ (since } rr \text{ is 10 percent or 0.1)} \\
 &= \text{Rs } 10,000
 \end{aligned}$$

This shows how commercial banks under the fractional reserve system can create money and liquidity in the system. The ratio $(1/rr)$ is called the money multiplier¹⁴.

Note that there might be numerous leakages in real life so that the actual value of money multiplier might be less than what the reserve requirement figure may indicate. For example, economic agents may not deposit the entire amount of money they receive to a commercial bank. Similarly, commercial banks might also have excess reserves with the central bank (that is, reserves which are above the reserve requirement).

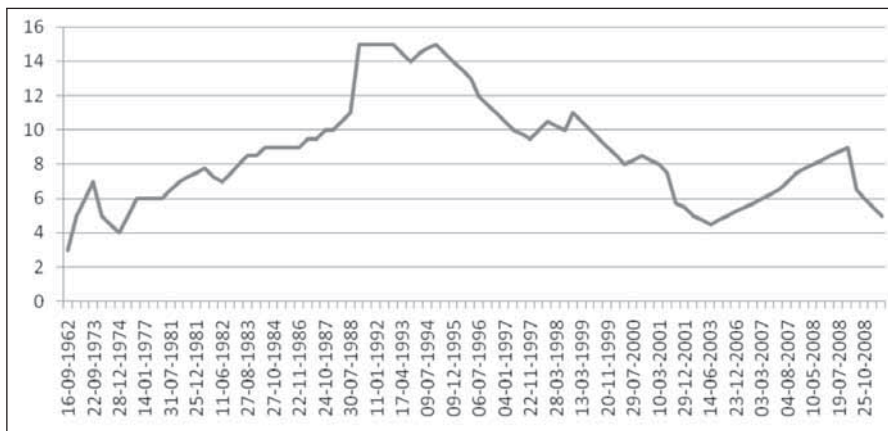
It should also be apparent from the above exercise that the central bank can alter the money supply in the economy by changing the reserve requirements. For example, using

¹⁴ Money multiplier is a measure of the extent to which the creation of money in the banking system causes the growth in the money supply to exceed growth in the monetary base.

the above example, total amount of money created through the banking system will be Rs 10,000 if the reserve requirement is 10 percent. However, total money created would have been only be Rs 5,000 if the reserve requirement is made 20 percent.

In India, the reserve requirement is called the Cash Reserve Ratio (CRR). CRR refers to the liquid cash that banks have to maintain with the Reserve Bank of India (RBI) as a certain percentage of their net demand and time liabilities. The homepage of RBI website provides latest information about the CRR rates. Figure 5.1 shows how the CRR has changed over the years, while Figure 5.2 shows how the value of the money multiplier has changed during the last few years.

Figure 5.1 : The CRR over the years (in percentage)



Source: RBI Handbook of Statistics on Indian Economy

Figure 5.2 : Value of the Money Multiplier in India



Source: Mohanty (2009)¹⁵

¹⁵ Global Financial Crisis and Monetary Policy Response in India by Deepak Mohanty. RBI (Speech delivered by Deepak Mohanty, Executive Director, Reserve Bank of India at the 3rd ICRIER-InWEnt Annual Conference on 12th November, 2009 at New Delhi. This is available at <http://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/FCMP12112009.pdf>)

5.7 Other Instruments of Money Supply

Besides CRR, , RBI also uses some 'policy' interest rates as instruments for controlling money supply such as bank rate, repo rate, reverse repo rate etc. Bank rate is the rate at which the central bank offers refinance to the commercial banks. An increase in the 'bank rate' leads to an increase in the cost of borrowing by the commercial banks from the central bank and thereby discourages bank borrowing from central bank. Further, as banks' cost of borrowing goes up, they are forced to raise their lending rates. This leads to a reduction in the growth of money supply. The opposite occurs when the Bank rate is reduced. However, RBI has not depended much on the 'Bank Rate' to influence the growth in money supply lately and it is increasingly depending upon open market operations (OMOs) for sterilizing capital flows and managing liquidity in the system. In the last few years, RBI has developed the Liquidity Adjustment Facility (LAF) as an effective instrument for its OMOs.

The LAF is used as a system of sterilization and liquidity management by RBI. Two rates of interest viz. repo and reverse repo rate constitutes the LAF system. Repo (Repurchase Agreement) instruments enable commercial banks to make short-term borrowing from the central bank through the selling of debt instruments. Thus, the repo rate is the rate at which the commercial banks borrow money from RBI against a collateral of government securities. In other words, repo denotes injection of liquidity by the central bank into the economy (through the commercial banks) against eligible collateral. On the other hand, the reverse repo rate represents the opposite. It is the rate at which commercial banks park their surplus liquidity with the central bank. In other words, reverse repo denotes the rate at which RBI absorbs liquidity from the system.

Between repo and reverse repo, reverse repo is the lower rate. The rationale for this can be explained from two angles. First, under the reverse repo transactions, commercial banks park their funds with the RBI. Therefore this transaction has the lowest possible risk. As rate of interest and risk are positively related, the rate of interest should be lowest in reverse repo.

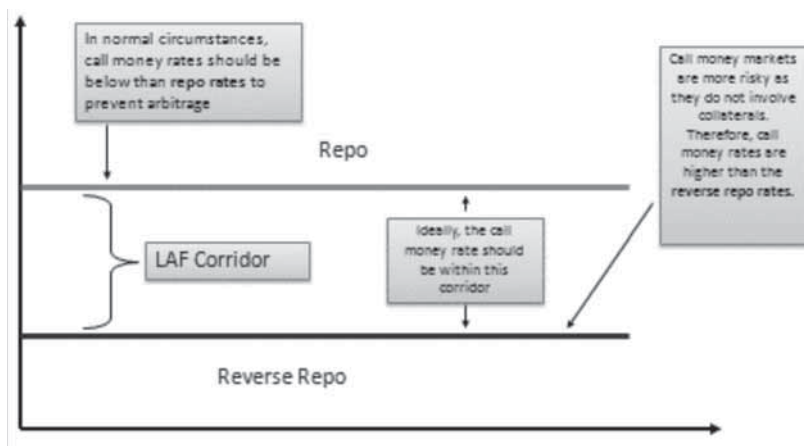
Secondly, it can also be argued that if reverse repo rate is higher than the repo rate, then it is opening up arbitrage possibility for the commercial banks. This will happen because the commercial banks will be able to borrow money at repo rate and then they will be able to park the money with the central bank at the reverse repo rate (the assumption here being $\text{repo rate} < \text{reverse repo rate}$). This is absurd. Therefore, reverse repo is the lower rate. The gap between the reverse repo rate and the repo rate is called the LAF corridor (Figure 5.3).

The Reserve Bank of India can influence the borrowing and lending rates of commercial banks by changing the repo and the reverse repo rates. Any increase or decrease in these rates result in similar movements in borrowing and lending rates of commercial banks.

The LAF corridor also influences the call money rate in the system. Call Money rate is the overnight inter-bank borrowing rate. The Call Money Market is the most active and sensitive part of the organized money market in the country because it registers very quickly the pressures of demand and supply for funds operating in the money market. The LAF corridor provides a theoretical floor and ceiling for the call money rates because of the reasons stated below.

If the call money rate determined freely by the demand for and supply of short-term funds at any given time is lower than the reverse repo level, then commercial banks with surplus liquidity would prefer to park their money with RBI at the reverse repo rate (rather than with other banks in need for short-term funds) to ensure enhanced safety and better return from such transactions. So the call money rates will have to be higher than or equal to reverse repo rates. On the other hand, if the call money rates determined freely by the demand for and supply of short-term funds at any given time become higher than the repo rate, then banks which are in need of funds, have the option of borrowing it from the RBI at a cheaper rate. Therefore, in theory, call money rates should stay within the LAF corridor. However, in practice, the overnight inter-bank lending rates do not always stay within the LAF corridor. Introduction of LAF has helped to stabilize the call money rates to a great extent.

Figure 5.3 : The LAF Corridor



5.8 Market Stabilization Scheme

LAF is an ideal tool for managing short-term liquidity problems. Keeping in view of the surging capital inflows and the resultant excess liquidity in the system, RBI felt the need for other instruments besides LAF to fulfill the objective of absorbing liquidity of a more enduring nature. With an aim to absorb more 'long-term' liquidity, RBI introduced a new instrument called the Market Stabilization Scheme (MSS) in 2004. Under this arrangement, in addition to the normal borrowing requirements, the Government issues Treasury Bills and/or dated securities for the purpose of absorbing excess liquidity from the system. The

MSS proceeds are held in a separate identifiable cash account by the Government and are appropriated only for the purpose of redemption and/or buyback of the Treasury Bills and/or dated securities issued under the MSS. To sum up, while LAF is used for more short term liquidity management, MSS is for managing liquidity which is more long-term in nature.

5.9 Use of Monetary policy

RBI is the apex institution in administering the monetary policy measures in the Indian economy. RBI's conduct of monetary policy has been guided by the twin objectives of maintaining price stability and enhancing economic growth. The prevalent phase of business cycle determines RBI's direction of monetary policy. In case of high inflationary situation, which typically happens when the economic growth is robust, RBI takes contractionary monetary policy measures by raising key policy rates like CRR, repo and reverse repo rates to absorb excess liquidity from the system. By resorting to such measures, RBI essentially tries to reduce the money supply in the economy which leads to a rise in the interest rates. Rising interest rates reduce aggregate demand and thereby contain inflationary pressure. However, the pace of economic growth would be affected under such policy framework. Since we are talking about a phase of business cycle, when the GDP growth is already very high, the RBI does not mind if the growth rate gets reduced somewhat, as long as it is able to bring inflation rate down to what it is comfortable with.

On the other hand, think of a situation when the economy gets into a recessionary phase and the economic growth slows down. Note that during the recessionary phase, inflation rate is typically very low. What does the RBI do in this case? RBI resorts to expansionary monetary policy measures by reducing key policy rates. This results in reducing the market interest rates. Reduced interest rates augment the investment activity and thereby increase the total output and employment in the economy. This may however lead to some increase in inflation. But the RBI does not mind that.

Thus, the RBI uses monetary policy instruments differently at different times, depending on what is the most pressing concern of the economy: high inflation or low GDP growth. When inflation is the major concern, it tightens monetary policy (that is, it reduces growth in money supply) and when sluggish economic growth is the major concern, it loosens monetary policy (that is, it attempts to increase growth rate of money supply).

5.10 Use of Fiscal policy

The kind of policy objectives that can be achieved through the use of monetary policy, can also be achieved by fiscal policy instruments (see below). While the RBI determines the monetary policy, it is the government that determines a country's fiscal policy. Many times, appropriate monetary policies are combined with fiscal policies to have the desired impact

on the economy. When an economy gets into a recessionary phase, the government can use fiscal policy to boost the economic activity in the country. Tax rate and public expenditure are the main instruments of fiscal policy. To revive growth during recessionary phase, government resorts to expansionary fiscal policy measures which means that it reduces the tax rates and/or increases the public expenditure. A cut in direct taxes, for example, raises the disposable income of people. This will encourage many people to raise their spending, which will boost the aggregate demand in the economy. Similarly, a reduction in indirect taxes makes the goods cheaper and more affordable, leading to higher spending by people.

Now what impact does increase in government expenditure have at times of recession? An increase in public expenditure raises the aggregate demand in the country. This works very well when the economy passes through recessionary phase. During normal times, however, there are problems associated with raising public expenditure beyond a certain level or lowering tax rates beyond a point. Higher public expenditure and/or lower tax revenue would push up the fiscal deficit of the government. In order to finance the fiscal deficit, government would have to (i) borrow money from open markets or (ii) monetize the deficit (that is, print more money). In the former case, it would crowd out private investment. In other words, higher market borrowing by the government would mean less investible resources for the private sector. Since private investment is typically more productive than public expenditure, part of which are for non-productive purposes such as subsidies, the economy suffers when fiscal deficit rises to very high level. Persistence of such huge fiscal deficit would also affect the country's image in foreign countries which may make it difficult for the domestic country to borrow abroad funds. To the extent, government finances the deficit by printing money, it would increase money supply in the economy which will push up the rate of inflation. Hence, there are limits on the extent to which the government can use expansionary fiscal policy to raise economic growth rate.

There is one difference between the use of monetary policy and fiscal policy. Monetary policy generally impacts all sectors of the economy in a similar way. For example, if the RBI follows tight monetary policy, interest rates rise and affect growth of all sectors in the economy. It is possible to use fiscal policy to have differentiated impact on different sectors of the economy. For example, it is possible to reduce tax rates on some goods that exhibit low growth rates, so that their growth picks up and at the same time, raise the tax rates on very fast growing sectors to mop up large tax revenue.

Chapter 6 : The External Sector: Open economy macroeconomics

The discussion so far was based on the assumption that the economy is a closed one; that is, there is no international trade and no inflow or outflow of capital to the economy. As India is getting increasingly integrated with the global economy, to gain insights into the macroeconomic issues in India, we need to understand how the macro scenario changes when we move from a closed economy to an open economy. But before doing that, it will be useful to understand some basic concepts of open economy macroeconomics.

6.1 Why do Countries Trade?

One of the fundamental ways in which a country integrates with the economic system of the rest of the world is through international flow of goods and services. This happens through exports and imports of goods and services. When a country sells its domestically produced goods and services abroad, the country is said to be 'exporting'. Conversely, 'importing' means that the country is buying goods and services that have been produced abroad.

International trade and gains from trade have received considerable attention in economics and policy making. Different schools of economic thoughts have propagated different reasons for why countries trade.

Mercantilism is an economic theory, thought to be a form of economic nationalism, that holds that the prosperity of a nation is dependent upon its supply of capital and that capital is represented by bullion (gold, silver, and trade value) held by the state, which is best increased through a positive balance of trade with other nations.

The Mercantilists of 16th to 18th Century believed that international trade leads to a situation, where the country with positive trade balance improves its national wealth at the expense of the country which is running a trade deficit.¹⁶ It was believed that a country can promote its self-interest by discouraging imports and encouraging exports to increase its wealth. This position essentially called for a protectionist trade policy.¹⁷ Not surprisingly, tariffs and quotas were used to restrict imports and subsidies were used to boost exports to cause a "favorable trade balance".

¹⁶ A country is said to be running a positive trade balance when its exports exceed its imports and a negative trade balance when the opposite occurs.

¹⁷ A protectionist trade policy implies the policy measures taken to protect the domestic producers of goods and services to some degree from competition from abroad and boosting exports through subsidies. Protectionist policy measures include import tariff (where a tariff is imposed on the goods and services imported) and quotas (where restrictions are imposed on how much of goods and services can be imported in a year) and export subsidies.

However, Adam Smith¹⁸ and David Ricardo¹⁹ challenged this perception and showed that international trade can be beneficial for all the countries. They showed that trade is not a zero sum game (that is, one country's gain from trade is equal to its trading partner's loss) and that free trade increases the global wealth. According to these models, differences in productivity of factors of production (factor productivity) across nations open up possibilities of trade.

²⁰ If the factor productivities among countries are different, then using a two country-two good framework, it can be shown that trade leads to increase in income of both the countries compared to autarky (see below). ²¹ The gains from trade come from each country specializing and exporting the good in whose production it has an advantage over the other.

Similar results can also be derived from these models if the framework is extended to multi-country, multi commodity setup. The policy implications of these theories strongly advocate free trade. This marks a complete departure from the protectionist policy measures suggested by the mercantilist school.

6.1.1 Absolute advantage theory

When one nation is more efficient than (or has an absolute advantage over) another in the production of one commodity but is less efficient than (or has an absolute disadvantage with respect to) the other nation in producing a second commodity, then both nations can gain by each specializing in the production of the commodity of its absolute advantage and exchanging part of its output with the other nation. This will pave the way for most efficient use of resources.

For example: Table 6.1 shows that country-A has an absolute advantage over country-B in the production of wheat since one hour of labour time produces 12 bushels of wheat in country A as compared to 2 bushels of wheat in Country B. On the other hand, country-B is having an absolute advantage over country-A in the production of cloth as one hour of labour time produces 10 yards of cloth in Country B as compared to 8 yards of cloth in Country A. With trade, country-A can specialize in the production of wheat and country-B can specialize in the production of cloth. In other words, they specialize in commodities in which they have absolute advantage over one another.

Table 6.1: Absolute advantage

	Country-A	Country-B
Wheat (bushels/man-hour)	12	2
Cloth (yards/man-hour)	8	10

¹⁸ An Inquiry into the Nature and Causes of The Wealth of Nations ,by Adam Smith in 1776

¹⁹ Principles of Political Economy and Taxation, by David Ricardo in 1817

²⁰ The three major factors of production are land, labor and capital.

²¹ economy with no trade

Let us see how both countries gain by exporting the commodity in which they have absolute advantage. Let us suppose Country-A exchanges 12 bushels of wheat against 12 yards of cloth with country-B. Here, country-A gains 4 yards of cloth or saves $\frac{1}{2}$ man-hour or 30 minutes of labour time (Country A can only exchange 12 bushels of wheat for 8 yards of cloth domestically). Similarly, the 12 bushels of wheat that country-B receives in trade would have required 6 hour of labour time to produce the same in Country B. These six hours can instead be used for the production of cloth which would produce 60 yards of cloth in country-B. After having earlier exchanged 12 yards of cloth with country-A, country-B retains or gains 48 yards of cloth or saves around 5 hours of labour time.

The fact that Country B gains much more than Country A, is not important at this time. What is important is that both nations gain from specialization in production and trade.

Absolute advantage can only explain a very small part of world trade today, especially some trade between developed and developing countries. However, trade among developed countries could not be explained by absolute advantage. To explain this, David Ricardo propounded the law of comparative advantage. In a sense, absolute advantage is seen as a special case of the more general theory of comparative advantage.

6.1.2 Comparative advantage theory

The law of comparative advantage advocates that even if one of the countries has an absolute disadvantage in the production of both commodities with respect to the other nation, there is still a basis for mutually beneficial trade. The first country should specialize in the production of and export the commodity in which its absolute disadvantage is smaller (the commodity of its comparative advantage) and import the commodity in which its absolute disadvantage is greater (the commodity of its comparative disadvantage).

For example: Table 6.2 shows that country-B has absolute disadvantage in the production of both the commodities. However, since country-B's labour is half as productive in cloth but six times less productive in wheat with respect to country-A, country-B has a comparative advantage in the production of cloth. On the other hand, country-A has an absolute advantage in both the commodities but it is greater in wheat. So, country-A has comparative advantage in the production of wheat over country-B. With trade, both countries can gain if country-A specializes in the production of wheat and export some of it to country-B in exchange of cloth. Similarly, country-B would specialize in the production of cloth and export some of it to country-A in exchange of wheat.

Table 6.2 : Comparative advantage

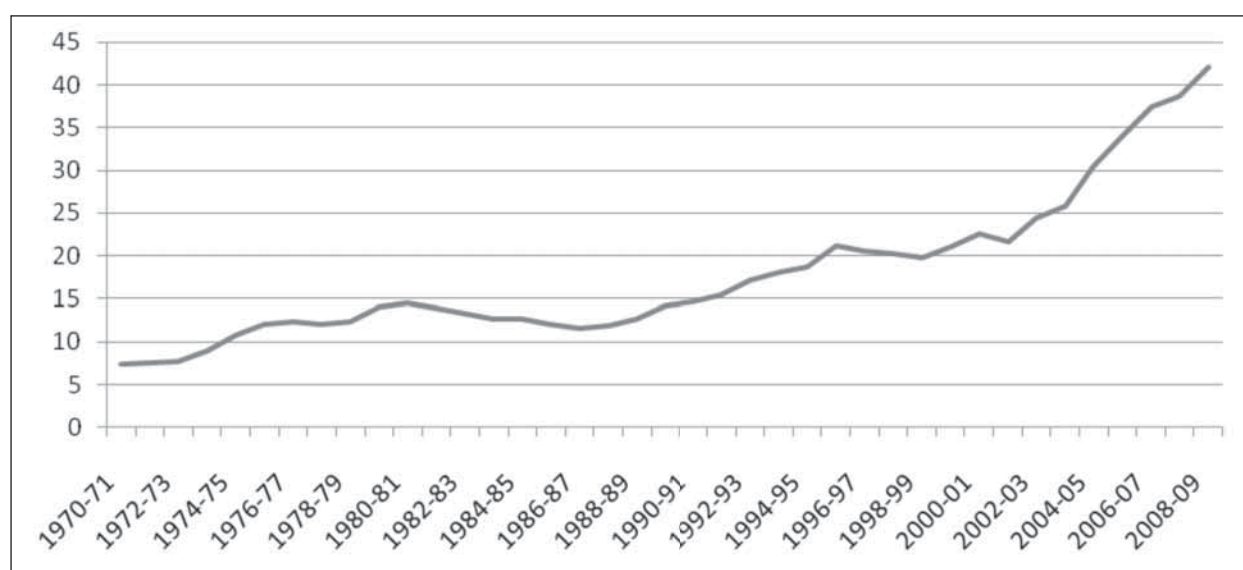
	Country-A	Country-B
Wheat (bushels/man-hour)	12	2
Cloth (yards/man-hour)	8	4

Suppose that country-A could exchange 12 bushels of wheat for 12 yards of cloth with country-B, it would save 30 minutes of labour time for country-A or it will gain 4 yards of cloth. On the other hand, the 12 bushels of wheat that country-B receives from its counterpart would require six hours of labour time to produce the same quantity in country-B. These six hours can be used for the production of cloth by country-B which will be able to produce 24 yards of cloth. Out of this, country-B needs to give up only 12 yards of cloth to country-A in exchange for 12 bushels of wheat. Thus, country-B would gain 12 yards of cloth or save three hours of labour time. Hence, both countries benefit from such a trade, albeit country-A gains more than country-B. However, it is important to note that both countries can gain from trade even if one of them is less efficient than the other in the production of both commodities.

6.2 India and International Trade

Interestingly, India has been involved in international trade since the early days of civilization. Archeologists and historians have discovered that South Asia has been involved in international trade at least since the 4th Millennium BC, when the sea-faring Indus Valley civilization used to trade with the Sumerians. This is one of the first regular maritime international trade routes known in history. Historians tend to indicate that the Indus valley civilization had a fairly well developed network and logistics facility for international trade. India continued to be actively involved in international trade throughout its history, including in the British period. Only after India's independence in 1947, policymakers decided that India should focus more on developing its domestic industrial base and follow a more inward looking economic development strategy, which did not see external trade as an important source of growth. Since the 1980s, India is again opening up and consequently India's trade with the rest of the world has increased significantly—not only in absolute terms but also as a percentage of GDP. Figure 5.1 shows India's trade (that is, exports plus imports) to GDP ratio.

Figure 6.1 : India's Trade to GDP Ratio (in percentage)



Source: Handbook of Statistics on Indian Economy

When a country exports its goods or services, it receives foreign exchange. For example, if an Indian garment manufacturer sells his product to a garment shop in USA, he receives the payment in US dollars. Similarly, if an Indian importer needs to buy something from the US market, say a book from amazon.com, he will have to use US dollars for that transaction. When we look at these export and import figures in aggregate for a country, we can understand whether a country is exporting more or it is importing more. In other words, we have to see whether the country has positive or negative net exports. Net exports are defined as:

Net exports in a year = Total exports of goods and services in that year – total imports of goods and services in the same year

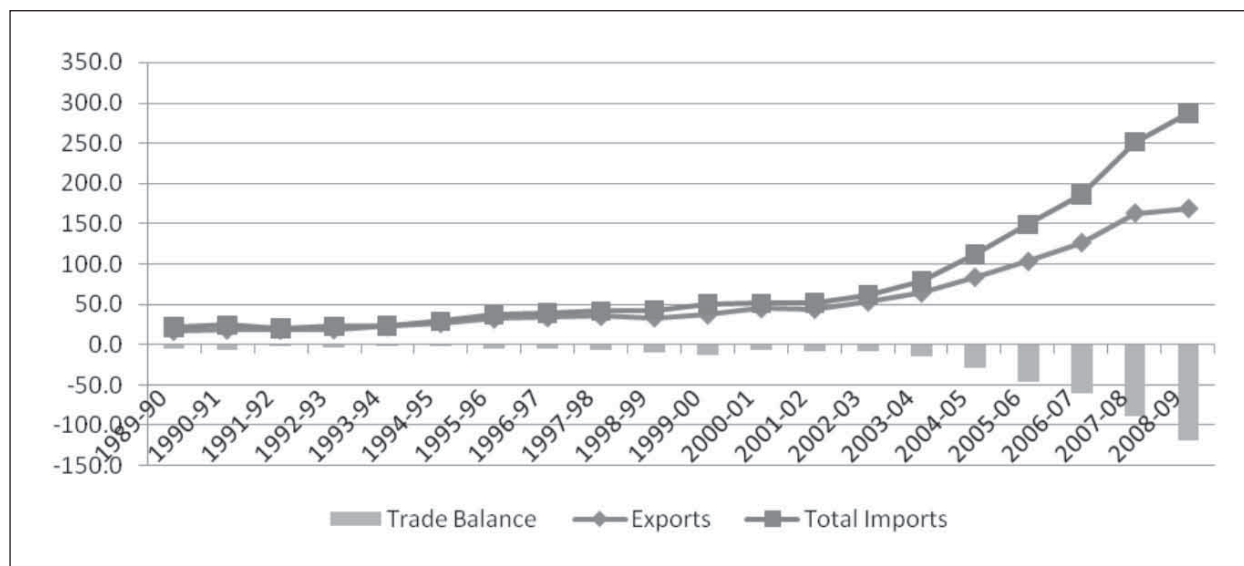
If the net exports of a country are greater than zero in a given year, then that country is called a 'trade surplus' country in that year. On the other hand, if a country imports more than its exports in a year, that is, if the net exports of the country is negative, then that country is called a 'trade deficit' country for that year. Note that when we talk about trade surplus or trade deficit, we talk about trade in both goods and services put together. India has generally been a trade deficit country as it imports more than it exports.²² China, on the other hand, has emerged as a country with large trade surplus.

6.2.1 India's merchandise trade

International trade in goods alone is called 'merchandise trade'. Thus there is a difference between 'trade balance' and 'merchant trade balance'. The former refers to the trade balance in goods *and* services together, while the latter refers to the balance in goods alone. The official trade statistics released by the Government, however, refer to merchandise trade (or trade in goods), unless otherwise mentioned. In India, merchandise trade data is compiled by Directorate General of Commercial Intelligence and Statistics (DGCIS, website: <http://www.dgciskol.nic.in/>). DGCIS collects merchandise trade data from land, sea and rail ports of India. As far as merchandise trade is concerned, India has been persistently running a trade deficit (i.e. Imports are greater than Exports). This is shown in Figure 6.2

²² There have, however, been some exceptional years, when India had a trade surplus.

Figure 6.2 : India's Merchandise Trade (in billion US\$)



Source: Handbook of Statistics on Indian Economy, RBI

6.2.2 Trade in services

Trade in services refers to the sale and delivery of an intangible product called services. 'Services' is a very diverse category and it can range from architecture services to voice-mail telecommunications services to software services.

The basic difference between trade in goods and trade in services is that while in merchandise trade, the goods physically cross the international border, the same may not be true in case of services. For example, when a tourist from Japan comes to India and stays in an Indian hotel, India is essentially exporting its hospitality services to a customer in Japan. But while India is selling its services overseas, the service is not crossing the international border. This is unlike merchandise trade, where there is a visible movement of goods across international borders. Same will be true for services imports. Similarly, when a legal expert from Switzerland is advising his Indian client and is being paid for it, India is importing the service but there will be no visible cross-border movement of the service. For these reasons, data for trade in services is not collected in the same way as data for trade in goods. Trade in services is classified under the category called 'invisibles' in a country's statistical reporting system.²³

As stated earlier, in India, service sector accounts for around 60 percent of the GDP. However, the size of annual exports of services in case of India is smaller than the size of annual exports in merchandise goods, although exports of services in India is growing much faster

²³ 'Invisibles' contain not only trade in services, but also other items (see below).

than trade in merchandise goods. If the current trend continues, the exports of services may overtake India's merchandise exports in another few years. It is interesting to note that while India was ranked 27th in the world in merchandise exports in 2008, in case of exports of services, India was ranked 9th.

6.2.3 Transfer payments and net factor incomes

Along with trade in services, the 'invisibles' category also contain data on two other important forms of payments. These are '**Transfer payments**' (or 'transfers') and 'net factor incomes'. Transfers are gifts or payments which are not in return for any economic activity. In case of India, 'transfers' comprise primarily remittances from Indians working overseas. According to World Bank data, India was the top recipient of remittances in 2008. During that year, India received remittances worth more than US dollar 45 billion.²⁴ China and Mexico are other developing countries which have historically received high remittance flows.

Net factor income means income paid to Indians from overseas sources which can be earnings on investment i.e. income (rent, profits, dividends), royalties and interest. On the debit side, it will be similar types of income that foreigners get from India.

In India's international trade, merchandise is gradually losing its dominant position to services and other transfer income components. Keeping in view of these changing dimensions of India's trade basket, it is pertinent to discuss India's evolving trade scenario through the Balance of Payments mechanism.

6.3 Balance of Payments

Balance of payments (BoP) is a summary statement in which all the transactions of the residents of a nation with the residents of all other nations are recorded during a particular period of time, typically a calendar year.²⁵ Thus, BoP is a much wider term in its coverage as compared to balance of trade. An important purpose of measuring the balance of payments is to inform the government regarding the international position of the nation and to help it in its formulation of monetary, fiscal and trade policies. Moreover, the information contained in the BoP is indispensable to banks, firms and individuals who are directly or indirectly involved in international trade and finance.

International transactions are classified as credits or debits. Credit transactions involve the receipt of payments from foreigners and are entered with a positive sign in the BoP statement. The export of goods and services, unilateral transfers from foreigners and capital

²⁴ According to the methodology adopted by RBI, 'Remittances' include repatriation of funds by migrant workers for family maintenance and local withdrawals from the non-resident Indian (NRI) deposits.

²⁵ In case of India, although BoP data is measured and published every quarter, annual BoP data refers to data for the financial year.

Inflows are credits as they involve the receipt of payments from foreigners. On the other hand, debit transactions involve the making of payments to foreigners and entered with a negative sign. Import of goods and services, unilateral transfers to foreigners and capital outflows are debits as they involve payments to foreigners.

6.3.1 Classification of Balance of Payments accounts

The Balance of Payments has two main components: (i) current account and (ii) capital account.

6.3.1.1 Current Account

The Current Account records the transactions in merchandise and invisibles with the rest of the world. Merchandise covers exports and imports of all movable goods, where the ownership of goods changes from residents to non-residents and *vice versa*. Invisibles, as stated earlier, has three components: trade in services, transfer payments and factor incomes. Thus, Current Account captures the effect of trade link between the economy and rest of the world. This is shown in Table 6.3.

Table 6.3 : Constituents of Current Account of a Country

	Credit Items	Debit Items
Merchandise Trade	Exports	Imports
Invisibles: Services trade	Export	Imports
Invisibles: Transfers	Inflows of payments	Outflows of payments
Invisibles: factor incomes	Inflows of factor income	Outflows of factor income

The current account of a country is in surplus if receipts from exports of goods and services and from transfers and factor incomes exceed payments on account of imports of goods and services, transfers and factor incomes, the country is said to have a current account surplus. On the other hand, if payments on this account exceed receipts from trade in goods and services and transfer payments, the country is said to have a current account deficit.

In spite of a significant increase in India's exports and high remittance flows, India has remained a current account deficit country. Table 6.4 shows the components of current account in India.

Table 6.4 : Components of India's Current Account (in Rs crores)

	2007-08			2008-09		
	Credit	Debit	Net	Credit	Debit	Net
I. Merchandise	6,68,008	10,35,672	-3,67,664	8,57,960	14,01,118	-5,43,158
II. Invisibles (a+b+c)	5,98,088	2,93,902	3,04,185	7,50,333	3,38,789	4,11,544
a) Services	3,63,042	2,06,798	1,56,244	4,67,915	2,39,606	2,28,309
b) Transfers	1,77,745	9,293	1,68,452	2,16,906	12,568	2,04,338
c) Income	57,300	77,811	-20,511	65,512	86,615	-21,103
Total Current Account (I+II)	12,66,096	13,29,575	-63,479	16,08,293	17,39,907	-1,31,614

Source: RBI Bulletin, March 10 2010.

Table 6.4 tells us that India has received about Rs 1326 thousand crores through exports of goods (Rs 858 thousand crores) and services (Rs 468 thousand crores) in 2008-09. However, imports of goods and services in the same year were around Rs 1641 thousand crores (these are figures in italics in the table 6.4). Though there have been positive net transfers on account of high private transfers (flow of remittances from migrant workers) and positive balance in trade in services, it has an overall current account deficit mainly due to a large deficit in merchandise trade. Traditionally India has been a current account deficit country for almost all years since it liberalized in 1991. So the question is, how does India pay for this deficit?

To elaborate, when we talk about international transactions like export, import and remittances, these transactions are carried out using foreign exchange. Though trade can be done using the currency of the trade partner, most countries tend to use US dollars for international transactions. Credit items in current account like exports and inward flow of remittances give a country the required foreign exchange. This money then can be spent to buy goods and services from abroad and also to pay for other invisible outflows from the country. Therefore, if a country like India persistently runs a current account deficit, it must procure foreign exchange to cover for that deficit. The answer to this question lies in something called the 'Capital Account'.

6.3.1.2 Capital Account

The capital account records purchases and sales of assets, such as stocks, bonds and land. In other words, the capital account shows all the inflows and outflows of capital. Capital account transactions reflect net change in the national ownership of assets. For example, when foreign investors acquire shares listed in India from Indian shareholders, it results in a change in the ownership of those shares by the Indian nationals. This represents a capital account transaction. This will become clear later in the chapter. No such thing however occurs in case of current account transactions.

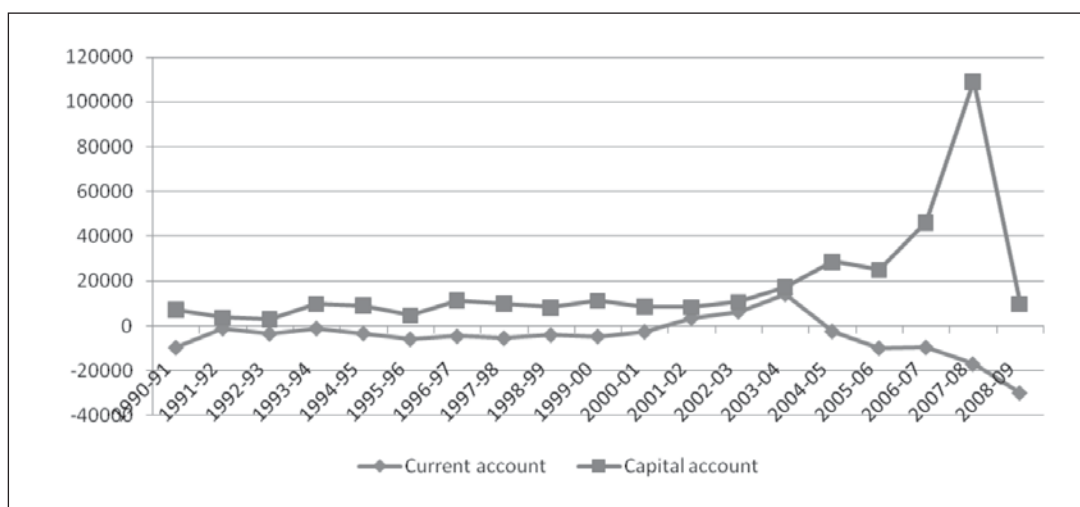
Capital account tracks the movement of funds for investments and loans into and out of a country. Some of the components of capital account are foreign direct investment (FDI), foreign portfolio investment (FPI) and external commercial borrowing (ECB).

Note that a country may incur a deficit or a surplus in both (i) the current account transactions and (ii) capital account transactions. The overall Balance of Payments for a country in a given year is the sum of the surplus/ deficits of current and capital accounts. A surplus in one account can offset the deficit in the other.

In India, with significant changes in liberalization of foreign investment rules in 1991, the country has been generally running a surplus in its capital account. The surplus generated in

the capital account allows India to pay for its current account deficit. In fact in several recent years, the surplus in the capital account exceeds the deficit in the current account (the year 2008/09 was a notable exception). This is shown in Figure 6.3. This means that India has been in recent years generally been running an overall balance of payments surplus. This surplus results in net addition to the country's foreign exchange reserves.

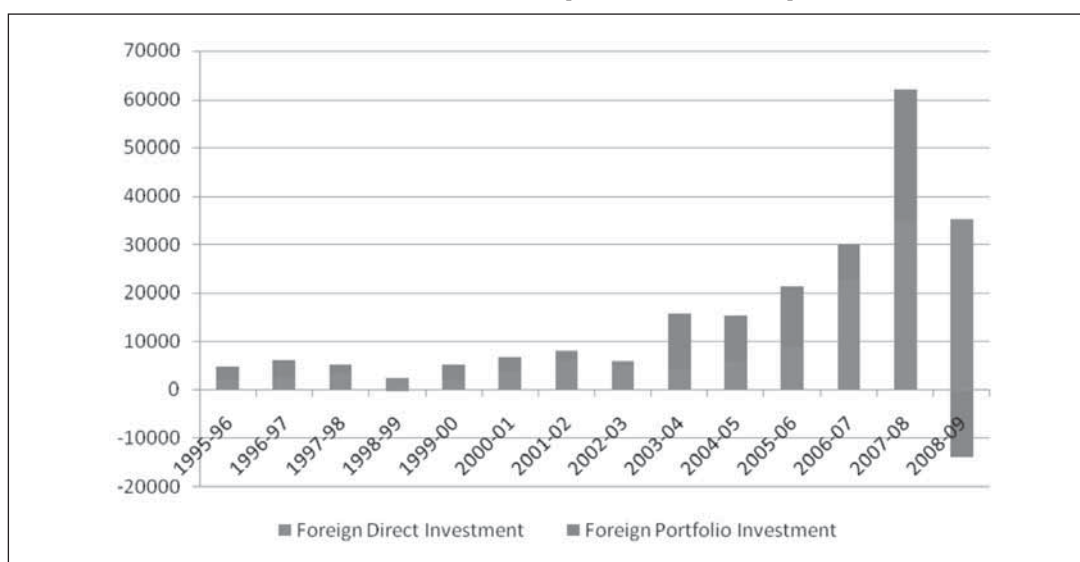
Figure 6.3 : India's Current Account and Capital Account (in million US dollars)



Source: *Handbook of Statistics on Indian Economy, RBI*

Since India liberalized its capital account in 1991, non-debt creating flows have become much more important component in India's capital account. Among the non-debt creating flows, the two most important types of capital flows are Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI). India has been receiving high FDI and FPI inflows since 2000. These are shown in Figure 6.4.

Figure 6.4 : FDI and FPI Inflows to India (in million US\$)



Source: *Handbook of Statistics on Indian Economy, RBI*

6.4 Foreign Direct Investment

The International Monetary Fund (IMF) defines FDI as an investment made to acquire lasting interest in enterprises operating outside of the economy of the investor. In other words, FDI comprises activities that are controlled and organized by firms (or groups of firms) outside of the nation in which they are headquartered and where their principal decision makers are located. In the context of the manufacturing sector, FDI is conventionally thought of in terms of branch plant or subsidiary company operations that are controlled by parent companies based in another country. The most important characteristic of FDI, which distinguishes it from foreign portfolio investment, is that it is undertaken with the intention of exercising control over an enterprise.

In other words, FDI is a category of cross border investment made by a resident in one economy (the direct investor) with the objective of establishing a 'lasting interest' in an enterprise (the direct investment enterprise) in an economy other than that of the direct investor. The motivation of the direct investor is a strategic long term relationship with the direct investment enterprise to ensure a significant degree of influence by the direct investor in the management of the direct investment enterprise. In India the 'lasting interest' is not evinced by any minimum holding of percentage of equity capital/shares/voting rights in the investment enterprise. The objectives of direct investment are different from those of portfolio investment, whereby investors do not generally expect to influence the management of the enterprise.

FDI can be of two broad types, viz. (a) greenfield investments and (b) through merger and acquisition activities. Greenfield investment is defined as the establishment of a completely new operation in a foreign country. Greenfield FDI refers to investment projects that entail the establishment of new production facilities such as offices, buildings, plants and factories. In Greenfield Investment, the investor uses the capital flows to purchase fixed assets, materials, goods and services, and to hire workers for production in the host country. Greenfield FDI thus directly adds to production capacity in the host country and, other things remaining the same, contributes to capital formation and employment generation in the host country.

Secondly, FDI can also be through Merger and Acquisitions with existing firms in the destination country (FDI through M&A). Such cross-border M&As involve the partial or full takeover or the merging of capital, assets and liabilities of existing enterprises in a country by a firm from other countries. The target company that is being sold and acquired is affected by a change in owners of the company. There is no immediate augmentation or reduction in the amount of capital invested in the target enterprise at the time of the acquisition. If for example, an Indian company is acquired by an US company, capital would flow into India from the USA

to the owners of the company, but not to the company itself. So, there is no immediate addition to the productive capacity. However, there can be efficiency gains in the medium term through transfer of technology, better management, better market access etc.

To calculate FDI flows, RBI includes equity capital, reinvested earnings (retained earnings of FDI companies) and 'other direct capital' (inter-corporate debt transactions between related entities). FDI flow to India has been increasing over the years. Since August 1991, FDI inflows to India have crossed US\$ 127 billion (up to December 2009). Detailed statistics about FDI inflows to India, including monthly flows and sectoral breakups are available on the website of Department of Industrial Policy and Promotion (www.dipp.nic.in). This website also contains a manual of FDI which gives the detailed procedural information about investing in India through the FDI route.

6.5 Foreign Portfolio Investment

Foreigners' investment in a country's capital market is known as foreign portfolio investment. The basic difference between FDI and FPI is that in case of FDI, the investor acquires lasting interest in the company where it has invested. But in case of FPI, the investor does not have any managerial representation in the board of directors of the company. In other words, foreign direct investors have the management of the firms under their control; but this is not the case for foreign portfolio investors.

To invest in the Indian stock market, a foreign investor has to fulfill a number of criteria laid out by the market regulator, the Securities and Exchange Board of India (SEBI). These investors will also have to be registered with SEBI. These registered foreign investors are called the Foreign Institutional Investors (FIIs). Along with FIIs, Non-Resident Indians (NRIs) are also eligible to purchase shares and convertible debentures under the Portfolio Investment Scheme. FIIs include Asset Management Companies, Pension Funds, Mutual Funds, Investment Trusts as Nominee Companies, Incorporated/Institutional Portfolio Managers or their Power of Attorney holders, University Funds, Endowment Foundations, Charitable Trusts and Charitable Societies.

FIIs are also allowed to invest on behalf of their sub-account. A sub account of an FII is generally the underlying fund on whose behalf the FIIs invests. The following entities are eligible to be registered as sub-accounts, viz. partnership firms, private company, public company, pension fund, investment trust, and individuals.

A similar but more complex system is investment by FIIs through the Participatory Notes (PN) route. Participatory notes (PNs) are instruments used by foreign investors not registered with the Indian regulators for taking an exposure in the domestic market. PNs are like contract notes and are issued by FIIs registered in India to their overseas clients who may

not be eligible to invest in the Indian stock markets. There have been some controversies about the use of PNs by FIIs. Concerns have been expressed that undesirable elements may have been investing money in India through this route and accordingly certain restrictions have been imposed.

Indian companies are also allowed to raise equity capital in the international market through the Global Depository Receipt (GDR) and American Depository Receipt (ADR) route. Let us understand how this works. To raise capital through public issues, a company has to be listed and traded on various stock exchanges. Thus, companies in India issue shares which are traded on Indian stock exchanges (such as National Stock Exchange).

These shares are sometimes also listed and traded on foreign stock exchanges like NYSE (New York Stock Exchange) or NASDAQ (National Association of Securities Dealers Automated Quotation), if the intention to raise capital abroad. But to list on a foreign stock exchange, the company has to comply with the policies of those stock exchanges, which are much more stringent than the policies of the exchanges in India. This is especially so for the exchanges in the USA and Europe. This deters these companies from listing on foreign stock exchanges directly.

But many companies get listed on these stock exchanges indirectly – using ADRs and GDRs. How does this work? The company deposits a large number of its shares with a bank located in the country where it wants to list indirectly. The bank issues receipts against these shares, each receipt having a fixed number of shares as an underlying (usually 2 or 4). These receipts are then sold to the people of this foreign country. This is how the company raises capital abroad. These receipts are listed on the stock exchanges. They behave exactly like regular stocks and their prices fluctuate depending on their demand and supply, and depending on the fundamentals of the underlying company.

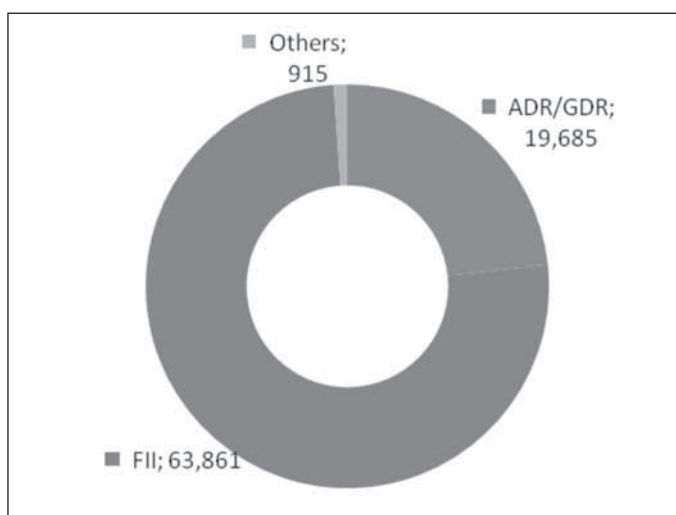
These receipts, which are traded like ordinary stocks, are called Depository Receipts. Each receipt amounts to a claim on the predefined number of shares of that company. The issuing bank acts as a depository for these shares – that is, it stores the shares on behalf of the receipt holders.

Both ADR and GDR are depository receipts, and represent a claim on the underlying shares. The only difference is the location where they are traded. If the depository receipt is traded in the United States of America (USA), it is called an American Depository Receipt, or an ADR. If the depository receipt is traded in a country other than USA, it is called a Global Depository Receipt, or a GDR. This allows retail investors of other countries to invest in shares of Indian companies.

Therefore, foreign portfolio investment comes to India broadly through two sources. First and the more dominant source of FPI are the FIIs. FIIs invest money in Indian capital

markets. They invest in both debt and equity segments of the markets. The second source of FPI is through the ADR and GDR route. If one looks at the period 1995-96 to 2007-08, India has received FPI worth 84 billion US dollar. Out of these, around 20 billion US dollar has come through the ADR/GDR route, while around 64 billion US dollar has been brought by the FIIs (Figure 6.5).

Figure 6.5 : Different Source of Foreign Portfolio Flows to India (1995-96 to 2007-08)
(in US\$ million)



Source: *Handbook of Statistics on Indian Economy*, RBI

6.6 Exchange Rates

So far we have discussed various aspects of international trade and capital flows without any discussion on exchange rates. It will be important now to introduce the concept of an exchange rate. The exchange rate is formally defined as the value of one currency in terms of another. There are different ways in which the exchange rates can be managed. Exchange rates may be fixed, floating, or with limited flexibility. A nominal exchange rate denotes the price of foreign country's currency in terms of the domestic currency. For example, price of 1 US dollar in terms of Indian rupees (INR) is currently around 46. An exchange rate helps each country to have its own currency, which is different from its trading partners and yet carry out trade freely in the international market.

If the exchange rate changes in a way that 1 US dollar can buy more INR, then it is said that INR has depreciated. In other words, if tomorrow 1 US dollar can buy 50 INR (instead of 46), then one can say that INR has depreciated. In economic jargon of financial press, this is also called weakening of INR. This is because 1 INR is now worth less amount of US\$. Conversely if 1 US dollar becomes equivalent to say 40 INR (rather than 46), then it will be said that INR has appreciated or strengthened.

The determination of the exchange rate of a country is influenced by a number of factors. One of the most important determinants is the concept that the exchange rate should ensure purchasing power parity across countries. According to this theory, a currency should have the same purchasing power in all countries. That is, the exchange rate (say between US dollar and Indian rupee) should be adjusted in a way that 1 US dollar should be able to buy the same good in equal quantity, both in USA and in India. This theory essentially tells that exchange rate should be dependent upon the price level of both the countries. For example, if a sandwich costs Rs 25 in India and US\$ 1 in USA, then the exchange rate should be 1 US\$ = 25 INR. This will ensure purchasing power parity between INR and US\$. More formally, if the price of a basket of goods in India is P, the price of the same basket of goods in USA is P*, then the exchange rate e (expressed in terms of INR per dollar), should be determined by the following equation:

$$e \cdot P^* = P$$

$$\text{or } e = P/P^*$$

Though this theory looks elegant and simple, in real life, the purchasing power parity is not achieved through exchange rates. In addition to purchasing power parity, A number of other factors may influence the determination of the exchange rates. The most important factor that determines exchange rates in real life is the relative demand for and supply of domestic currency vis-à-vis the foreign currency. Let us take two examples:

In situation 1, India needs to import huge amount of oil in a certain month. It is going to buy this oil from the international market. Therefore, to pay for this oil import, Indian importers will have to procure dollars in the foreign exchange market. If the demand for dollar increases in Indian markets relative to the supply of dollars, the price of dollar will go up. Because, to induce more people to sell dollars, more INR will have to be given per US dollar. This means an appreciation of dollar and depreciation of rupee.

In situation 2, India has received huge amount of FDI and FPI flow in a certain month. Now foreign investors will need rupees for their investment in India and not dollars. Therefore, they will need INR in exchange of their dollar bills. If this supply of US dollars exceeds the demand for dollars in that month, the price of the dollar would go down to induce more people to buy dollars in exchange for rupees. This will be elaborated later in this chapter.

Currency appreciation and depreciation can have significant impact on an economy. For example, if there is a depreciation of INR, then the value of imports become costlier. For example, if the initial exchange rate is 40 INR/US\$ and India buys oil at the rate of 100 \$/barrel, then the rupee price of 1 barrel oil will be 4000 INR. If the rupee depreciates to 50INR/US\$, then the same consignment will cost India 5000 INR. Therefore, a depreciation will raise the prices of all its imported products, thereby raising inflationary pressure in the economy.

On the other hand, if rupee appreciates from 40INR/US\$ to say, 30 INR/US\$, then it will hurt the exporters of the country. Suppose it takes Rs 120 to produce a toy in India. In the first case, the exporter can sell his product at US\$ 3 in the international market. However, after the appreciation, the same product will have to be sold at US\$ 4 in the same market. This is likely to affect the competitiveness of the export sector in India. In other words, the exporters now cannot sell their toys as easily as they could earlier it was US\$ 3.

The role of the Central Bank of the country is to manage the exchange rate in such a way that the following four broad objectives are satisfied (Reddy 1997, Mohan 2006). They are:

1. To ensure that economic fundamentals are reflected in the external value of the rupee.
2. To reduce excess volatility in exchange rates and ensure that market correction of overvalued or undervalued exchange rate is orderly and calibrated.
3. To help maintain an adequate level of foreign exchange reserves.
4. To develop a healthy foreign exchange market.

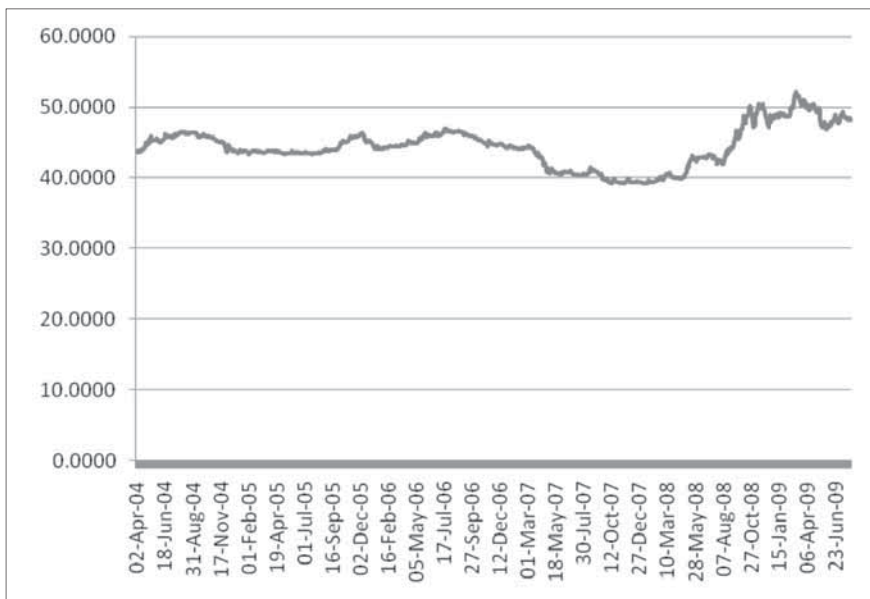
With these objectives, RBI tries to manage the exchange rate in India. Officially it is said that RBI does not have a fixed or pre-announced target or band while monitoring the exchange rate. The International Monetary Fund (IMF) classifies the Indian exchange rate regime as a “managed float with no predetermined path for the exchange rate”. In the words of the present RBI governor:

“The exchange rate policy in recent years has been guided by the broad principles of careful monitoring and management of exchange rates with flexibility, without a fixed target or a pre-announced target or a band, coupled with the ability to intervene, if and when necessary.”²⁶

However, although the exchange rate is allowed to be determined by the demand for and supply of foreign exchange the exchange rate in India, it does not enjoy complete flexibility. The RBI does intervene at times in the foreign exchange market and tries to keep INR at a stable level. Figure 6.6 shows the INR/US\$ exchange rate for the period April 2004 to June 2009.

²⁶ Statement by Dr. D. Subbarao, Governor, Reserve Bank of India on the Mid-Term Review of Annual Policy for the Year 2008-09, pp15

Figure 6.6 : Nominal INR/US\$ Exchange Rate



Source: Handbook of Statistics on Indian Economy

6.7 Foreign Exchange reserves

During our discussion on Current Account (CA) and capital account (KA) in India, it was shown that the overall balance (the sum of CA and KA) has remained positive for India for the last few years. This means that the country is receiving net positive payments from abroad. The excess foreign exchange that is flowing in the country means that there is an upward pressure on INR. In other words, given the excess supply of foreign exchange in comparison to demand, the INR would tend to appreciate. If the RBI does not want INR to appreciate, then it should buy the excess dollars (which are the result of positive overall balance in India) from the foreign exchange market. This is what the RBI has been doing. To keep the value of INR within a narrow band, it is actively intervening in the foreign exchange market and mopping up excess supply of dollars. This has kept the value of INR in check and has allowed RBI to amass huge amount of foreign exchange reserves. (Note that it is the central bank of a country, which in India's case is the RBI, which maintains the foreign exchange reserves of a country.) Table 6.5 shows the various components of Current Account and Capital account which have contributed to this build up of foreign exchange reserves in India.

Table 6.5 : Sources of Accretion of Foreign Exchange Reserves since 1991-92.

			(US\$ billion)
Items			1991-92 to 2009-10 (up to end September 2009)
A		Reserves as at end-March 1991	5.8
B.L		Current Account Balance	-97.9
B.II.		Capital Account (net) (a to e)	357.5
	a.	Foreign Investment	185.7
		Of which:	
		(i) FDI	90.4
		(ii) FII	66.9
	b.	NRI Deposits	36.9
	c.	External Assistance	19.2
	d.	External Commercial Borrowings	68.7
	e.	Other items in Capital Account"	47.0
B.III.		Valuation Change	15.8
		Reserves as at end-September 2009 (A+BI+BII+BIII)	281.2
* : Include errors and omissions.			

Source : Half Yearly Report on Management of Foreign Exchange Reserves, Reserve Bank of India, January 2010

Foreign exchange reserves play a number of important roles for the economy. According to Y.V. Reddy, former governor of Reserve Bank of India, high amount of foreign exchange reserve is necessary for:

- maintaining confidence in monetary and exchange rate policies,
- enhancing capacity to intervene in foreign exchange markets,
- limiting external vulnerability by maintaining foreign currency liquidity to absorb shocks during times of crisis including national disasters or emergencies;
- providing confidence to the markets especially international credit rating agencies that external obligations can always be met, thus reducing the overall costs at which foreign exchange resources are available to all the market participants, and
- incidentally adding to the comfort of the market participants, by demonstrating the backing of domestic currency by external assets.

However, amassing huge foreign exchange reserves also creates some other macroeconomic management problems for the economy, which will be discussed next.

6.8 Impact of capital flows on money supply

As we have discussed, in a scenario, when there is a positive capital account balance and such balance exceeds the foreign exchange requirements to finance the current account deficit, as

in the case of India. there is an excess supply of foreign exchange (say dollars) as compared to demand. As a result, the Indian rupee would tends to appreciate. If this happens for a sustained period of time, the Indian exports would lose their competitiveness. To counter this problem, the central bank of the country has the option to check the appreciation of the domestic currency by buying up some foreign currency (say US dollar) in the Indian foreign exchange market. However by doing that, the central bank may lose control over the money supply, because the RBI buys the foreign currency in the market in exchange for Indian rupees. As a result, the supply of Indian rupees (money supply) increases. Sometimes, this increase in money supply may lead to a money supply growth that exceeds the RBI's desired money supply growth.

In India, RBI has actively intervened in the foreign exchange market to ward off the appreciating pressures on INR. A look at the RBI balance sheet shows that since 1993-94, there has been a sharp increase in the Net Foreign Assets (NFA), which predominantly constitutes foreign exchange reserves. It also shows that net foreign exchange asset accretion by the banking system has become the most important source of expansion of money supply in India.

The central bank does not want the money supply to spin out of control. Maintaining price stability is considered to be one of the most important roles of RBI. Historical experiences have also shown that sustained episodes of high credit growth have often been followed by price instability. Thus the RBI faces conflicting objectives. If in the situation of excessive capital inflows, it intervenes by purchasing excess dollars, it can maintain the competitiveness of Indian exports, but may lose control over money supply. On the other hand, if in such a situation, it does not intervene, it would have greater control over money supply, but the competitiveness of Indian exports would go down. There are a couple of alternatives to deal with these conflicts. First, the central bank can moderate some of the pressure on the rupee to appreciate by encouraging private investment overseas by Indian businessmen or by allowing foreigners to borrow from the local market. This way the excess supply of dollars can be reduced without any need for RBI intervention. The second alternative is to sterilize the capital inflows, which is elaborated below.

6.9 Sterilization of Capital Flows

During a sustained period of net capital inflow, when the central bank buys foreign exchange from the market in exchange for rupees to keep the nominal exchange rate of the domestic currency from appreciating, it creates excess supply of rupees (relative to demand) in the market. Subsequently, the central bank mops up the excess supply of rupees by selling government securities in open market operations. When the central bank sells government bonds in the market, it implies that economic agents (like commercial banks, financial

institutions, retail investors etc.) are buying these papers by paying money to RBI from the existing supply of money. This reduces money supply in the economy. This whole exercise of mopping up excess supply of rupees from the market is called **sterilization of capital flows**. Sterilization can keep the growth in money supply under control, thereby avoiding the undesirable expansionary effects on money supply of capital inflows. Intervention in the foreign exchange market followed by sterilization allows the monetary authority (RBI) to build foreign exchange reserves (that will help to withstand future shocks, and provide comfort and confidence to market participants), while keeping the money supply growth under control.

However, there are some problems with sterilization. In a theoretical world with completely free capital flows, sterilization is self defeating. In theory, capital is attracted to a country A, if the risk adjusted rate of interest in country A is higher than the same in the home country of the capital. If a central bank sterilizes the capital flow by selling securities, it will have to offer attractive interest rates those papers to attract buyers. This will push up the rate of interest in country A and it will attract more capital inflow. Therefore, the sterilization process will exacerbate the problem of excess liquidity that it tried to tackle. However, in a practical world, capital inflows depend on a host of other factors apart from risk-adjusted rate of interest. Therefore, in real life, many central banks of the world, including RBI, have partially managed to sterilize the effects of excessive capital inflow.

The second problem is more pertinent. There are certain fiscal costs associated with sterilization. This is because during sterilization, the central bank is essentially selling government securities to mop up excess liquidity. The government would have to pay interest to those who come to acquire government securities due to the sterilization process. This is called the fiscal cost of sterilization. According to RBI estimates, the interest cost of sterilization to the Government and the RBI in 2005-06 is reported to be in the broad range of Rs. 4,000 crores.

Chapter 7 : Financial Markets

7.1 What are the basic roles of the financial market?

In a very simple economy, there are two sets of economic agents: households and firms. Households save and the firms invest. It is the role of the financial sector to ensure that the savings of the household sector reaches the firms, which need the resources for investment. In reality the economy is of course much more complex than this overly simplified system. In a real economy, savers include not only households but also firms and government. Similarly, investments can be made by not only firms, but also households and the government. However, even in a more complex economy, the main function of the financial system essentially involves the mobilization of resources from those who have surplus and allocation of these resources to those who face deficit. In other words, the financial sector plays the role of an intermediary by ensuring smooth flow of resources from those who have surplus funds to those who have a shortage of funds.

Let us look at the savers' side. People differ from each other in their risk appetite as well as their expectations of return and liquidity of their savings. The financing system provides a menu of saving vehicles with differing risk, return and liquidity characteristics. A more efficient financing system, catering better to the needs of those with surplus funds, can generate higher savings.

Now, let us look at the investors' side. The financing system also helps in allocation of savings to those in need of funds (namely, investors). Investors have differing needs too. An efficient financial system allocates savings efficiently and increases the productivity of investment. In other words, for a given level of saving, more efficient financial intermediation increases the productivity of investment. It thus seems obvious that the more efficient the financial system, the more rapid the growth rate.

The second important role of the financial system is that of risk management. Every business enterprise involves risk. The financial institutions provide a framework for evaluating these risks. The financial market allows sharing, trading and transferring of risk among different economic agents. For example, when an innovative high-technology firm sells its equity in the financial market, it is sharing the risk of the new technology with its shareholders. In absence of a financial market, such firms will tend to go for projects which are safer and may be less innovative. Financial markets, by allowing the sharing of risk, encourage future structural changes essential for maintaining a country's long-term growth potential. Given rapid technological progress and increased role of innovation in growth performance, the role of financial market becomes crucial.

The third role of the financial markets is to pool and communicate information efficiently, so that market prices reflect available information.

All these roles put the financial system at the centre of modern macroeconomics. As Stiglitz et al (1993) suggest, *"the financial system can be thought of as the "brain" of the entire economic system, the central locus of decision making: if they fail, not only will the sector's profits be lower than they would otherwise have been, but the performance of the entire economic system may be impaired"*²⁷.

7.2 Why and how are financial markets different from other markets?

Financial markets are different from other markets in the economy. They are much more complex and have a number of special characteristics, which make them rather unique. Because of the special nature and characteristics of the financial markets, they require a special set of rules and regulations. This section will discuss some of these characteristics in more detail.

7.2.1 Systemic Risk

Financial markets are characterized by a complex and dynamic network of inter-relations among major intermediaries like banks, financial institutions and securities markets. Also, a large number of borrowers and lenders are dependent on the financial system. One of the important characteristics of the financial markets is that it is a source of systemic risk.

Systemic risk is the risk of collapse of an entire financial system or entire market, as opposed to risk associated with any one individual entity, group or component of a system. It refers to the risks imposed by interlinkages and interdependencies in a system or market, where the failure of a single entity or cluster of entities can cause a cascading failure, which could potentially bring down the entire financial system and even severely affect the real sector in the economy. This phenomenon is very special to the financial market.

Over the years, systemic risks of the global financial markets have increased. Innovation in financial tools have continued to foster the growth of risk transfer instruments, such as derivatives and structured products, while deregulation and technological improvement have helped to further increase the growth of cross-border activity and the entry of new market participants. All these have increased the systemic risk of the system. Banks and financial institutions of the world are now more dependent on each other and any shock happening to one of the bigger financial centers of the world is likely to affect the entire global financial system. This was evident during the housing market crisis in USA. A collapse of house prices in USA affected the banking system and eventually snowballed into a full-fledged economic

²⁷ 'The role of the state in financial market' by Joseph E. Stiglitz, Jaime Jaramillo-Vallejo, and Yung Chal Park
World Bank Research Observer, Annual Conference on Development Economics Supplement (1993):19-61

Crisis in the developed world. Most developing countries were also affected, in spite of having little exposure to the US mortgage market.

Another thing which has contributed to this increase in systemic risk is increased 'leverage' in the financial system. "Leverage" typically refers to the use of borrowed funds to increase returns on any given investment. If asset prices are rising and the cost of borrowing is low, then banks try to maximize their profit by increasing their exposure to rising asset prices by borrowing as much as they can. While borrowed funds are central to the concept of "leverage," leveraging can be done through any instrument through which a bank can magnify its exposure to a given asset. The 'Leverage ratio' is generally defined as debt to equity ratio. A bank with a high debt to equity ratio is said to be more leveraged than a bank with low debt to equity ratio. Excessive leverage by banks make them vulnerable to failure in the event of a sudden and substantial fall in the prices of assets they have been financing. This increases the systemic risk in the economy. After the recent financial crisis, it was found that banks and financial institutions had increased their leverage ratios significantly in the recent years. Systemic risk is difficult to manage because it is greater than the sum of individual risks facing the components of the system.

7.2.2 Asymmetric Information

Information asymmetry is a situation in which one party in a transaction has more or superior information compared to another. This often happens in transactions where the seller knows more than the buyer, although the reverse can happen as well. This could potentially be a harmful situation because one party can take advantage of the other party's lack of knowledge.

Asymmetric information is an important characteristic aspect of the financial market. Although asymmetric information is not something exclusive to the financial market, the extent of this problem is relatively deeper in this market than in other markets. Asymmetric information has received significant attention in Economics in recent times. Three Nobel laureates George Akerlof, Michael Spence and Joseph Stiglitz have made pioneering contributions to this field.

In financial markets, information asymmetry can happen because of a number of reasons. For example, a borrower has much better information about his financial state than the lender. The lender has difficulty knowing whether it is likely that the borrower will default. To some extent, the lender will try to overcome this by looking at past credit history and evidence of salary. However, this only gives limited information. The consequence is that lenders will charge higher rates to compensate for the risk. If there was perfect information, banks wouldn't need to charge this risk premium.

7.2.3 Feedback and Amplification

Information asymmetry is present not only in financial sector but in some other economic sectors as well, but the presence of systemic risk together with information asymmetry result in another problem in the financial system: that is, a much stronger feedback and amplification mechanisms than in other sectors. For example, because of the presence of systemic risk and information asymmetry, even a rumor about a bank run can create panic in the financial market ²⁸. There are also issues of 'herd behavior' and 'contagion' in the financial markets. Herd behavior is a tendency for a group of individual to mimic the actions (rational or irrational) of a larger group. Herd behavior can be observed during stock market bubbles/crash when there are periods of frenzied buying/selling. In India, FIIs tend to have a disproportionately high level of influence on market sentiments and price trends. This is so because other market participants perceive the FIIs to be infallible in their assessment of the market and tend to follow the decisions taken by FIIs. This 'herd instinct' displayed by other market participants amplifies the importance of FIIs in the domestic stock market in India.

These special characteristics and features of financial markets imply that these markets are to be regulated and governed by specialized institutions. This is the reason why there are so many different forms of financial institutions in the economy. Each of these institutions has a role to play in either promoting the basic roles of finance or to tackle some of the problems, which are specific to the financial markets. The roles of different financial regulators have been discussed in Chapter 8.

7.3 Role of different financial systems: bank based financial systems and capital market based financial systems

While all countries have both banks and capital markets acting as financial intermediaries, their relative importance varies from country to country. Based on the relative importance of banks and capital markets in financial intermediation, financial systems of most countries can be categorized as either bank based or capital market based systems.

7.3.1 Capital Market Based Financial System

In capital market based systems, securities markets share centre stage with banks in getting society's savings to firms, exerting corporate control and easing risk management. Countries with a common law tradition, strong protection for shareholder rights, good accounting standards and low levels of corruption tend to be more market-based. The USA and UK are the prime examples of market based financial system.

²⁸ A bank run refers to a situation when an unusually large number of depositors rush in to withdraw their deposits, fearing that the bank may fail.

7.3.2 Bank based Financial Systems

On the other hand, bank-based economies are characterized by predominant financing of the investment activities by banks, who are far fewer in number than shareholders in a capital market based economy. In bank-based systems banks play a leading role in mobilizing savings, allocating capital, overseeing the investment decisions of corporate managers, and providing risk management vehicles. The banks are the primary source of long-term funds and in most bank-based economies, there is relatively little secondary trading of financial assets.

India's financial system has traditionally been characterized as a bank-based one. However, since the financial sector reforms initiated in 1991, stock markets have become increasingly more important than before, in India's economic system and the predominance of the banking system has been somewhat reduced, although banks continue to be a dominant source of financial intermediation.

The next section will briefly discuss the role and contribution of different sets of financial intermediaries in the Indian financial system.

7.4 Role and contribution of different segments in India's Financial Market:

7.4.1 Commercial Banks

Banks are traditional financial institutions that do the job of **financial intermediation** between the savers and investors. Acceptance of deposit from the public and lending to the investor has remained the core activity of the banking system. Apart from the core activities of the commercial banks, many of these banks are now increasing their footprint in the market for financial intermediation by providing services such as dematerialization, underwriting of financial instruments (shares and debentures). In India, many banks are offering value added services like foreign exchange transactions, merchant bank and remittance services. As it was discussed in a previous chapter, commercial banks through their fractional reserve system also help **create liquidity** in the economy.

7.4.2 Non Banking Financial Companies (NBFCs)

Besides the commercial banking segment, another segment in the financial system, known as Non Banking Financial Companies plays a crucial role in facilitating transfer of funds from the surplus to the deficit segment in the economy. According to RBI, a Non-Banking Financial Company (NBFC) is a company registered under the Companies Act, 1956 and is engaged in the business of loans and advances, acquisition of shares/stock/bonds/debentures/securities issued by Government or local authority or other securities like marketable nature, leasing, hire-purchase, insurance business and chit business.

In India, the NBFCs are mainly equipment leasing companies, hire-purchase companies, housing finance companies, insurance companies and merchant banking companies. *Nidhis* and chit fund companies are also part of NBFCs in India.

The role of NBFCs in both manufacturing and services sector is significant. They play the role of an intermediary by facilitating the flow of credit to end consumers particularly in transportation, SMEs and other unorganized sectors. NBFCs are in a better position to cater to these segments because of their inherent strengths in the areas of fast and easy access to market information for credit appraisal, a well-trained collection machinery, close monitoring of individual borrowers and personalized attention to each client as well as minimum overhead costs.

NBFCs contribute to the financial system because they tend to finance riskier projects than those that are financed by the banks. Because of their relative organisational flexibility leading to a better response mechanism, they are often able to provide tailor-made services relatively faster than banks and financial institutions. NBFCs also play a role in diversifying the financial sector and thereby reducing systemic risk and improving the financial system.

Difference between NBFCs and Commercial Banks

NBFCs are different from banks in three respects, First, an NBFC cannot accept demand deposits; secondly, an NBFC is not a part of the payment and settlement system and as such an NBFC cannot issue cheques drawn on itself; and finally, deposit insurance facility of Deposit Insurance and Credit Guarantee Corporation (DICGC) is not available for NBFC depositors unlike in case of banks.

7.4.3 Development Financial Institutions

Development financial institutions are specialized institutions and are narrower in their coverage as compared to commercial banks. Development financial institutions consist of development banks, which provide medium and long term financial assistance to different sectors of the economy like industry, agriculture and services. Important roles of such financial institutions include providing adequate and timely credit to the private sector for promoting industrialization, help the private sector to develop entrepreneurial skills, promote development of rural areas and finance housing, small scale industries and infrastructure development.

Examples of development financial institutions are: Industrial Development Bank of India (IDBI), National Bank for Agricultural and Rural Development (NABARD), EXIM Bank, Small Industries Development Bank of India (SIDBI) etc. These banks often have specialized roles. For example, SIDBI is focused on small scale industrial units (Units in which the investment in plant and machinery does not exceed Rs.10 million). EXIM bank, on the other hand, is focused more on international trade finance and related issues. The role of NABARD is to facilitate credit flow for the promotion and development of agriculture, and support allied economic activities in rural areas.

7.4.4 Mutual Funds

Mutual Funds Are essentially investment vehicles where people with similar investment objective come together to pool their money and then invest accordingly. A mutual fund as a financial intermediary combines or pools investors' savings for collective investment in a diversified portfolio made up of equities, debts, short-term money market instruments, and/or other securities. A mutual fund will have a fund manager who trades the pooled money on a regular basis. The net proceeds or losses are then typically distributed to the investors periodically. Mutual funds play a significant role in channelizing the saving of millions of individuals into the investment in equity and debt instruments.

Mutual funds are meant to serve the interest of several small investors who may not have the time, experience, expertise or means of managing their investment portfolio directly on a regular basis. They are useful for investors because they get advantage of a professional fund manager, better diversification of portfolio, improved liquidity of their assets and convenience. Mutual funds are also popular among retail investors because they offer the investors a range of investment avenues with varying risk–return profile. Returns on investment in Mutual Funds are also exempt from long term capital gains taxes.

7.4.5 Insurance:

Insurance agencies are another set of important financial institutions that play an major role by mobilizing savings and supplying long-term capital to the financial sector. Insurance companies cater to various forms of insurance including life insurance, health insurance, crop insurance and general insurance. The insurance agencies help mobilize resources by developing a contractual saving portfolio for small investors. These agencies generate and mobilize funds by providing the small investors a low risk saving instrument with insurance and tax benefits.

In the insurance sector in India, life insurance segment is much larger than the non-life segment. The Life Insurance Corporation (LIC) of India is the biggest player in the life insurance market segment in India. LIC accounts for more than 70 percent of the life insurance business in India. The insurance sector in India was completely regulated till 2000. During the year 2000, India partially deregulated the domestic insurance market and made it open for private-sector and foreign companies. Foreign companies are allowed to hold a maximum of 26 percent share in their joint ventures with Indian companies. There is a strong demand among the private insurance companies to increase this ceiling to 49 percent. Currently there are 23 licensed players operating in the sector.

7.5 The Equity Market

The equity market In India has two segments: the primary market and the secondary market. In the primary market, securities are offered to the public for subscription for the purpose of

raising capital or fund. Secondary market is an equity trading avenue where already existing/ pre- issued securities are traded amongst investors. Primary market and secondary market do not work independently. There is a direct link between these two markets.

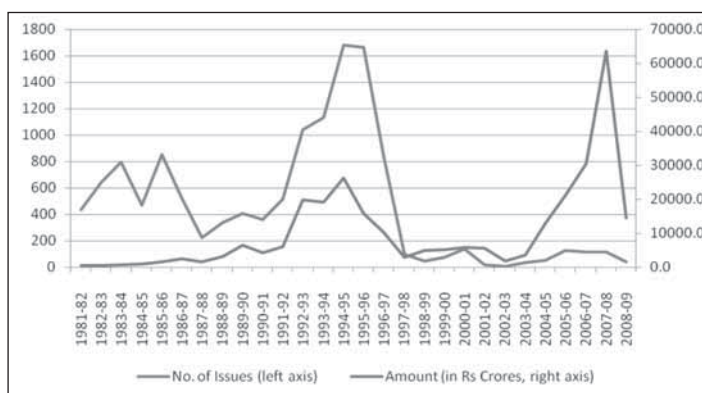
A well functioning stock market also generates demand for stocks by encouraging domestic savings. The stock market provides investors with an array of assets with varying degree of risk, return and liquidity. This increased choice of assets and the existence of a vibrant stock market provide savers with a wider range of saving options and instruments and thereby, induce more savings. There are a number of indicators to measure the size of a stock market. They are as follows:

Market Capitalization: The size of the stock market is often measured by market capitalization. Market capitalization of a certain company at time 't' is calculated as the share price of that company at time 't', multiplied by the number of shares outstanding of that public company. The sum of market capitalization of all listed companies of a stock exchange at time 't' gives the market capitalization of the stock exchange at time 't'.

Turnover Similarly turnover of a certain company at time 't' is equal to the share price of that company at time 't' multiplied by the number of transactions of the shares of that company in time 't'. The sum of turnover of all listed companies of a stock exchange at time 't' gives the total turnover of the stock exchange at time 't'.

In India, the secondary segment of the stock market has performed well over the years. The turnover and market capitalizations have grown significantly. The primary market in India has also grown but there is more potential for it to grow in terms of numbers and size of offerings in the primary markets. Figure 7.1 shows new capital issues by non-government public limited companies from the primary market. The figure shows that the public limited companies have used primary market in some years to raise resources; the primary market however has not been a regular source of funds.

Figure 7.1 : New capital issues by non-government public limited companies (Rs crores)



Source: Handbook of Statistics on Indian Economy

7.6 Derivatives Market in India: The two important segments of major Indian stock exchanges such as the National Stock Exchange (NSE) and the Bombay Stock Exchange

(BSE) are 'spot' markets and 'derivatives' markets. The spot market is a cash-for-delivery market where equities are traded for cash and delivered immediately. Since June 2000, BSE and NSE started derivatives trading. Currently, two types of derivatives are traded in NSE, namely options and futures. These derivatives can be based on equity prices, stock market indices, exchange rate and interest rate (futures). Over the years, the turnover volume in the derivatives market has increased manifold in India.

7.7 The Debt Market: Another extremely important market for financial system is the debt market. The debt market can be broadly divided into government securities market and the corporate debt market. Size of the corporate debt market is small in India. In 2007, it was estimated to be only around 14 percent of the Indian debt market.

Governments issue securities with maturities ranging from less than a year to a very long-term stretching up to 50 years. Typically, debt instruments with short-term maturities up to one year (called Treasury Bills) form a part of the money market and facilitate the Government's cash management operations, while government securities with maturities of more than a year (called Bonds) facilitate its medium to long-term financing requirements²⁹. While treasury bills are the instrument bought and sold in the money market, bonds are the instrument of the Government Securities Market. Government securities market and the money market play extremely important roles in a country's economy. The primary segment of this market enables the managers of public debt to raise resources from the market in a cost effective manner. Government securities market also allows the government to fund its fiscal deficit by borrowing money from the market through the sale of government securities.

Let us now discuss the corporate bond market. A liquid and well functioning corporate bond market can play a critical role in supporting economic development as it supplements the banking system to meet the requirements of the corporate sector for long-term capital investment and asset creation. RBI and SEBI have taken a number of measures to promote the corporate debt market. Notably, the FIIs have been allowed to invest in this market. Further, although there is a limit on the outstanding amount of FII investment in corporate debt, the limit has been increased to US \$ 15 billion.³⁰ The corporate bond market in India is still not very well developed.

Within the corporate debt market, the private placement market is gradually becoming important. In the private placement market, resources are raised through arrangers (merchant banking intermediaries) who place securities with a small number of financial institutions, banks, mutual funds and high net-worth individuals. Though the private placement market can involve issue of securities, debt or equity, in practice it is essentially a market for corporate debt.

²⁹ Government securities, also called the gilt edged securities or G-secs, are free from default risk and they provide reasonable returns

³⁰ The limit was raised from \$6 billion to \$15 billion in March 2009.

Chapter 8 : Regulatory institutions in India

8.1 Role of regulatory institutions in a market-based economy

In a market based economy, there is a need for a proper legal framework within which the market can operate. The numerous building blocks of a market economy need to perform their duties within the broad contours of this legal framework. Any sort of deviation from this framework would lead to market failure; that is, markets fail to perform their primary function. In today's globalized world, deviation from the legal framework by a single financial institution could lead to systemic risk and thereby jeopardize the entire economic structure. Hence, proper monitoring and supervision is crucial to keep up the momentum in the economy's growth and stability. A host of regulatory institutions such as RBI, SEBI, IRDA, PFRDA, FMC etc play a crucial role in ensuring the smooth functioning of the financial system in India. The aim of this chapter is to discuss the role of these institutions in the Indian economy.

8.2 The Reserve Bank of India (RBI)

The Reserve Bank of India (RBI) is the central bank of India. A central bank is the apex body of a country's financial system. The role of a central bank is crucial in maintaining the orderly development of the market based economy. The Reserve Bank of India was established on April 1, 1935 under the Reserve Bank of India Act, which was passed in the year 1934.

Under the Banking Regulation Act, 1949, the RBI has been vested with extensive powers of supervision and control over banks. The RBI prescribes regulations for sound functioning of banks and financial institutions, including non-banking finance companies. The RBI's regulatory functions relating to banks cover their establishment (that is, licensing), branch expansion, liquidity of their assets, management and methods of working, amalgamation, reconstruction and liquidation. The objective of such supervision and control is to ensure the development of a sound and stable banking system in the country. The control by the RBI is exercised through periodic inspections of banks and follow-up action and by calling for returns and other information from them periodically.

In addition to the supervision and control of commercial banks, the RBI performs a wide range of functions; particularly it

- Acts as currency authority; that is, it regulates the issue of currency in the country
- Controls money supply and credit (explained in Chapter 5)
- Manages foreign exchange reserves
- Serves as banker to the Government (It transacts all banking business of the Government which involves the receipt and payment of money on behalf of the government and carrying out its remittance and other banking operations.)
- Serves as Bankers Bank (i.e. RBI holds a part of the cash reserves of banks, lends them funds for short periods and provides them with centralised clearing and cheap and quick remittance facilities)

8.3 The Securities and Exchange Board of India (SEBI)

SEBI is the regulator for the securities market in India. SEBI Act 1992, was enacted to empower SEBI with statutory powers for :

- Protecting the Interests of investors in securities,
- promoting the development of the securities market, and
- regulating the securities market.

Its regulatory jurisdiction extends over corporates in the issuance of capital and transfer of securities, in addition to all intermediaries and persons associated with securities market. SEBI can conduct enquiries, audits and inspection of all concerned and adjudicate offences under the Act. It has powers to register and regulate all market intermediaries and also to penalise them in case of violations of the provisions of the Act, Rules and Regulations made there under. SEBI has full autonomy and authority to regulate and develop an orderly securities market.

8.4 Insurance Regulatory and Development Authority (IRDA)

IRDA was constituted as an autonomous body to regulate and develop the business of insurance and re-insurance in the country under the Insurance Regulatory & Development Authority Act, 1999. The key objective of IRDA is to promote market efficiency and ensure consumer protection in the insurance sector. Development of IRDA was also important as the insurance sector was opening up in India and a number of private and foreign players were entering the insurance market.

Section 14 of IRDA Act, 1999 lays down the duties, powers and functions of IRDA. Some of these are stated below:

- To regulate, promote and ensure orderly growth of the insurance business and re-insurance business.
- Protection of the interests of the policy holders in matters concerning assigning of policy, nomination by policy holders, insurable interest, settlement of insurance claim, surrender value of policy and other terms and conditions of contracts of insurance;
- Promoting efficiency in the conduct of insurance business;
- Promoting and regulating professional organisations connected with the insurance and re-insurance business;
- Regulating investment of funds by insurance companies;
- Adjudication of disputes between insurers and intermediaries or insurance intermediaries.

8.5 Pension Fund Regulatory and Development Authority (PFRDA)

In India, formal pension schemes only cover 12 percent of the working population. Only government employees and workers in the organized private sector were covered by these

schemes. It was felt necessary to increase the coverage of the government pension scheme. But the existing form of pension support for government employees was also putting fiscal pressure on the government. These two considerations led to pension reforms in India for both Central Government and for unorganized sectors. On January 1, 2004 the government launched a New Pension System (NPS). The move shifted all new central government employees (except for armed forces) to a defined contribution plan from the current non-contributory defined benefit scheme, shifting the risk of retirement financing from the government to individuals. Participants in the new scheme will have access to a range of investment products from selected private sector companies. The NPS would be open on a voluntary basis to non government workers, including those in the unorganized private sector. An important element of the reform was to set up a proper regulatory framework. The role of Pension Fund Regulatory and Development Authority (PFRDA) is to consolidate the initiatives taken so far regarding the full New Pension System and expanding the reach of the distribution network of NPS. The NPS architecture allows a subscriber to monitor his/her investments and returns under NPS, the choice of Pension Fund Manager (PFM) and the investment option would also rest with the subscriber. The design allows the subscriber to switch his/her investment options as well as pension funds. PFRDA has set up a Trust under the Indian Trusts Act, 1882 to oversee the functions of the PFMs. PFRDA also intends to intensify its effort towards financial education and awareness as a part of its strategy to protect the interest of the subscribers. PFRDA's efforts are an important milestone in the development of a sustainable and efficient voluntarily defined contribution based pension system in India. However, PFRDA, set up as a regulatory body for pension sector, is yet to get statutory powers as the Bill pertaining to that effect lapsed in Parliament with the expiry of last Lok Sabha in 2009.

8.6 Forward Markets Commission (FMC)

The Forward Markets Commission (FMC) was set up in 1953 under the Forward Contracts (Regulation) Act, 1952. FMC is the commodities market regulator in India. It is a statutory body headquartered at Mumbai. However, FMC is not an independent body and it is overseen by the Ministry of Consumer Affairs, Food and Public Distribution, Govt. of India.

Some of the main regulatory measures imposed by the FMC include daily mark to market system of margins, creation of trade guarantee fund, back-office computerization for the existing single commodity exchanges, online trading for the new exchanges, demutualization for the new exchanges, one-third representation of independent directors on the boards of existing exchanges etc. These regulations have led to the creation of a slew of modern Commodity exchange boards in India like the National Commodity & Derivatives Exchange Limited (NCDEX) and Multi Commodity Exchange of India Limited (MCX). FMC also disseminates trading data for each of the 3 national & 21 regional exchanges of futures trading in commodities in the country.

The functions of FMC are to:

- a) To advise the Central Government in respect of the recognition of or the withdrawal of recognition from any association or in respect of any other matter arising out of the administration of this Act;
- b) To keep forward markets under observation and to take such action in relation to them as it may consider necessary, in exercise of the powers assigned to it by or under this Act;
- c) To collect and whenever the Commission thinks it necessary, to publish information regarding the trading conditions in respect of goods to which any of the provisions of this Act is made applicable, including information regarding supply, demand and prices, and to submit to the Central Government periodical reports on the operation of this Act and on the working of forward markets relating to such goods;
- d) To make recommendations generally with a view to improving the organisation and working of forward markets;
- e) To undertake the inspection of the accounts and other documents of [any recognised association or registered association or any member of such association] ,whenever it considers it necessary; and
- f) To perform such other duties and exercise such other powers as may be assigned to the Commission by or under this Act, or as may be prescribed.

8.7 Stock Exchanges in India

Stock exchange performs an important part in the economic life of a country, acting as a free market for securities where prices are determined by the forces of supply and demand. Apart from the above basic function it also assists in mobilizing funds for the Government and the Industry.

In India, the stock exchanges have been entrusted with the primary responsibility of undertaking market surveillance. Information relating to price and volume movements in the market, broker positions, risk management, settlement process and compliance pertaining to listing agreement are monitored by the exchanges on a real time basis as part of their self regulatory function. In India, there are numerous stock exchanges among which the National Stock Exchange (NSE) and the Bombay Stock Exchange (BSE) are the leading ones. The stock exchanges offers a wide range of products including equity shares, Exchange Traded Funds (ETF), mutual funds, debt instruments, Index futures and Options, stock futures and options and Currency futures and options, interest rate futures etc.

(Model test paper for the module is available on the
website **www.nseindia.com** > 'Education' > 'Prepare for a Testing' link)

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