

CHAPTER – 7

PUBLIC FINANCE

UNIT – I

FISCAL FUNCTIONS : AN OVERVIEW

INTRODUCTION

The following are a few headlines which appeared recently in the leading business dailies:

1. Start-ups will be exempted from income tax for 3 years as part of benefits being given to entrepreneurs establishing start-ups.
2. Government looking at subsidizing R&D to boost foreign investments.
3. On May 22, 2020, the Monetary Policy Committee (MPC) in an off-cycle meeting of the members decides to cut key interest rates to make banks increase lending to mitigate the impact of COVID-19 on business and industry.
4. Government announces Rs. 3 lakh Crores 'collateral-free loan scheme' for businesses, especially micro, small and medium enterprises (MSMEs), as part of Rs 20-lakh-crore economic stimulus package to deal with the COVID-19 pandemic.
5. Free food kits and essential groceries supplied by government during COVID-19 pandemic

Each of the above statements represents a proactive response on the part of the government to achieve certain objectives in the interest of the economy and the society.

What exactly is the government planning to accomplish by the above measures? On close examination, we can find that the first two steps are intended to boost up innovation and entrepreneurship; the next one is a policy response which seeks to revive business and industry in view of the deteriorating outlook for economic activity due to the corona virus pandemic and the last one is to bring in welfare to the underprivileged sections of the society. The government does not expect the economic variables underlying the above mentioned phenomena to function automatically; rather it intervenes to direct them to function in particular directions. Such intervention on the part of the government is based on the belief that the objective of the economic system and the role of government is to improve the wellbeing of individuals and households.

We have experienced in our day-to-day life that though governments at various levels impose many rules and regulations in the economy, some matters still go unregulated. Similarly, most of the goods and services that we consume are provided to us by private producers, but certain goods and services are provided exclusively by the government. For a variety of reasons, we believe that governments should accomplish some activities and should not do others. The purpose of this lesson is to examine the economic functions of the government and to understand why the government should invariably perform them.

THE ROLE OF GOVERNMENT IN AN ECONOMIC SYSTEM

We shall first consider why an economic system should be in place. The basic economic problem of scarcity arises from the fact that on account of qualitative as well as quantitative constraints, the resources available to any society cannot produce all economic goods and services that its members desire to have. Therefore, an economic system should exist to answer the basic questions such as what, how and for whom to produce and how much resources should be set apart to ensure growth of productive capacity. The modern society, in general, offers three alternate economic systems through which the decisions of resource reallocation may be made namely, the market, the government and a mixed system where both markets and governments simultaneously determine resource allocation. Correspondingly, we have three economic systems namely, capitalism, socialism and mixed economy, each with varying degrees of state intervention in economic activities.

Adam Smith is often described as a bold advocate of free markets and minimal governmental activity. However, Smith saw an important resource allocation role for government when he underlined the role of government in national defence, maintenance of justice and the rule of law, establishment and maintenance of highly beneficial public institutions and public works which the market may fail to produce on account of lack of sufficient profits. Since the 1930s, more specifically as a consequence of the great depression, the state's role in the economy has been distinctly gaining in importance, and therefore, the traditional functions of the state as described above, have been supplemented with what is referred to as economic functions (also called fiscal functions or public finance function). While there are differences among different countries in respect of the nature and extent of government intervention in economies, all of them agree on one point that the governments are expected to play a major role in the economy. This comes out of the belief that government intervention will invariably influence the performance of the economy in a positive way.

Richard Musgrave, in his classic treatise 'The Theory of Public Finance' (1959), introduced the three-branch taxonomy of the role of government in a market economy. Musgrave believed that, for conceptual purposes, the functions of the government are to be separated into three, namely, resource allocation, (efficiency), income redistribution (fairness) and macroeconomic stabilization. The allocation and distribution functions are primarily microeconomic functions, while stabilization is a macroeconomic function. The allocation function aims to correct the sources of inefficiency in the economic system, while the distribution role ensures that the distribution of wealth and income is fair. Monetary and fiscal policies, the problems of macroeconomic stability, maintenance of high levels of employment and price stability etc fall under the stabilization function. We shall now discuss in detail this conceptual three-function framework of the responsibilities of the government.

THE ALLOCATION FUNCTION

Resource allocation refers to the way in which the available resources or factors of production are allocated among the various uses to which they might be put. It determines how much of the various kinds of goods and services will actually be produced in an economy. Resource allocation is a critical problem because the resources of a society are limited in supply, while human wants are unlimited. Moreover, any given resource can have many alternative uses. One of the most important functions of an economic system is the optimal or efficient allocation of scarce resources so that the available resources are put to their best use and no wastages are there.

As we know, the private sector resource allocation is characterized by market supply and demand and price mechanism as determined by consumer sovereignty and producer profit motives. The state's allocation, on the other hand, is accomplished through the revenue and expenditure activities of governmental budgeting. In the real world, resource allocation is both market- determined and government-determined.

A market economy is subject to serious malfunctioning in several basic respects. There is also the problem of nonexistence of markets in a variety of situations. While private goods will be sufficiently provided by the market, public goods will not be produced in sufficient quantities by the market. Why do markets fail to give the right answers to the questions as to how the resources can be efficiently utilised and what goods should be produced and in what quantities? In other words, why do markets generate misallocation of resources?

Efficient allocation of available resources in an economy takes place only when free and competitive market structure exists and economic agents make rational choices and decisions. Such efficient allocation of resources is assumed to take place only in perfectly competitive markets. In reality, markets are never perfectly competitive. Market failures which hold back the efficient allocation of resources occur mainly due to the following reasons:

- Imperfect competition and presence of monopoly power in different degrees leading to under-production and higher prices than would exist under conditions of competition. These distort the choices available to consumers and reduce their welfare.
- Markets typically fail to provide collective goods which are, by their very nature, consumed in common by all people.
- Markets fail to provide the right quantity of merit goods.
- Common property resources are overused and exhausted in individual pursuit of self-interest.
- Externalities which arise when the production and consumption of a good or service affect people and they cannot influence through markets the decision about how much of the good or service should be produced e.g. pollution.
- Factor immobility which causes unemployment and inefficiency.
- Imperfect information, and
- Inequalities in the distribution of income and wealth.

According to Musgrave, the state is the instrument by which the needs and concerns of the citizens are fulfilled and therefore, public finance is connected with economic mechanisms that should ideally lead to the effective and optimal allocation of limited resources. This logic, in effect, makes it necessary for the government to intervene in the market to bring about improvement in social welfare. In the absence of appropriate government intervention, market failures may occur and the resources are likely to be misallocated with too much production of certain goods or too little production of certain other goods. The allocation responsibility of the governments involves suitable corrective action when private markets fail to provide the right and desirable combination of goods and services. Briefly put, market failures provide the rationale for government's allocative function.

You might have noticed that in many cases, the government can provide us with goods and services that we cannot produce on our own or buy at a price from the market. For example, the government establishes property rights and makes the necessary arrangements for enforcing contracts through

provision of law enforcement and courts. Goods which involve externalities that are not appropriately accounted for by price mechanism in the market system require intervention by the government for corrective measures. Merit goods which are greatly beneficial to the society also fall under the purview of provision by the government. Demerit goods are controlled with appropriate legislations. These interventions do not imply that markets are replaced by government action. In its allocation role, the government acts as a complement rather than as a substitute to the market system in an economy.

The resource allocation role of government's fiscal policy focuses on the potential for the government to improve economic performance through its expenditure and tax policies. The allocative function in budgeting determines who and what will be taxed as well as how and on what the government revenue will be spent. It is concerned with the provision of public goods and the process by which the total resources of the economy are divided among various uses and an optimum mix of various social goods (both public goods and merit goods). The allocation function also involves the reallocation of society's resources from private use to public use.

A variety of allocation instruments are available by which governments can influence resource allocation in the economy. For example,

- government may directly produce an economic good (for example, electricity and public transportation services)
- government may influence private allocation through incentives and disincentives (for example, tax concessions and subsidies may be given for the production of goods that promote social welfare and higher taxes may be imposed on goods such as cigarettes and alcohol)
- government may influence allocation through its competition policies, merger policies etc. which affect the structure of industry and commerce (for example, the Competition Act in India promotes competition and prevents anti-competitive activities)
- governments' regulatory activities such as licensing, controls, minimum wages, and directives on location of industry influence resource allocation.
- government sets legal and administrative frameworks, and
- any mixture of intermediate methods may be adopted by governments

Maximizing social welfare is one of the primary and most commonly manifest reasons for government intervention in the market. However, it is also possible that instead of eliminating market distortions, sometimes government intervention may contribute to generate them. Such instances are referred to as government failure. A government failure is said to occur when government intervention in the market creates inefficiency and leads to misallocation of society's scarce resources. The possible sources of this type of government failures are inadequate information, political self-interest, conflicting objectives, bureaucracy, corruption and red tape, and high administrative costs involved in government intervention. Government failure may be relatively inconsequential if it gets restricted to being simply ineffective and therefore the costs of such intervention are limited to the resources wasted for such intervention. Government failure is more serious when such intervention has generated new and serious problems which will have far reaching adverse consequences on the welfare of citizens. Governments should, therefore, identify

and evaluate the inefficiencies that may result from market failure and the potential inefficiencies associated with deliberate government policies framed to redress market failure.

REDISTRIBUTION FUNCTION

You might have noticed that over the past decades there has been tremendous expansion in economic activities resulting in enormous increase in aggregate output and wealth. However, the outcomes of this growth have not spread evenly across the households. The distribution responsibility of the government arises from the fact that, left to the market, the distribution of income and wealth among individuals in the society is likely to be skewed and therefore the government has to intervene to ensure a more desirable and just distribution. A major function of the present-day governments therefore involves changing the pattern of distribution of income, wealth and opportunities from what the market would put forward to a more socially optimal and egalitarian one.

The distributive function of budget is related to the basic question of for whom should an economy produce goods and services. As such, it is concerned with the adjustment of the distribution of income and wealth so as to ensure distributive justice namely, equity and fairness. Governments can redistribute either through the expenditure side or through the revenue side of the budget. On the expenditure side, governments may provide free or subsidized education, healthcare, housing, food and basic goods etc to deserving people. On the revenue side, redistribution is done through progressive taxation.

Effective demand is determined by the level of income of the households and this in turn determines the distribution of real output among people. Therefore, the distribution function also relates to the manner in which the effective demand over the economic goods is divided among the various individual and family spending units of the society.

The distribution function of the government aims at:

- redistribution of income to achieve an equitable distribution of societal output among households
 - advancing the well-being of those members of the society who suffer from deprivations of different types
 - providing equality in income, wealth and opportunities
 - providing security (in terms of fulfillment of basic needs) for people who have hardships, and
 - ensuring that everyone enjoys a minimal standard of living
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- A few examples of the redistribution function (or market intervention for socio- economic reasons) performed by governments are:
 - taxation policies of the government whereby progressive taxation of the rich is combined with provision of subsidy to the poor households
 - proceeds from progressive taxes used for financing public services, especially those that benefit low-income households (for example, supply of essential food grains at highly subsidized prices to BPL households)
 - employment reservations and preferences to protect certain segments of the population,

- unemployment benefits and transfer payments to provide support to the underprivileged, dependent, and physically handicapped,
- families below the poverty line are provided with monetary aid and aid in kind
- regulation of manufacture and sale of certain products to ensure health and well-being of consumers, and
- special schemes for backward regions and for the vulnerable sections of the population

In modern times, most of the egalitarian welfare states provide free or subsidized education and health-care system, unemployment benefits, pensions and such other social security measures. There is, nevertheless, an argument that in exercising the redistributive function, there would be a conflict between efficiency and equity. In other words, governments' redistribution policies which interfere with producer choices or consumer choices are likely to have efficiency costs or deadweight losses. For example, greater equity can be achieved through high rates of taxes on the rich; but high rates of taxes could also act as a disincentive to entrepreneurship and work, and discourage people from making savings and investments and taking risks. This in turn will have negative consequences for economic output, productivity and growth of the economy. Consequently, the potential tax revenue may be reduced in future and the scope for government's welfare activities would get seriously limited. As such, an optimal budgetary policy towards any distributional change should reconcile the conflicting goals of efficiency and equity by exercising an appropriate trade-off between them. In other words, redistribution measures should be accomplished with minimal efficiency costs by carefully balancing equity and efficiency objectives.

STABILIZATION FUNCTION

The theoretical rationale for the stabilization function of the government is derived from the Keynesian proposition that a market economy does not automatically generate full employment and price stability and therefore, the governments should pursue deliberate stabilization policies. Business cycles are natural phenomena in any economy and they tend to occur periodically. The market system has inherent tendencies to create business cycles. The market mechanism is limited in its capacity to prevent or to resolve the disruptions caused by the fluctuations in economic activity. In the absence of appropriate corrective intervention by government, the instabilities that occur in the economy in the form of recessions, inflation etc. may be prolonged for longer periods causing enormous hardships to people, especially the poorer sections of the society. It is also possible that a situation of stagflation (a state of affairs in which inflation and unemployment exist side by side) may set in and make the problem more intricate. The stabilization issue also becomes more complex due to 'contagion effect' whereby the increased international interdependence and financial integration causes forces of instability to get easily transmitted from one country to other countries.

The stabilization function is one of the key functions of fiscal policy and aims at eliminating macroeconomic fluctuations arising from suboptimal allocation of resources. As you might recall, the economic crisis that engulfed the world in 2008 and the more recent global phenomenon of COVID pandemic-induced economic crisis have highlighted the importance of macroeconomic stability and have, therefore, revived immense interest in countercyclical fiscal policy.

The stabilization function is concerned with the performance of the aggregate economy in terms of:

- labour employment and capital utilization,
- overall output and income,
- general price levels,
- balance of international payments, and
- the rate of economic growth.

Government's fiscal policy has two major components which are important in stabilizing the economy:

1. an overall effect generated by the balance between the resources the government puts into the economy through expenditures and the resources it takes out through taxation, charges, borrowing etc.
2. a microeconomic effect generated by the specific policies it adopts.

Government's stabilization intervention may be through monetary policy as well as fiscal policy. Monetary policy works through controlling the size of money supply and interest rate in the economy which in turn would affect consumption, investment and prices. Fiscal policy for stabilization purposes attempts to direct the actions of individuals and organizations by means of its expenditure and taxation decisions. On the expenditure side, Government can choose to spend in such a way that it stimulates other economic activities. For example, government expenditure on building infrastructure may initiate a series of productive activities. Production decisions, investments, savings etc can be influenced by its tax policies.

We know that government expenditure injects more money into the economy and stimulates demand. On the other hand, taxes reduce the disposable income of people and therefore, reduce effective demand. During recession, in order to ensure income protection, the government increases its expenditure or cuts down taxes or adopts a combination of both so that aggregate demand is kept stable or even boosted up with more money put into the hands of the people. On the other hand, to control high inflation the government cuts down its expenditure or raises taxes. In other words, an expansionary fiscal policy is adopted to alleviate recession and a contractionary fiscal policy is resorted to for controlling high inflation. The nature of the budget (surplus or deficit) also has important implications on a country's economic activity. While deficit budgets are expected to stimulate economic activity, surplus budgets tend to slow down economic activity. Generally government's fiscal policy has a strong influence on the performance of the macro economy in terms of employment, price stability, economic growth and external balance.

There is often a conflict between the different goals and functions of budgetary policy. Effective policy design to meet the diverse goals of government is very difficult to conceive and to implement. The challenge before any government is how to design its budgetary policy so that the pursuit of one goal does not jeopardize the other.

CONCLUSION

We have discussed the need for and rationale of government intervention to improve social welfare by enhancing stability, efficiency and fairness. However, we should also understand that when we say that the market-generated allocation of resources is imperfect, it does not necessarily imply that

the government is always infallible and at all times capable of correcting the failures of the market. Governments are likely to commit serious errors in its attempt to correct market failure. For example, in certain cases the costs incurred by government to deal with some market failure could be greater than the cost of the market failure itself. Moreover, just as individuals, governments too have only imperfect information, and hence can commit mistakes. It is also possible that individuals may use government as a mechanism for maximizing their self-interest. Moreover, governments may not always be unbiased and benevolent.

SUMMARY

Government intervention to direct the functioning of the economy is based on the belief that the objective of the economic system and the role of government is to improve the wellbeing of individuals and households.

- An economic system should exist to answer the basic questions such as what, how and for whom to produce and how much resources should be set apart to ensure growth of productive capacity.
- Since the 1930s, the traditional functions of the state have been supplemented with the economic functions (also called the fiscal functions or the public finance function).
- Richard Musgrave (1959) introduced the three-branch taxonomy of the role of government in a market economy namely, resource allocation, income redistribution and macroeconomic stabilization.
- The allocation and distribution functions are primarily microeconomic functions, while stabilization is a macroeconomic function.
- One of the most important functions of an economic system is the optimal or efficient allocation of scarce resources so that the available resources are put to their best use and no wastages are there.
- Market failures, which hold back the efficient allocation of resources, occur mainly due to imperfect competition, presence of monopoly power, collectively consumed public goods, externalities, factor immobility, imperfect information, and inequalities in the distribution of income and wealth.
- The allocation responsibility of the governments involves appropriate corrective action when private markets fail to provide the right and desirable combination of goods and services.
- A variety of allocation instruments are available by which governments can influence resource allocation in the economy such as, direct production, provision of incentives and disincentives, regulatory and discretionary policies etc.,
- The distributive function of budget is related to the basic question of for whom should an economy produce goods and services.
- The distribution function aims at redistribution of income so as to ensure equity and fairness to promote the wellbeing of all sections of people and is achieved through taxation, public expenditure, regulation and preferential treatment of target populations.
- Redistribution policies are likely to have efficiency costs or deadweight losses and therefore redistribution measures should be accomplished with minimal efficiency cost by carefully balancing equity and efficiency objectives.

- A market economy does not automatically generate full employment and price stability and therefore the governments should pursue deliberate stabilization policies.
- Stabilization function is one of the key functions of fiscal policy and aims at eliminating macroeconomic fluctuations arising from suboptimal allocation.
- The stabilization function is concerned with the performance of the aggregate economy in terms of labour employment and capital utilization, overall output and income, general price levels, economic growth and balance of international payments.
- Government's stabilization intervention may be through monetary policy as well as fiscal policy. Monetary policy works through controlling the size of money supply and interest rate in the economy, while fiscal policy aims at changing aggregate demand by suitable changes in government spending and taxes.
- There is often conflict between the different goals and functions of budgetary policy. The challenge before any government is how to design its budgetary policy so that the pursuit of one goal does not jeopardize the other.
- Government intervention does not necessarily imply that the government is always capable of correcting the market failures. Government failures occur due to the imperfect information, high administrative costs and tendency of bureaucracy and the politicians to promote vested self-interest using government mechanisms.

UNIT – II MARKET FAILURE

INTRODUCTION

Before we go into the subject matter of market failure which is the focus of this unit, we shall examine two familiar events that are in some way connected with the phenomenon of market failure.

CASE I

Sarva Shiksha Abhiyan (SSA) is a centrally sponsored scheme implemented by the Government of India in partnership with the state governments, for universalising good quality elementary education for all children in the 6-14 age groups in a time-bound manner. Through this programme, the government aims to provide opportunity for children to learn about and master their natural environment in order to develop their potential intellectually, spiritually as well as materially. The ultimate objective is to bring in social, regional and gender quantity.

Nearly everyone believes that providing basic education to all citizens is an important responsibility of the government. This is the reason why education is almost entirely administered and extensively financed by government.

QUESTIONS

- Why do you think governments should intervene to provide education?
- What do you think the outcome will be if it is left completely to private entrepreneurs?

CASE II

The Ministry Women and Child Development is implementing two Centrally Sponsored Umbrella schemes across the country namely:

1. Integrated Child Development Services and
2. Mission for Protection and Empowerment of Women.

There are currently thirteen on-going schemes that target improvements in the condition of women and children. The union budget 2020-21 allocated a total of Rs. 28,600 Crores for women-specific schemes for the financial year 2020-21. These programmes mainly aim at promotion of greater nutrition security to women, increasing women's economic participation, women's empowerment and promotion of education of girl child.

The above case is an example of how government and specifically constituted bodies address different issues to protect the interests of women and children.

QUESTION

- Since people should ideally recognize women's rights and need to establish the same, why should governments interfere with the system?

THE CONCEPT OF MARKET FAILURE

The general belief is that markets are amazingly competent in organizing the activities of an economy as they are generally efficient and capable of achieving optimal allocation of resources. However, there are exceptions to this. Under certain circumstances, 'market failure' occurs, i.e. the market fails to allocate resources efficiently and therefore, market outcomes become inefficient.

Market failure is a situation in which the free market leads to misallocation of society's scarce resources in the sense that there is either overproduction or underproduction of particular goods and services leading to a less than optimal outcome. The reason for market failure lies in the fact that though perfectly competitive markets work efficiently, most often the prerequisites of competition are unlikely to be present in an economy. Market failures are situations in which a particular market, left to itself, is inefficient. We shall first try to understand why markets fail and later, in the subsequent unit, proceed to identify the role of government in dealing with market failure.

We need to appreciate the fact that there are two aspects of market failures namely, demand-side market failures and supply side market failures. Demand- side market failures are said to occur when the demand curves do not take into account the full willingness of consumers to pay for a product. For example, though we experience the benefit, none of us will be willing to pay to view a wayside fountain because we can view it without paying. Supply-side market failures happen when supply curves do not incorporate the full cost of producing the product. For example, a thermal power plant that uses coal may not have to include or pay completely for the costs to the society caused by fumes it discharges into the atmosphere as part of the cost of producing electricity.

WHY DO MARKET FAIL?

The pertinent question here is why do markets fail? There are four major reasons for market failure. They are:

- Market power,
- Externalities,
- Public goods, and
- Incomplete information

We shall discuss each of the above in detail.

MARKET POWER

Market power or monopoly power is the ability of a firm to profitably raise the market price of a good or service over its marginal cost. Firms that have market power are price makers and therefore, can charge a price that gives them positive economic profits. Excessive market power causes the single producer or a small number of producers to produce and sell less output than would be produced in a competitive market. Market power can cause markets to be inefficient because it keeps price higher and output lower than the outcome of equilibrium of supply and demand. In the extreme case, there is the problem of non-existence of markets or missing markets resulting in failure to produce various goods and services, despite the fact that such products and services are wanted by people. For example, the markets for pure public goods do not exist.

EXTERNALITIES

We begin by describing externalities and then, proceed to discuss how they create market inefficiencies. As we are aware, anything that one individual does, may have, at the margin, some effect on others. For example, if individuals decide to switch from consumption of ordinary vegetables to consumption of organic vegetables, they would, other things equal, increase the price of organic vegetables and potentially reduce the welfare of existing consumers of organic vegetables. However, we should note that all these operate through price mechanism i.e. through changes in prices. The price system works efficiently because market prices convey information to both producers and consumers.

However, sometimes, the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price. Such costs or benefits which are not accounted for by the market price are called externalities because they are “external” to the market. In other words, there is an externality when a consumption or production activity has an indirect effect on other’s consumption or production activities and such effects are not reflected directly in market prices. The unique feature of an externality is that it is initiated and experienced not through the operation of the price system, but outside the market. Since it occurs outside the price mechanism, it has not been compensated for, or in other words it is uninternalized or the cost (benefit) of it is not borne (paid) by the parties.

Externalities are also referred to as 'spillover effects', 'neighbourhood effects' 'third-party effects' or 'side-effects', as the originator of the externality imposes costs or benefits on others who are not responsible for initiating the effect.

Externalities may be unidirectional or reciprocal. Suppose a workshop creates ear-splitting noise and imposes an externality on a baker who produces smoke and disturbs the workers in the workshop, then this is a case of reciprocal externality. If an accountant who is disturbed by loud music but has not imposed any externality on the singers, then the externality is unidirectional.

Externalities can be positive or negative. Negative externalities occur when the action of one party imposes costs on another party. Positive externalities occur when the action of one party confers benefits on another party. The four possible types of externalities are:

- Negative production externalities
- Positive production externalities
- Negative consumption externalities, and
- Positive consumption externalities

NEGATIVE PRODUCTION EXTERNALITIES

A negative externality initiated in production which imposes an external cost on others may be received by another in consumption or in production. As an example, a negative production externality occurs when a factory which produces aluminium discharges untreated waste water into a nearby river and pollutes the water causing health hazards for people who use the water for drinking and bathing. Pollution of river also affects fish output as there will be less catch for fishermen due to loss of fish resources. The former is a case where a negative production externality is received in consumption and the latter presents a case of a negative production externality received in production. The firm, however, has no incentive to account for the external costs that it imposes on consumers of river water or fishermen when making its production decision. Additionally, there is no market in which these external costs can be reflected in the price of aluminium.

POSITIVE PRODUCTION EXTERNALITIES

A positive production externality initiated in production that confers external benefits on others may be received in production or in consumption. Compared to negative production externalities, positive production externalities are less common. As an example of positive production externality received in production, we can cite the case of a firm which offers training to its employees for increasing their skills. The firm generates positive benefits on other firms when they hire such workers as they change their jobs. Another example is the case of a beekeeper who locates beehives in an orange growing area enhancing the chances of greater production of oranges through increased pollination. A positive production externality is received in consumption when an individual raises an attractive garden and the persons walking by enjoy the garden. These external effects were not in fact taken into account when the production decisions were made.

NEGATIVE CONSUMPTION EXTERNALITIES

Negative consumption externalities are extensively experienced by us in our day to day life. Such negative consumption externalities initiated in consumption which produce external costs on others may be received in consumption or in production. Examples to cite where they affect consumption of

others are smoking cigarettes in public place causing passive smoking by others, creating litter and diminishing the aesthetic value of the room and playing the radio loudly obstructing one from enjoying a concert. The act of undisciplined students talking and creating disturbance in a class preventing teachers from making effective instruction and the case of excessive consumption alcohol causing impairment in efficiency for work and production are instances of negative consumption externalities affecting production.

POSITIVE CONSUMPTION EXTERNALITIES

A positive consumption externality initiated in consumption that confers external benefits on others may be received in consumption or in production. For example, if people get immunized against contagious diseases, they would confer a social benefit to others as well by preventing others from getting infected. Consumption of the services of a health club by the employees of a firm would result in an external benefit to the firm in the form of increased efficiency and productivity. When there are externalities and the costs or benefits are experienced by people outside a transaction, the actors in the transaction (consumers or producers) tend to ignore those external costs or benefits.

Having discussed the nature of externalities in production and consumption, we shall now examine how externalities cause inefficiency and market failure. Before we attempt this, we need to understand the difference between private costs and social costs. Private cost is the cost faced by the producer or consumer directly involved in a transaction. If we take the case of a producer, his private cost includes direct cost of labour, materials, energy and other indirect overheads. Social costs refer to the total costs to the society on account of a production or consumption activity. Social costs are private costs borne by individuals directly involved in a transaction together with the external costs borne by third parties not directly involved in the transaction. In other words, social costs are the total costs incurred by the society when a good is consumed or produced. It is thus private costs plus costs to third parties (i.e. private costs + total negative externalities).

Social Cost = Private Cost + External Cost

Social benefits are the total benefits accrued to the society from an economic activity. Social benefits can be defined as private benefits plus benefits to third parties (i.e. private benefits + total positive externalities).

Let us consider the case of social costs. The external costs are not included in firms' income statements or consumers' decisions. However, these external costs are real and important as far as the society is concerned. As we have mentioned above, firms do not have to pay for the damage resulting from the pollution which they generate. As a result, each firm's cost which is considered for determining output would be only private cost or direct cost of production which does not incorporate externalities.

The presence of externalities creates a divergence between private and social costs of production. When negative production externalities exist, social costs exceed private cost because the true social cost of production would be private cost plus the cost of the damage from externalities. Negative externalities impose costs on society that extend beyond the cost of production as originally intended and actually borne by the producer. If producers do not take into account the externalities,

there will be over-production and market failure. Applying the same logic, negative consumption externalities lead to a situation where the social benefit of consumption is less than the private benefit.

Externalities cause market inefficiencies because they hinder the ability of market prices to convey accurate information about how much to produce and how much to consume. Given that externalities are more often negative, we shall focus on them.

A market exchange assumes that the participants have total control over every aspect of their product and that the prices (or fees) they charge represent the full cost of production plus profit. As a matter of fact, the producers of products with extensive negative externalities are not fully accountable for the full cost of their production which includes private as well as social costs. Recall our earlier case of the aluminium factory which causes pollution of river water. As a matter of fact, the prices of aluminium tend to reflect only the private costs of the producer. Production remains efficient only when all benefits and costs are paid for. Since externalities are not reflected in market prices, they can be a source of inefficiency. Without government intervention, such a producer will have no reason to consider the social costs of pollution. When firms do not have to worry about the negative externalities associated with their production, the result is excess production and unnecessary social costs. The problem, though serious, does not usually float up much because:

- The society does not know precisely who are the producers of harmful externalities
- Even if the society knows it, the cause-effect linkages are so unclear that the negative externality cannot be unquestionably traced to its producer.

Before we look into the effect of externalities, we need to be clear about the terms used in the analysis

- Marginal private cost (MPC) is the change in the producer's total cost brought about by the production of an additional unit of a good or service. It is also known as marginal cost of production. (represented by the supply curve)
- Marginal external cost (MEC) is the change in the cost to parties other than the producer or buyer of a good or service due to an additional unit of the good or service.
- Marginal Social cost (MSC) is the change in society's total cost brought about by an additional unit of a good or service. ($=MPC+MEC$)
- Marginal private benefit (MPB) = marginal willingness to pay (represented by the demand curve)
- Marginal external benefit (MEB) is the change in the benefit to parties other than the producer or buyer of a good or service due to an additional unit of the good or service.
- Marginal Social benefit (MSB) is the change society's total benefits associated with an additional unit of a good or service. ($=MPB+MEB$)
- When no externality is present, there are no external costs and marginal social cost is the same as marginal private cost; and marginal social benefit is the same as marginal private benefit. Therefore, $MPC=MSC$ and $MPB=MSB$.
- If an externality is present, then either $MSC \neq MPC$ or $MSB \neq MPB$ (or both); and hence equilibrium (where $MPC=MPB$) is unlikely to be efficient.

Now, the pertinent question is: what is 'socially optimal output'? It is that amount of output which takes into account all benefits (private as well as external) and all costs (private as well as external). When we want to find out whether social efficiency is achieved or not (i.e. highest possible social benefits, given the constraint of costs), we need to compare marginal social benefits to marginal social costs. The condition for efficiency and optimum output is $MSB=MSC$ i.e., marginal social benefit = marginal social cost. It means 'the last unit produced should yield benefits to society that exactly equals the costs to society for producing the last unit'.

The problem of externalities can be explained with the help of the figure below:

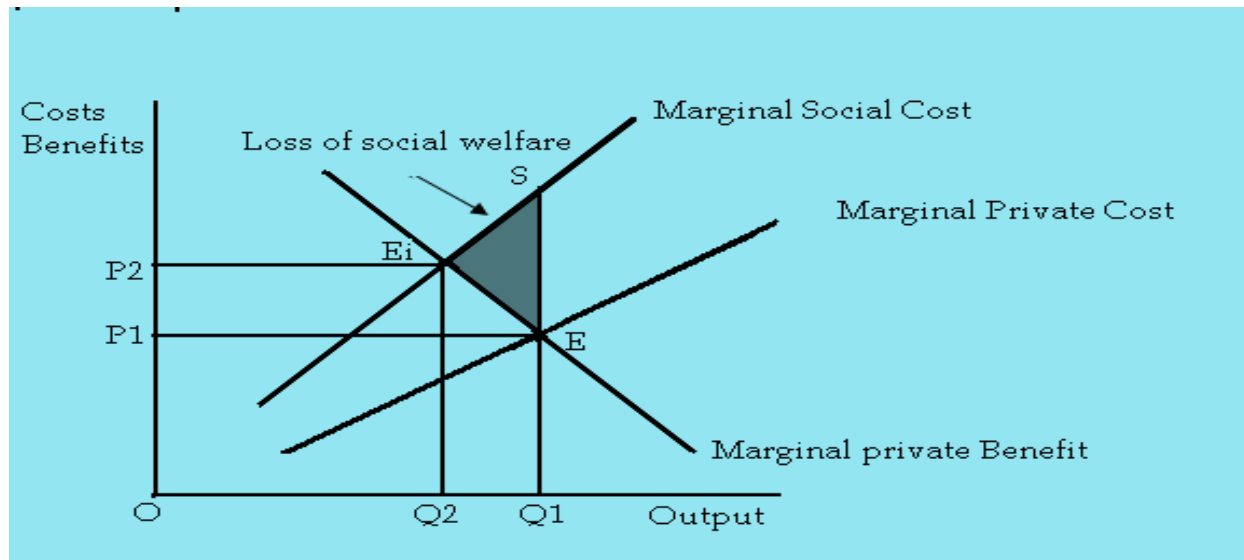


Figure 2.2.1

Negative Production Externalities and Loss of Social welfare

The equilibrium level of output that would be produced by a free market is Q_1 at which marginal private benefit (MPB) is equal to marginal private cost (MPC). Marginal social cost (MSC) represents the full or true cost to the society of producing another unit of a good. It includes marginal private cost (MPC) and marginal external cost (MEC). Assuming that there are no externalities arising from consumption (so that $MPB=MSB$), we can see that marginal social cost (Q_1S) is higher than marginal private cost (Q_1E). Social efficiency occurs at Q_2 level of output where MSC is equal to MSB . Output Q_1 is socially inefficient because at Q_1 , the MSC is greater than the MSB and represents over production. The shaded triangle represents the area of dead weight welfare loss. It indicates the area of overconsumption. Thus, we conclude that when there is negative externality, a competitive market will produce too much output relative to the social optimum. This is a clear case of market failure where prices are lower than optimum and fail to provide the correct signals.

PUBLIC GOODS

Paul A. Samuelson who introduced the concept of 'collective consumption good' in his path-breaking 1954 paper 'The Pure Theory of Public Expenditure' is usually recognized as the first economist to develop the theory of public goods. A public good (also referred to as collective consumption good or

social good) is defined as one which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individuals' consumption of that good.

Before we go on to discuss the distinguishing features of public goods and how they differ from private goods, it is pertinent to first understand the characteristics of private goods.

CHARACTERISTICS OF PRIVATE GOODS

- Private goods refer to those goods that yield utility to people. Since they are scarce anyone who wants to consume them must purchase them.
- Owners of private goods can exercise private property rights and can prevent others from using the good or consuming their benefits.
- Consumption of private goods is 'rivalrous' that is the purchase and consumption of a private good by one individual prevents another individual from consuming it. In other words, simultaneous consumption of a rivalrous good by more than one person is impossible.
- Private goods are 'excludable' i.e. it is possible to exclude or prevent consumers who have not paid for them from consuming them or having access to them. In other words, those who want to consume private goods must buy them at a price from its sellers. Excludability necessitates that consumers of private goods send the right signals in the market. A buyer of a private good is forced in a transaction to reveal what he or she is willing to pay for a good or a service.
- Private goods do not have the free-rider problem. This means that private goods will be available to only those persons who are willing to pay for them.
- Private goods can be parcelled out among different individuals and therefore, it is possible to refer to total consumption as the sum of each individual's consumption. Therefore, the market demand curve for a private good is obtained by horizontal summation of individual demand curves.
- All private goods and services can be rejected by the consumers if their needs, preferences or budgets change.
- Additional resource costs are involved for producing and supplying additional quantities of private goods.
- Since buyers can be excluded from enjoying the good if they are not willing and able to pay for it, consumers will get different amounts of goods and services based on their desires and ability and willingness to pay. Therefore, whenever there is inequality in income distribution in an economy, issues of fairness and justice tend to arise with respect to private goods.
- Normally, the market will efficiently allocate resources for the production of private goods.

Most of the goods produced and consumed in an economy are private goods. A few examples are: food items, clothing, movie ticket, television, cars, houses etc.

You can make a list of ten such goods and check whether each of them satisfies all the above mentioned characteristics.

Having understood the features of private goods, we shall now proceed to consider the distinguishing characteristics of public goods

CHARACTERISTICS OF PUBLIC GOODS

- Public goods yield utility to people and are products (goods or services) whose consumption is essentially collective in nature. No direct payment by the consumer is involved in the case of pure public goods.
- Public good is non-rival in consumption. It means that consumption of a public good by one individual does not reduce the quality or quantity available for all other individuals. When consumed by one person, it can be consumed in equal amounts by the rest of the persons in the society. That is, your consumption of a public good in no way interferes with its consumption by other people. For example, if you eat your apple, another person too cannot eat it. But, if you walk in street light, other persons too can walk without any reduced benefit from the street light.
- Public goods are non-excludable. Consumers cannot (at least at less than prohibitive cost) be excluded from consumption benefits. If the good is provided, one individual cannot deny other individuals' consumption. Provision of a public good by government means provision for all. For example, national defence once provided, it is impossible to exclude anyone within the country from consuming and benefiting from it.
- Public goods are characterized by indivisibility. For example, you can buy chocolates or ice cream as separate units, but a lighthouse, a highway, an airport, defence, clean air etc cannot be consumed in separate units. In the case of public goods, each individual may consume all of the good i.e. the total amount consumed is the same for each individual.
- Public goods are generally more vulnerable to issues such as externalities, inadequate property rights, and free rider problems.

Once a public good is provided, the additional resource cost of another person consuming the goods is 'zero'. A good example is a lighthouse near a sea shore to guide the ships. Once the beacon is lit, an additional ship can use it without any additional cost of provision.

Public goods are generally divided into two categories namely, public consumption goods and public factors of production. A few examples of public goods are: national defence, highways, public education, scientific research which benefits everyone, law enforcement, lighthouses, fire protection, disease prevention and public sanitation.

A unique feature of public goods is that they do not conform to the settings of market exchange. The property rights of public goods with extensive indivisibility and nonexclusive properties cannot be

determined with certainty. Therefore, the owners of such products cannot exercise sufficient control over their assets. For example, if you maintain a beautiful garden, you cannot exercise full control over it so as to charge your neighbours for the enjoyment which they get from your garden. As a consequence of their peculiar characteristics, public goods do not provide incentives that will generate optimal market reaction. Producers are not motivated to produce a socially-optimal amount of products if they cannot charge a positive price for them or make profits from them. As such, though public goods are extremely valuable for the well-being of the society, left to the market, they will not be produced at all or will be grossly under-produced.

Now that we have understood the difference between private goods and public goods, we shall examine the implications of these characteristics on the production, supply and use of these goods. As mentioned above, ideally competitive markets have sufficient incentives to produce and supply private goods. Because of the peculiar characteristics of public goods such as indivisibility, non-excludability and no rivalry, competitive private markets will fail to generate economically efficient outputs of public goods. That is why public goods are often (though not always) under-provided in a free market economy.

CLASSIFICATION OF PUBLIC GOODS

One approach to classify goods so as to establish taxonomy of different types of goods is to concentrate on the non-rival and non-excludable characteristics of public goods. The following table presenting the taxonomy of goods will help us understand the classification of goods

	Excludable	Non-excludable
Rivalrous	A Private goods food, clothing, cars	B Common resources such as fishstocks, forest resources, coal
Non-rivalrous	C Club goods, cinemas, private parks, satellite television	D Pure public goods such as national defence

Goods in category A are rival in consumption and are excludable. These are also known as pure private goods

Goods in category D which are characterized by both non-excludability and non-rivalry properties are called pure public goods. A pure public good is non-rival as well as non-excludable. The benefit that an individual gets from a pure public good does not depend on the number of users. The clarity of your radio reception, for example, is generally independent of the number of other listeners. Knowledge is another non-rivalrous good. Once something has been discovered, one person's use of that knowledge does not preclude others from applying the same knowledge. But, this is not the case with most private goods.

Consumption goods that fall in category B are rival but not excludable. Common resources would come under this (explained in section 2.4.6 below). Let us take another example. Bees from the hives of different bee keepers collect nectar from the nearby orange garden. The blossom is rival as the nectar collected for one hive is unavailable to another. Even so, it may be inconceivable to try to deny any particular honey bee access i.e. the situation is non-excludable. The examples include public parks, public roads in a city etc.

Goods in category C are non-rival in consumption but are excludable. A toll booth may exclude vehicles unless payment is made. Yet, if the road is not congested, one car may utilize it with no loss of benefit even though the other cars are also consuming the road service. Similarly, admission to a cinema, swimming pool, music concert etc. has potential for exclusion, but if there is no congestion, each individual admitted may consume the services without subtracting from the benefit of others. A good example of this is DTH cable TV service or Digital goods. The consumption of these is non-rival in nature but exclusion of households who do not pay is feasible.

PURE AND IMPURE PUBLIC GOODS

The concept of pure public good is often criticized by many who point out that such goods are not in fact observable in the real world. They argue that goods which perfectly satisfy non-rivalness and non-excludability are not easy to come across. For example, if the government provides law and order or medical care, the use of law courts or medical care by some individuals subtracts the consumption of others if they need to wait. As another example, we may take defence. If armies are mostly deployed in the northern borders, it may not result in the same amount of protection to people in the south.

There are many hybrid goods that possess some features of both public and private goods. These goods are called impure public goods and are partially rivalrous or congestible. Because of the possibility of congestion, the benefit that an individual gets from an impure public good depends on the number of users. Consumption of these goods by another person reduces, but does not eliminate, the benefits that other people receive from their consumption of the same good. For example, open-access Wi-Fi networks become crowded when more people access it. Impure public goods also differ from pure public goods in that they are often excludable.

An example of an impure public good would be cable television. It is non-rivalrous because the use of cable television by other individuals will in no way reduce your enjoyment of it. The good is excludable since the cable TV service providers can refuse connection if you do not pay for set top box and recharge it regularly..

We have seen above that impure public goods only partially satisfy the two public good characteristics of non-rivalry in consumption and non-excludability. The possibility of exclusion from the use of an impure public good has two implications.

1. Since free riding can be eliminated, the impure public good may be provided either by the market or by the government at a price or fee. If the consumption of a good can be excluded, then, the market would provide a price mechanism for it.

2. The provider of an impure public good may be able to control the degree of congestion either by regulating the number of people who may use it, or the frequency with which it may be used or both.

Two broad classes of goods have been included in the studies related to impure public goods

1. Club goods; first studied by Buchanan
2. Variable use public goods; first analyzed by Oakland and Sandmo

Examples of club goods are: facilities such as swimming pools, fitness centres etc. These goods are replicable and, therefore, individuals who are excluded from one facility may get similar services from an equivalent provider.

Variable use public goods include facilities such as roads, bridges etc. Once they are provided, everybody can use it. They can be excludable or non-excludable. If they are excludable, some people can be discouraged from using it frequently by making them pay for its consumption. In doing so, the frequency of usage of the public good can be controlled. Since they are not replicable, the facility should be accessible to all potential users. Why should we exclude the enjoyment of roads, bridges etc of some people? The reason is the possibility of congestion due to large number of vehicles and the potential reduction of benefit to the users.

QUASI-PUBLIC GOODS (MIXED GOODS)

This second approach to classification of impure public goods focuses on the mix of services that arise from the provision of the good. For example, if one gets inoculated against measles, it confers not only a private benefit to the individual, but also an external benefit because it reduces the chances getting infected of other persons who are in contact with him. You can observe here that the external effect associated with the consumption of a private good may have the characteristics of a public good.

Similarly, education will improve the individual's earning potential and at the same time, it may facilitate basic research creating non-rival, non-excludable knowledge and information which are public goods. Other examples of benefits to the society through education are improvement in decision making behaviour, provision of a screening device for the labour market to determine the quality of labour and better cultural environment and heritage for future generations. For example, other things remaining the same, the students pursuing the chartered accountancy programme will have a demand curve for the programme at various prices. This reflects the private benefits which the students believe they would enjoy as a result of this education. These may be viewed as 'private return' on education and they depend in part on the income differential that students expect during their working life as a result of chartered accountancy education. However, there are likely other benefits such as, the possible addition which you may make to accounting knowledge and practices, the consultancy services you give to others, the policy recommendations that you may be able to put forth for a better tax or budgeting system etc. to mention a few. These have the characteristics of public good as everyone in the society can consume them without reducing the amount available for consumption by others. Obviously, your demand curve for the CA programme did not incorporate all these external effects.

The quasi-Public goods or services, also called a near public good (for e.g. education, health services) possess nearly all of the qualities of the private goods and some of the benefits of public good. It is easy to keep people away from them by charging a price or fee. However, it is undesirable to keep people away from such goods because the society would be better off if more people consume them.

This particular characteristic namely, the combination of virtually infinite benefits and the ability to charge a price results in some quasi-public goods being sold through markets and others being provided by government. As such, people argue that these should not be left to the market alone. Markets for the quasi-public goods are considered to be incomplete markets and their lack of provision by free markets would be considered as inefficiency and market failure.

COMMON ACCESS RESOURCES

Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others. This rival nature of common resources is what distinguishes them from pure public goods, which exhibit both non-excludability and non-rivalry in consumption. They are generally available free of charge. Some important natural resources fall into this category.

Examples of common access resources are fisheries, forests, backwaters, common pastures, rivers, sea, backwaters biodiversity etc. The earth's atmosphere is perhaps the best example. Emissions of carbon dioxide and other greenhouse gases have led to the depletion of the ozone layer endangering environmental sustainability. Although nations are aware of the fact that reduced global warming would benefit everyone, they have an incentive to free ride, with the result that nothing positive is likely to be done to correct the problem.

Since price mechanism does not apply to common resources, producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation. This creates threat to the sustainability of these resources and, therefore, the availability of common access resources for future generations.

TRADEGY OF THE COMMONS

The problem of the 'tragedy of the commons' was first described and analysed by Garrett Hardin in his article 'The Tragedy of the Commons' (1968). Economists use the term to describe the problem which occurs when rivalrous but non excludable goods are overused to the disadvantage of the entire world. The term "commons" is derived from the traditional English legal term of "common land" where farmers/peasants would graze their livestock, hunt and collect wild plants and other produce. Everyone has access to a commonly held pasture; there are no rules about sustainable numbers for grazing. The outcome of the individual rational economic decisions of cattle owners was market failure, because these actions resulted in degradation, depletion or even destruction of the resource leading to welfare loss for the entire society.

GLOBAL PUBLIC GOODS

Global public goods are those public goods with benefits /costs that potentially extend to everyone in the world. These goods have widespread impact on different countries and regions, population groups and generations throughout the entire globe. Global Public goods may be:

- final public goods which are 'outcomes' such as ozone layer preservation or climate change prevention, or
- Intermediate public goods, which contribute to the provision of final public goods. e.g. International health regulations

The World Bank identifies five areas of global public goods which it seeks to address: namely,

- the environmental commons (including the prevention of climate change and biodiversity),
- communicable diseases (including HIV/AIDS, tuberculosis, malaria, and avian influenza),
- international trade,
- international financial architecture, and
- global knowledge for development.

The distinctive characteristic of global public goods is that there is no mechanism (either market or government) to ensure an efficient outcome.

THE FREE-RIDER PROBLEM

A free rider is a person who benefits from something without expending effort or paying for it. In other words, free riders are those who utilize goods without paying for their use. Example is Wikipedia, a free encyclopedia which faces a free rider problem. Hundreds of millions of people use Wikipedia every month but only a small part of users pay to use it. A large majority of Wikipedia users do not pay to use the site but are able to benefit from the information provided by the website. The free-rider problem occurs when everyone enjoys the benefits of a good without paying for it. Since private goods are excludable, free-riding mostly occurs in the case of public goods. The free-rider problem leads to under- provision of a good or service and thus causes market failure.

As seen above, public goods provide a very important example of market failure in which the self-interested behaviour of individuals does not produce efficient results. The absence of excludability in the case of public goods and the tendency of people to act in their own self-interest will lead to the problem of free-riding. If individuals cannot be excluded from the benefit of a public good, then they are not likely to express the value of the benefits which they receive as an offer to pay. In other words, they will not express to buy a particular quantity at a price. Briefly put, there is no incentive for people to pay for the good because they can consume it without paying for it.

The problem occurs because of the failure of individuals to reveal their real or true preferences for the public good through their willingness to pay. On account of the free- rider problem, there is no meaningful demand curve for public goods. If individuals make no offer to pay for public goods, there is a market failure in the case of these goods and the profit-maximizing firms will not produce them.

There is an important implication for the behaviour of free-riding. If every individual plays the same strategy of free-riding, the strategy will fail because nobody is willing to pay and therefore, nothing will be provided by the market. Then, a free ride for any one becomes impossible.

In fact, the public goods are valuable for people. If there is no free-rider problem, people would be willing to pay for them and they will be produced by the market. As such, if the free-rider problem cannot be solved, the following two outcomes are possible:

1. No public good will be provided in private markets
2. Private markets will seriously under produce public goods even though these goods provide valuable service to the society.

INCOMPLETE INFORMATION

Complete information is an important element of competitive market. Perfect information implies that both buyers and sellers have complete information about anything that may influence their decision making. However, this assumption is not fully satisfied in real markets due to the following reasons.

- Often, the nature of products and services tends to be highly complex e.g. cardiac surgery, financial products (such as pension products, mutual funds etc).
- In many cases consumers are unable to quickly / cheaply find sufficient information on the best prices as well as quality for different products. Sometimes they misunderstand the true costs or benefits of a product or are uncertain about the true costs and benefits.
- People are ignorant or not aware of many matters in the market. Generally they have inaccurate or incomplete data and consequently make potentially 'wrong' choices / decisions.

Information failure is widespread in numerous market exchanges. When this happens misallocation of scarce resources takes place and equilibrium price and quantity is not established through price mechanism. This results in market failure.

ASYMMETRIC INFORMATION

Asymmetric information occurs when there is an imbalance in information between the buyer and the seller i.e. when the buyer knows more than the seller or the seller knows more than the buyer. This can distort choices. For example, the landlords know more about their properties than tenants, a borrower knows more about their ability to repay a loan than the lender, a used-car seller knows more about vehicle quality than a buyer, health insurance buyers know more about the state of health than the insurance companies and some traders may possess insider information in financial markets. These are situations in which one party to a transaction knows a material fact that the other party does not. This phenomenon, which is sometimes referred to as the 'lemons problem', is an important source of market failure.

ADVERSE SELECTION

Asymmetric information generates adverse selection which results from hidden attributes that can distort the usual market process and affect a transaction before it occurs. Adverse selection generally refers to any situation in which one party to a contract or negotiation, such as a seller, possesses information relevant to the contract or negotiation that the corresponding party, such as a buyer, does not have; this asymmetric information leads the party lacking relevant knowledge to make suboptimal decisions and suffer adverse effects. In such a situation, asymmetric information about quality eliminates high-quality goods from a market. Economic agents end up either selecting a sub-standard product or leaving the market altogether. It can also lead to missing markets.

For example, in the insurance market, if the health insurance companies could costlessly identify the health risks of buyers, then there is no asymmetric information and therefore, insurers could offer low premiums to the low-risk buyers and high premiums to the high-risk buyers. As a matter of fact, compared to insurance buyers, insurers know less about the health conditions of buyers and are therefore unable to differentiate between high-risk and low-risk persons. Due to the tendency of people with higher health risks to obtain insurance coverage to a greater extent than persons with lesser risk, the proportion of unhealthy people in the pool of insured people increases. In such situations, an insurance company extends insurance coverage to an applicant whose actual risk is substantially higher than the risk known by the insurance company. By not revealing the actual state of health, an applicant is leading the insurance company to make decisions on coverage or premium costs that are adverse to the insurance company's management of financial risk. This forces the price of insurance to rise, so that more healthy people, aware of their low risks, choose not to be insured. This further increases the proportion of unhealthy people among the insured, thus raising the price of insurance up more. The process continues until most people who want to buy insurance are unhealthy. At that point, insurance becomes very expensive, or—in the extreme—insurance companies stop selling the insurance leading to missing markets. If the sellers wish to do business profitably, they may have to incur considerable costs in terms of time and money for identifying the extent of risk for different buyers which in turn would increase insurance premium.

When dealing with problems of asymmetric information, the most frequently cited and studied example in Economics is the one developed by George Akerlof in relation to the used car market, which distinguishes cars classified as good from those defined as “lemons” (poor quality vehicles). The owner of a car knows much more about its quality than anyone else. While placing it for sale, he may not disclose all that he knows about the mechanical defects of the vehicle. Based on the probability that the car on sale is a ‘lemon’, the buyers’ willingness to pay for any particular car will be based on the ‘average quality’ of used cars. Not knowing the honesty of the seller means, the price offered for the vehicle is likely to be less than that of a good car, to account for this risk. However, anyone who sells a ‘lemon’ (an unusually poor car) stands to gain. If buyers were aware as to which car is good, they would pay the price they feel reasonable for a good car. Since the price offered in the market is lower than the acceptable one, good car sellers will not be inclined to sell. The market becomes flooded with ‘lemons’ and eventually the market may offer nothing but ‘lemons’. The good-quality cars disappear because they are kept by their owners or sold only to friends. The result is market distortion with lower prices and lower average quality of cars. With asymmetric information, just as low quality high risk buyers drive out high quality low risk buyers of insurance, low-quality cars can drive high-quality cars out of the market.

MORAL HAZARD

Moral hazard arises whenever there is an externality (i.e., whenever an economic agent can shift some of its costs to others). It is about actions, made after making a market exchange, which may have adverse impact on the less-informed person. In other words, it is about the opportunism characterized by an informed person's taking advantage of a less-informed person through an unobserved action. It arises from lack of information about someone's future behaviour. It occurs when one party to an agreement knows that he need not bear the consequences of his bad behaviour or poor decision making and that the consequence, if any, would be borne by the other party. Therefore, he engages in risky behaviour or fails to act in good faith or acts in a different way than if he had to bear those consequences himself.

In the insurance market, moral hazard refers to a situation that increases the probability of occurrence of a loss or a longer than normal loss because of a change in the insurance policy holders' behaviour after that issuance of policy. For example, a driver who has a comprehensive insurance tends to exhibit greater taste for risk-taking in getting to his destination quickly and hence his interests contradict with those of the insurer. The more of one's costs that are covered by the insurance company, the less he cares whether the doctor charges excessive fees or uses inefficient and costly procedures as part of his health care. This causes insurance premiums to rise for everyone, driving many potential customers out of the market. In short, when someone is protected from paying the full costs of their harmful actions, they tend to act irresponsibly, making the harmful consequences more likely.

If the company could costlessly monitor the behaviour of the insured, it can charge higher fees for those who make more claims. The problem lies in the fact that the insurance company cannot observe people's actions post-sale and therefore cannot judge without costly monitoring whether occurrence of an event is genuine or the outcome of lack of effort on the part of the insured. Therefore the expected outflow is higher and the insurance companies may be forced to increase premiums for everyone or may even refuse to sell insurance at all in which case it is a case of missing markets.

Asymmetric information, adverse selection and moral hazard affect the ability of markets to efficiently allocate resources and therefore lead to market failure because the party with better information has a competitive advantage.

CONCLUSION

Markets, do not always lead to efficiency. When there is a market failure, the market outcomes may be inefficient and government intervention can improve society's welfare. Government can ensure economic efficiency by providing the necessary legal and regulatory system that facilitates efficiency and /or it can intervene to correct specific market failures. The role of the government in combating market failures will be discussed in the next unit.

SUMMARY

- Market failure is a situation in which the free market fails to allocate resources efficiently in the sense that there is either overproduction or underproduction of particular goods and services leading to less than optimal market outcomes.

- The demand-side market failures are said to occur when demand curves do not take into account the full willingness of consumers to pay for a product. The supply-side market failures happen when supply curves do not incorporate the full cost of producing the product.
- The price system and markets work efficiently only if market prices convey information to both producers and consumers.
- There are four major reasons for market failure. They are: market power, externalities, public goods, and incomplete information.
- Excessive market power causes the single producer or small number of producers to produce and sell less output than would be produced and charge a higher price in a competitive market.
- Externalities also referred to as 'spillover effects', 'neighbourhood effects' 'third-party effects', or 'side-effects', occur when the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price.
- Externalities cause market inefficiencies because they hinder the ability of market prices to convey accurate information about how much to produce and how much to buy. Since externalities are not reflected in market prices, they can be a source of economic inefficiency.
- Externalities are initiated and experienced, not through the operation of the price system, but outside the market and therefore, are external to the market.
- Externalities may be unidirectional or reciprocal. Externalities can be positive or negative. Negative externalities occur when the action of one party imposes costs on another party. Positive externalities occur when the action of one party confers benefits on another party.
- The four possible types of externalities are: Negative externality initiated in production which imposes an external cost on others. Positive production externality, less commonly seen, initiated in production that confers external benefits on others. Negative consumption externalities initiated in consumption which produce external costs on others. Positive consumption externality initiated in consumption that confers external benefits on others. Each of the above may be received by another in consumption or in production. The firm or the consumer as the case may be, however, has no incentive to account for the external costs that it imposes on consumers
- Private cost is the cost faced by the producer or consumer directly involved in a transaction and includes direct cost of labour, materials, energy and other indirect overheads and does not incorporate externalities.
- Social cost is the entire cost which the society bears. $\text{Social Cost} = \text{Private Cost} + \text{External Cost}$.
- When negative production externalities exist, social costs exceed private cost. If producers do not take into account the externalities, there will be over-production and market failure and unwarranted social consequences.

- When firms do not have to worry about negative externalities associated with their production, the result is excess production and unnecessary social costs
- A public good (also referred to as a collective consumption good or a social good) is defined as one which all individuals enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good.
- Private goods are 'rivalrous' 'and excludable' and less likely to have the free rider problem. Additional resource costs are involved for providing to another individual.
- Public goods consumption is indivisible, collective, nonrival, non-excludable and vulnerable to externalities and free rider problems.
- Public goods do not conform to the settings of market exchange and left to the market, they will not be produced at all or will be under produced. This is because the price becomes zero.
- A pure public good is non-rivalrous and non-excludable. Impure public goods are partially rivalrous or congestible. Because of the possibility of congestion, the benefit that an individual gets from an impure public good depends on the number of users.
- The provider of an impure public good may be able to control the degree of congestion either by regulating the number of people who may use it, or the frequency with which it may be used or both.
- The quasi-public goods or services, also called a near public good (for e.g. education, health services) possess nearly all of the qualities of the private goods and some of the benefits of public good. They exhibit market failure as incomplete markets.
- Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others.
- Since price mechanism does not apply to 'common resources', producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation.
- Economists use the term 'tragedy of the commons' to describe the problem which occurs when rivalrous but non excludable goods are overused to the disadvantage of the entire universe.
- The incentive to let other people pay for a good or service, the benefits of which are enjoyed by an individual is known as the free rider problem.
- If every individual plays the same strategy of free riding, the strategy will fail because nobody is willing to pay and therefore nothing will be provided by the market.

- Complete information is an essential element of competitive market. But it is not fully satisfied in real world markets for goods or services due to highly complex nature of products.
- Asymmetric information occurs when there is an imbalance in information between buyer and seller i.e. when the buyer knows more than the seller or the seller knows more than the buyer. This can distort choices. With asymmetric information, low-quality goods can drive high-quality goods out of the market.
- Adverse selection is a situation in which asymmetric information about quality eliminates high-quality goods from a market. Buyers expect hidden problems in items offered for sale, leading to low prices and the best items being kept off the market.
- Moral hazard is opportunism characterized by an informed person's taking advantage of a less-informed person through an unobserved action.
- Asymmetric information, adverse selection and moral hazard affect the ability of markets to efficiently allocate resources and therefore, lead to market failure because the party with better information has a competitive advantage. Due to this the market collapses as transactions do not take place or very few transactions occur.

UNIT III MONETARY POLICY

INTRODUCTION

As citizens of a free nation, we have many dreams about what ought to be the state of affairs in our economy. We value stable prices and low rates of inflation. We share a quest for well-being through high levels of growth which ensure jobs and prosperity and we work towards it. Unfortunately, in reality, we live in a crisis prone economy with nightmares of financial downturns, of being laid-off or being battered by financial crises. We observe that the Reserve Bank of India is occasionally manipulating policy rates for maneuvering liquidity conditions with reasons thereof explicitly notified. In fact, we have only a limited understanding of the monetary phenomena which could strengthen or paralyse the domestic economy. The discussion that follows is an attempt to throw light on the well-acknowledged monetary measures undertaken by governments to fight economic instability

MONETARY POLICY DEFINED

Monetary policy refers to the use of monetary policy instruments which are at the disposal of the central bank to regulate the availability, cost and use of money and credit to promote economic growth, price stability, optimum levels of output and employment, balance of payments equilibrium, stable currency or any other goal of government's economic policy. In other words, monetary policy is essentially a programme of action undertaken by the monetary authorities, normally the central bank, to control and regulate the demand for and supply of money with the public and the flow of credit with a view to achieving predetermined macroeconomic goals.

Monetary policy encompasses all actions of the central bank which are aimed at directly controlling the money supply and indirectly at regulating the demand for money. Monetary policy is in the nature of 'demand-side' macroeconomic policy and works by stimulating or discouraging investment and consumption spending on goods and services. It is no surprise that monetary policy is regarded as an indispensable policy instrument in an economy.

THE MONETARY POLICY FRAMEWORK

The central bank, in its execution of monetary policy, functions within an articulated monetary policy framework which has three basic components, viz.

- i. the objectives of monetary policy.
- ii. the analytics of monetary policy which focus on the transmission mechanisms, and
- iii. The operating procedure which focuses on the operating targets and instruments.

THE OBJECTIVES OF MONETARY POLICY

The objectives set for monetary policy are important because they provide explicit guidance to policy makers. Monetary policy of a country is in fact a reflection of its economic policy and therefore, the objectives of monetary policy generally coincide with the overall objectives of economic policy.

There are significant differences among different countries in respect of the selection of objectives, implementation procedures and tools of monetary policy either due to differences in the underlying economies or due to differences in the financial systems and in the infrastructure of financial markets. Coverage of aspects related to monetary policies of different countries would be beyond the scope of this unit. Therefore, the following discussions relate to the monetary policy situations in the context of Indian economy.

In the pre-Keynesian period, monetary policy, with its conventional objective of establishment and maintenance of stability in prices, was the single well-acknowledged instrument of macroeconomic policy. The Great Depression in 1930s and the associated economic crises marked a turning point resulting in a major shift in the objective of governments' economic policy in favour of maintenance of full employment, more generally described as economic stability. The most commonly pursued objectives of monetary policy of the central banks across the world are maintenance of price stability (or controlling inflation) and achievement of high level of economy's growth and maintenance of full employment

The Reserve Bank of India Act, 1934, in its preamble sets out the objectives of the Bank as 'to regulate the issue of bank notes and the keeping of reserves with a view to securing monetary stability in India and generally to operate the currency and credit system of the country to its advantage'. It is to be noted that though price stability as an objective is not explicitly spelt out, the monetary policy in India has evolved towards maintaining price stability and ensuring adequate flow of credit to the productive sectors of the economy. Price stability, as we know, is a necessary precondition for sustainable growth. Fundamentally, the primary objective of monetary policy has been maintenance of a judicious balance between price stability and economic growth.

Multiple objectives, all of which are equally desirable, such as rapid economic growth, debt management, moderate long-term interest rates, exchange rate stability and external balance of payments equilibrium were incorporated as objectives of monetary policy by policy makers in later years. The need for simultaneous achievement of several objectives brings in the possibility of conflict among the different monetary policy objectives. For example, there is often a conflict between the objectives of holding down both inflation and unemployment; a policy targeted at controlling inflation is very likely to generate unemployment. As such, based on the set national priorities, the monetary policymakers have to exercise appropriate trade-offs to balance the conflicting objectives.

Given the development needs of developing countries, the monetary policy of such countries also incorporate explicit objectives such as:

- i. maintenance the economic growth,
- ii. ensuring an adequate flow of credit to the productive sectors,
- iii. sustaining - a moderate structure of interest rates to encourage investments, and
- iv. creation of an efficient market for government securities.

Considerations of financial and exchange rate stability have assumed greater importance in India recently on account of increasing openness of the economy and the progressive economic and financial sector reforms.

Analytics of Monetary Policy

As we are aware, just as fiscal policy, monetary policy is intended to influence macro- economic variables such as aggregate demand, quantity of money and credit , interest rates etc , so as to influence overall economic performance. The process or channels through which the change of monetary aggregates affects the level of product and prices is known as 'monetary transmission mechanism'. It describes how policy-induced changes in the nominal money stock or in the short-term nominal interest rates impact real variables such as aggregate output and employment.

Generally central banks use the short-term interest rate as the policy instrument. Therefore, monetary policy transmission is the process through which a change in the policy rate gets transmitted primarily to the short-term money market rate and subsequently to the entire range of interest rates namely, banks' deposit and lending rates and interest rates in bond markets. These interest rate changes affect macro economic variables such as consumption, investment and exports which in turn influence aggregate demand, output and employment.

Although we know that monetary policy does influence output and inflation, we are not certain about how exactly it does so, because the effects of such policy are visible often after a time lag which is not completely predictable

There are mainly five different mechanisms through which monetary policy influences the price level and the national income. These are:

- a) the interest rate channel,
- b) the exchange rate channel,
- c) the quantum channel (e.g., relating to money supply and credit),

- d) the asset price channel i.e. via equity and real estate prices. and
- e) the expectations channel

We shall have a brief discussion on each of the above transmission mechanisms. According to the traditional Keynesian interest rate channel, a contractionary monetary policy-induced increase in interest rates increases the cost of capital and the real cost of borrowing for firms with the result that they cut back on their investment expenditures. Similarly, households facing higher real borrowing costs, cut back on their purchases of homes, automobiles, and all types of durable goods. A decline in aggregate demand results in a fall in aggregate output and employment. Conversely, an expansionary monetary policy induced decrease in interest rates will have the opposite effect through decreases in cost of capital for firms and cost of borrowing for households.

In open economies, additional real effects of a policy-induced change in the short-term interest rate come about through the exchange rate channel. Changes in monetary policy cause differences between domestic and foreign interest rates leading to capital flows (inflow or outflow) and exchange rate. Typically, the exchange rate channel works through expenditure switching between domestic and foreign goods. Appreciation of the domestic currency makes domestically produced goods more expensive compared to foreign-produced goods. This causes net exports to fall; correspondingly domestic output and employment also fall.

Two distinct credit channels the bank lending channel and the balance sheet channel-also allow the effects of monetary policy actions to spread through the real economy. Credit channel operates by altering access of firms and households to bank credit. Most businesses and people mostly depend on bank for borrowing money. “An open market operation” that leads first to a contraction in the supply of bank reserves and then to a contraction in bank credit requires banks to cut back on their lending. This, in turn makes the firms that are especially dependent on banks loans to cut back on their investment spending. Thus, there is decline in the aggregate output and employment following a monetary contraction.

Now we shall look into how the balance sheet channel works. Logically, as a firm’s cost of credit rises, the strength of its balance sheet deteriorates. A direct effect of monetary policy on the firm’s balance sheet comes through an increase in interest rates leading to an increase in the payments that the firm must make to repay its floating rate debts. An indirect effect occurs when the same increase in interest rates works to reduce the capitalized value of the firm’s long-lived assets. Hence, a policy-induced increase in the short-term interest rate not only acts immediately to depress spending through the traditional interest rate channel, it also acts, possibly with a time-lag, to raise each firm’s cost of capital through the balance sheet channel. These together aggravate the decline in output and employment.

The standard asset price channel suggests that asset prices respond to monetary policy changes and consequently affect output, employment and inflation. A policy-induced increase in the short-term nominal interest rates makes debt instruments more attractive than equities in the eyes of investors leading to a fall in equity prices. If stock prices fall after a monetary tightening, it leads to reduction in household financial wealth, leading to fall in consumption, output, and employment.

Finally, changes in monetary policy may have impact on people’s expectations about inflation and therefore on aggregate demand. This in turn affects employment and output in the economy.

The manner in which these different channels function in a given economy depends on:

- i. the stage of development of the economy, and
- ii. the underlying financial structure of the economy

OPERATING PROCEDURE AND INSTRUMENTS

The operating framework relates to all aspects of implementation of monetary policy. It primarily involves three major aspects, namely,

- i. choosing the operating targets,
 - ii. choosing the intermediate targets, and
 - iii. Choosing the policy instruments.
- The operating targets refer to the financial variables that can be controlled by the central bank to a large extent through the monetary policy instruments (reserve money and short-term money market interest rates or weighted average call rate (WACR)).
 - The intermediate targets (e.g. monetary aggregates and short-term and long-term interest rates) are variables which the central bank can hope to influence to a reasonable degree through the operating targets. The intermediate targets display a predictable and stable relationship with the goal variables (e.g. stability, growth etc.)
 - The monetary policy instruments are the various tools that a central bank can use to influence money market and credit conditions and pursue its monetary policy objectives. The day-to-day implementation of monetary policy by central banks through various instruments is referred to as 'operating procedures'. For example, liquidity management is the operating procedure of the Reserve Bank of India

For implementing monetary policy, a central bank can act directly, using its regulatory powers, or indirectly, using its influence on money market conditions as the issuer of reserve money (currency in circulation and deposit balances with the central bank).

In general, the direct instruments comprise of:

- a) The required cash reserve ratios and liquidity reserve ratios prescribed from time to time.
- b) directed credit which takes the form of prescribed targets for allocation of credit to preferred sectors (for e.g. Credit to priority sectors), and
- c) administered interest rates wherein the deposit and lending rates are prescribed by the central bank.

The indirect instruments mainly consist of:

- a) Repos
- b) Open market operations
- c) Standing facilities, and
- d) Market-based discount window.

We shall now discuss in detail how these instruments are put to use for meeting the stated objectives of monetary policy.

1. CASH RESERVE RATIO (CRR)

Cash Reserve Ratio (CRR) refers to the average daily balance that a bank is required to maintain with the Reserve Bank of India as a share of its total net demand and time liabilities (NDTL). This percentage will be notified from time to time by the Reserve Bank. The RBI may set the ratio in keeping with the broad objective of maintaining monetary stability in the economy. This requirement applies uniformly to all scheduled banks in the country irrespective of its size or financial position. Non-Bank Financial Institution (NBFIs) are outside the purview of this reserve requirement.

The Reserve Bank does not pay any interest on the CRR balances maintained by the scheduled commercial banks (SCBs) with effect from the fortnight beginning March 31, 2007; however, failure of a bank to meet its required reserve requirements would attract penalty in the form of penal interest charged by the RBI. CRR has, in recent years, assumed significance as one of the important quantitative tools aiding in liquidity management. Higher the CRR with the RBI, lower will be the liquidity in the system and vice versa. During slowdown in the economy, the RBI reduces the CRR in order to enable the banks to expand credit and increases the supply of money available in the economy. In order to contain credit expansion during period's high inflation, the RBI increases the CRR. The cash reserve ratio as on 20 th September, 2020 was 4.00 percent

2. STATUTORY LIQUIDITY RATIO (SLR)

The Statutory Liquidity Ratio (SLR) is a prudential measure. As per the Banking Regulations Act 1949, all scheduled commercial banks in India are required to maintain a stipulated percentage of their total Demand and Time Liabilities (DTL) / Net DTL (NDTL) in one of the following forms:

- i. Cash
- ii. Gold, or
- iii. Investments in un-encumbered Instruments that include:
 - a) Treasury-bills of the Government of India.
 - b) Dated securities including those issued by the Government of India from time to time under the market borrowings programme and the Market Stabilization Scheme (MSS).
 - c) State Development Loans (SDLs) issued by State Governments under their market borrowings programme.
 - d) Other instruments as notified by the RBI. These include mainly the securities issued by PSEs.

While CRR has to be maintained by banks as cash with the RBI, the SLR requires holding of assets in one of the above three categories by the bank itself. The banks which fail to meet its SLR obligations are liable to be imposed penalty in the form of a penal interest payable to RBI. As on 20th September, 2020, the SLR was 18 per cent.

The SLR is also a powerful tool for controlling liquidity in the domestic market by means of manipulating bank credit. Changes in the SLR chiefly influence the availability of resources in the banking system for lending. A rise in the SLR which is resorted to during periods of high

liquidity, tends to lock up a rising fraction of a bank's assets in the form of eligible instruments, and this reduces the credit creation capacity of banks. A reduction in the SLR during periods of economic downturn has the opposite effect. The SLR requirement also facilitates a captive market for government securities.

3. LIQUIDITY ADJUSTMENT FACILITY (LAF)

A central bank is a 'bankers' bank.' It provides liquidity to banks when the latter face shortage of liquidity. This facility is provided by the Central Bank through its discount window. The scheduled commercial banks can borrow from the discount window against the collateral of securities like commercial bills, government securities, treasury bills, or other eligible papers. This type of support earlier took the form of refinance of loans given by commercial banks to various sectors (e.g. exports, agriculture etc). By varying the terms and conditions of refinance, the RBI could employ the sector-specific refinance facilities as an instrument of credit policy to encourage /discourage lending to particular sectors. In line with the financial sector reforms, the system of sector-specific refinance schemes (except export credit refinance scheme) was withdrawn. From June 2000, the RBI has introduced Liquidity Adjustment Facility (LAF).

The Liquidity Adjustment Facility (LAF) enables the RBI to module short-term liquidity under varied financial market conditions to ensure stable conditions in the overnight (call) money market. It is extended by the Reserve Bank of India to the scheduled commercial banks (excluding RRBs) and primary dealers to avail of liquidity in case of requirement (or park excess funds with the RBI in case of excess liquidity) on an overnight basis against the collateral of government securities including state government securities. The LAF consists of overnight as well as term repo auctions. The aim of term repo is to help develop the inter-bank term money market. This move is expected to set market based benchmarks for pricing of loans and deposits, and hence improve transmission of monetary policy.

The introduction of LAF is an important landmark since it triggered a rapid transformation in the monetary policy operating environment in India. As a key element in the operating framework of the RBI, its objective is to assist banks to adjust their day to day mismatches in liquidity. Currently, the RBI provides financial accommodation to the commercial banks through repos/reverse repos under the Liquidity Adjustment Facility (LAF).

Repurchase Options or in short 'Repo', is defined as 'an instrument for borrowing funds by selling securities with an agreement to repurchase the securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed'. The repo rate is the (fixed) interest rate at which the Reserve Bank provides overnight liquidity to banks against the collateral of government and other approved securities under the liquidity adjustment facility (LAF). In other words, repo is a money market instrument, which enables collateralised short term borrowing and lending through sale/purchase operations in debt instruments.

The Repo transactions in India has two elements – in the first, the seller sells securities and receives cash while the purchaser buys securities and parts with cash. In the second, the

securities are repurchased by the original holder. The user pays to the counter party the amount originally received, plus the return on the money for the number of days for which the money was used, which is mutually agreed. All these transactions are reported on the electronic platform called the Negotiated Dealing System (NDS). The Clearing Corporate of India Ltd. (CCIL) has put in an anonymous online repo dealing system in India, with an anonymous order matching electronic platform, Repo or repurchase option is a collateralised lending, Repo operations thus inject liquidity into the system.

THE POLICY RATE *

You might have read in business dailies about the 'policy rate'. In India, the fixed repo rate quoted for sovereign securities in the overnight segment of Liquidity Adjustment Facility (LAF) is considered as the policy rate. (It may be noted that India has many other repo rates in operation). The RBI uses the single independent 'policy rate' which is the repo rate (in the LAF window) for balancing liquidity. The Policy rate is in fact, the key lending rate of the central bank in a country. A change in the policy rate gets transmitted through the money market to the entire the financial system and alters all other short term interest rates in the economic thereby influencing aggregate demand- a key determinant of the level of inflation and economic growth. If the RBI wants to make it more expensive for banks to borrow money, it increases the repo rate. Similarly, if it wants to make it cheaper for banks to borrow money, it reduces the repo rate. In other words, an increase in the repo rate will lead to liquidity tightening and vice-versa, other things remaining constant.

The Monetary Policy committee (MPC) at its meeting on August 4-6, 2020 decided to: has decided to reduce the policy repo rate under the liquidity adjustment facility (LAF) by 40 bps to 4.0 per cent from 4.40 per cent with immediate effect; accordingly, the marginal standing facility (MSF) rate and the Bank Rate stand reduced to 4.25 per cent from 4.65 per cent; and the reverse repo rate under the LAF stands reduced to 3.35 per cent from 3.75 per cent.

*Learners are requested to refer the RBI website (www.rbi.org.in) for up-to-date information on the prevailing policy rates.

'Reverse Repo Rate: The (fixed) interest rate at which the Reserve Bank absorbs liquidity, on an overnight basis, from banks against the collateral of eligible government securities under the LAF. It is a monetary policy instrument and in effect it absorbs the liquidity from the system. This operation takes place when the RBI borrows money from commercial banks by selling them securities (which RBI permits) with an agreement to repurchase the securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed. The interest rate paid by the RBI for such borrowings is called the "Reverse Repo Rate". Thus, reverse repo rate is the rate of interest paid by the RBI on its borrowings from commercial banks.

The 'repo rate' and the reverse repo rate' are changed only through the announcements made during the Monetary Policy Statements of the RBI. From May, 2011 onwards, the reverse repo rate is not announced separately, it will be linked to repo rate. The Reserve Bank also conducts variable interest rate reverse repo auctions, as necessitated under the market conditions.

There are three types of repo markets operating in India namely:

- i. Repo on sovereign securities
- ii. Repo on corporate debt securities, and
- iii. Other Repos

In addition to the existing overnight LAF (repo and reverse repo) and MSF, from October 2013, the Reserve Bank has introduced 'Term Repo' (repos of duration more than a day) under the Liquidity Adjustment Facility (LAF) for 14 days and 7 days tenors. LAF is conducted at a fixed time on a daily basis on all working days in Mumbai (excluding Saturdays).

4. MARGINAL STANDING FACILITY (MSF)

The Reserve Bank of India, being a bankers' bank, acts as a lender of last resort. The Marginal Standing Facility (MSF) announced by the Reserve Bank of India (RBI) in its Monetary Policy, 2011-12 refers to the facility under which scheduled commercial banks can borrow additional amount of overnight money from the central bank over and above what is available to them through the LAF window by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit (a fixed per cent of their net demand and time liabilities deposits (NDTL) liable to change every year) at a penal rate of interest. This provides a safety valve against unexpected liquidity shocks to the banking system. The scheme has been introduced by RBI with the main aim of reducing volatility in the overnight lending rates in the inter-bank market and to enable smooth monetary transmission in the financial system.

Banks can borrow through MSF on all working days except Saturdays, between 7.00 pm and 7.30 pm, in Mumbai. The minimum amount which can be accessed through MSF is ₹1 crore and more will be available in multiples of ₹1 crore.

The MSF would be the last resort for banks once they exhaust all borrowing options including the liquidity adjustment facility on which the rates are lower compared to the MSF. The MSF rate being a penal rate automatically gets adjusted to a fixed per cent above the repo rate. MSF is at present aligned with the Bank rate. Practically, MSF represents the upper band of the interest corridor with repo rate at the middle and reverse repo at the lower band. In fact, the MSF rate and reverse repo rate determine the corridor for the daily movement in the weighted average call money rate.

5. MARKET STABILISATION SCHEME (MSS)

This instrument for monetary management was introduced in 2004 following a MoU between the Reserve Bank of India (RBI) and the Government of India (GoI) with the primary aim of aiding the sterilization operations of the RBI. (Sterilization is the process by which the monetary authority sterilizes the effects of significant foreign capital inflows on domestic liquidity by off-loading parts of the stock of government securities held by it). Surplus liquidity of a more enduring nature arising from large capital inflows is absorbed through sale of short-dated government securities and treasury bills. Under this scheme, the Government of India borrows from the RBI (such borrowing being additional to its normal borrowings requirements) and

issues treasury-bills/dated securities for absorbing excess liquidity from the market arising from large capital inflows.

BANK RATE

Under Section 49 of the Reserve Bank of India Act, 1934, the Bank Rate has been defined as 'the standard rate at which the Reserve Bank is prepared to buy or re-discount bills of exchange or other commercial paper eligible for purchase under the Act'. The bank rate once used to be the policy rate in India i.e. the key interest rate based on which all other short term interest rates moved.

Discounting/rediscounting of bills of exchange by the Reserve Bank has been discontinued on introduction of Liquidity Adjustment Facility (LAF). As a result, the bank rate has become dormant as an instrument of monetary management.

The bank rate has been aligned to the Marginal Standing Facility (MSF) rate and, therefore, as and when the MSF rate changes alongside policy repo rate changes, the bank rate also changes automatically. Briefly put, MSF assumed the role of bank rate and currently the bank rate is purely a signalling rate and most interest rates are delinked from the bank rate. Now, bank rate is used only for calculating penalty on default in the maintenance of Cash Reserve Ratio (CRR) and the Statutory Liquidity Ratio (SLR).

6. OPEN MARKET OPERATIONS

Open Market Operations (OMO) is a general term used for market operations conducted by the Reserve Bank of India by way of sale/ purchase of Government securities to/ from the market with an objective to adjust the rupee liquidity conditions in the market on a durable basis. When the RBI feels there is excess liquidity in the market, it resorts to sale of securities thereby sucking out the rupee liquidity. Similarly, when the liquidity conditions are tight, the RBI will buy securities from the market, thereby releasing liquidity into the market.

THE ORGANISATIONAL STRUCTURE FOR MONETARY POLICY DECISIONS

We have discussed above the instruments of monetary policy. An understanding of the organisational structure for monetary policy decisions is necessary to understand the way monetary policy is conducted in India.

THE MONETARY POLICY FRAMEWORK AGREEMENT

The Reserve Bank of India (RBI) Act, 1934 was amended on June 27, 2016, for giving a statutory backing to the Monetary Policy Framework Agreement (MPFA) and for setting up a Monetary Policy Committee (MPC). The Monetary Policy Framework Agreement is an agreement reached between the Government of India and the Reserve Bank of India (RBI) on the maximum tolerable inflation rate that the RBI should target to achieve price stability. The amended RBI Act (2016) provides for a statutory basis for the implementation of the 'flexible inflation targeting framework'.

Announcement of an official target range for inflation is known as inflation targeting. The Expert Committee under Urijit Patel to revise the monetary policy framework, in its report in January, 2014

suggested that RBI abandon the 'multiple indicator' approach and make inflation targeting the primary objective of its monetary policy. The inflation target is to be set by the Government of India, in consultation with the Reserve Bank, once in every five years. Accordingly,

- The Central Government has notified 4 per cent Consumer Price Index (CPI) inflation as the target for the period from August 5, 2016 to March 31, 2021 with the upper tolerance limit of 6 per cent and the lower tolerance limit of 2 per cent.
- The RBI is mandated to publish a Monetary Policy Report every six months, explaining the sources of inflation and the forecasts of inflation for the coming period of six to eighteen months.
- The following factors are notified by the central government as constituting a failure to achieve the inflation target:
 - a) The average inflation is more than the upper tolerance level of the inflation target for any three consecutive quarters; or
 - b) The average inflation is less than the lower tolerance level for any three consecutive quarters.

The choice of CPI was made because it closely reflects cost of living and has larger influence on inflation expectations compared to other anchors. With this step, India is following countries such as the New Zealand, the USA, the UK, European Union, and Brazil. In recent times many countries are moving away from this approach and are targeting nominal GDP growth.

THE MONETARY POLICY COMMITTEE (MPC)

An important landmark in India's monetary history is the constitution of an empowered six-member Monetary Policy Committee (MPC) in September, 2016 consisting of the RBI Governor (Chairperson), the RBI Deputy Governor in charge of monetary policy, one official nominated by the RBI Board and the remaining three central government nominees representing the Government of India who are persons of ability, integrity and standing, having knowledge and experience in the field of Economics or banking or finance or monetary policy.

The Committee is required to meet at least four times a year and the decisions adopted by the MPC are published after conclusion of every meeting of the MPC. Based on the review of the macroeconomic and monetary developments in the economy, the MPC shall determine the policy rate required to achieve the inflation target. The fixing of the benchmark policy interest rate (repo rate) is made through debate and majority vote by this panel of experts.

With the introduction of the Monetary Policy Committee, the RBI will follow a system which is more consultative and participative similar to the one followed by many of the central banks in the world. The new system is intended to incorporate:

- diversity of views,
- specialized experience
- independence of opinion,
- representativeness, and
- accountability

The Reserve Bank's Monetary Policy Department (MPD) assists the MPC in formulating the monetary policy. The views of key stakeholders in the economy and analytical work of the Reserve Bank contribute to the process for arriving at the decision on the policy repo rate.

The Financial Markets Operations Department (FMOD) operationalises the monetary policy, mainly through day-to-day liquidity management operations.

The Financial Markets Committee (FMC) meets daily to review the liquidity conditions so as to ensure that the operating target of monetary policy (weighted average lending rate) is kept close to the policy repo rate.

Before the constitution of the MPC, a Technical Advisory Committee (TAC) on monetary policy with experts from Monetary Economics, Central Banking, Financial Markets and Public Finance advised the RBI on the standpoint of monetary policy. However, its role was only advisory in nature. With the formation of MPC, the TAC on Monetary Policy ceased to exist.

CONCLUSION

The theoretical exposition of monetary policy might appear uncomplicated. However, the choice of a monetary policy action is rather complicated in view of the surrounding uncertainties and the need for exercising complex judgment to balance growth and inflation concerns. Additional complexities arise in the case of an emerging market like India. There are many challenges which need to be addressed, such as rudimentary and non-competitive financial systems, lack of integrated money and interbank markets, external uncertainties and issues related to operational autonomy of the central bank. Explicit inflation targeting requires a good degree of operational autonomy for the central bank and a system in which there is a good coordination between fiscal and monetary authorities.

SUMMARY

- Monetary policy refers to the use of monetary policy instruments which are at the disposal of the central bank to regulate the availability, cost and use of money and credit so as to promote economic growth, price stability, optimum levels of output and employment, balance of payments equilibrium, stable currency or any other goal of government's economic policy.
- The monetary policy framework which has three basic components, viz. the objectives of monetary policy, the analytics of monetary policy which focus on the transmission mechanism, and the operating procedure which focuses on the operating targets and instruments.
- Though multiple objectives are pursued, the most commonly pursued objectives of monetary policy of the central banks across the world has become maintenance of price stability (or controlling inflation) and achievement of economic growth.
- The process or channels through which the evolution of monetary aggregates affects the level of production and price level is known as 'monetary transmission mechanism' i.e how they impact real variables such as aggregate output and employment.
- There are mainly four different mechanisms, namely, the interest rate channel, the exchange rate channel, the quantum channel, and the asset price channel.

- A contractionary monetary policy-induced increase in interest rates increases the cost of capital and the real cost of borrowing for firms and households who respond by cut back on their investment and consumption respectively.
- The exchange rate channel works through expenditure switching between domestic and foreign goods on account of appreciation / depreciation of the domestic currency with its impact on net exports and consequently on domestic output and employment.
- Two distinct credit channels- the bank lending channel and the balance sheet channel- operate by altering access of firm and household to bank credit and by the effect of monetary policy on the firm's balance sheet respectively.
- Asset prices generate important wealth effects that impact, through spending, output and employment.
- The operating framework of monetary policy relates to all aspects of implementation namely, choosing the operating target, choosing the intermediate target, and choosing the policy instruments.
- The day-to-day implementation of monetary policy by central banks through various instruments is referred to as 'operating procedures'.
- Monetary policy instruments are the various tools that a central bank can use to influence money market and credit conditions and pursue its monetary policy objectives. There are direct instruments and indirect instruments.
- The Cash Reserve Ratio (CRR) refers to the fraction of the total net demand and time liabilities (NDTL) of a scheduled commercial bank in India which it should maintain as cash deposit with the Reserve Bank irrespective of its size or financial position.
- The Statutory Liquidity Ratio (SLR) is what the scheduled commercial banks in India are required to maintain as a stipulated percentage of their total Demand and Time Liabilities (DTL) / Net DTL (NDTL) in Cash, Gold or approved investments in securities.
- On the basis of the recommendations of Narsimham Committee on banking sector reforms the RBI introduced Liquidity Adjustment Facility (LAF) under which RBI provides financial accommodation to the commercial banks through repos/ reverse repos.
- Repurchase Options or in short Repo, is defined as 'an instrument for borrowing funds by selling securities with an agreement to repurchase the securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed'.
- In India, the fixed repo rate quoted for sovereign securities in the overnight segment of Liquidity Adjustment Facility (LAF) is considered as the 'policy rate'.
- Repo or repurchase option is a collateralised lending because banks borrow money from Reserve bank of India to fulfil their short term monetary requirements by selling securities to RBI with an explicit agreement to repurchase the same at predetermined date and at a fixed rate. The rate charged by RBI for this transaction is called the 'repo rate'.
- Reverse Repo is defined as an instrument for lending funds by purchasing securities with an agreement to resell the securities on a mutually agreed future date at an agreed price which includes interest for the funds lent.
- The Marginal Standing Facility (MSF) refers to the facility under which scheduled commercial banks can borrow additional amount of overnight money from the central bank over and above what is available to them through the LAF window by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit

- Under the Market Stabilisation Scheme (MSS) the Government of India borrows from the RBI (such borrowing being additional to its normal borrowing requirements) and issues treasury-bills/dated securities
- Bank Rate refers to “the standard rate at which the Reserve Bank is prepared to buy or re-discount bills of exchange or other commercial paper eligible for purchase under the Act.
- OMOs is a general term used for market operations conducted by the Reserve Bank of India by way of sale/ purchase of Government securities to/ from the market with an objective to adjust the rupee liquidity conditions in the market on a regular basis.
- The Monetary Policy Committee (MPC) consisting of six members shall determine the policy rate to achieve the inflation target through debate and majority vote by a panel of experts.
- The Monetary Policy Framework Agreement is an agreement reached between the Government of India and the Reserve Bank of India (RBI) to keep the Consumer Price Index (CPI) inflation rate between 2 to 6 per cent.
- Choice of a monetary policy action is rather complex in view of the surrounding uncertainties and the need for exercising trade-offs between growth and inflation concerns. Additional complexities arise in the case of an emerging market like India where inflation is influenced by factors such as international petroleum prices and food prices.